A

GENERAL HISTORY

OF THE

DICHLAMYDEOUS PLANTS,

COMPRISING COMPLETE

DESCRIPTIONS OF THE DIFFERENT ORDERS;

TOGETHER WITH THE

CHARACTERS OF THE GENERA AND SPECIES, AND AN ENUMERATION OF THE CULTIVATED VARIETIES;

THEIR PLACES OF GROWTH, TIME OF FLOWERING, MODE OF CULTURE, AND

USES IN MEDICINE AND DOMESTIC ECONOMY;

THE SCIENTIFIC NAMES ACCENTUATED, THEIR ETYMOLOGIES EXPLAINED, AND THE CLASSES AND ORDERS

ILLUSTRATED BY ENGRAVINGS,

AND PRECEDED BY INTRODUCTIONS TO THE LINNÆAN AND NATURAL SYSTEMS,

AND A GLOSSARY OF THE TERMS USED:

THE WHOLE

ARRANGED ACCORDING TO THE NATURAL SYSTEM.

BY GEORGE DON, F.L.S.

IN FOUR VOLUMES.

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MDCCCXXXIV.
INDEX TO THE THIRD VOLUME,

COMPRISING THE

SYSTEMATIC AND ENGLISH GENERIC NAMES, AND THE ENGLISH AND SYSTEMATIC SYNONYMIES.

* * * In this Index the systematic names used, and the English names in common use, are in Roman letters; the synonyms in Italics; the names of Classes, Sub-classes, and Orders in large capitals; and the names of Sub-orders and Tribes in small capitals.

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INDEX TO THE THIRD VOLUME.

Flowers hermaphrodite, monoecious or dioecious (f. 1. b. c. f. 3. b. c.), axillary. Calyx gamosepalous (f. 3. a. b.), 5-toothed, sometimes obsolete. Corolla 5-petalled (f. 2. a. f. 1. c. f. 3. c.), but usually only 5-parted, distinct from the calyx, and sometimes somewhat continuous with it, rising from the margin of the torus, sometimes fringed, constantly yellow, white, or red, very cellular, with strongly marked, reticulated veins. Stamens 5, either distinct, or joined in 3 parcels, and sometimes all together; filaments rarely pilose; anthers 2-celled, very long, sinuous, rarely ovate and short. Style rarely almost wanting, crowned by 3-5 2-lobed stigmas, which are thick and velvety, but rarely fringed. Ovarium 1-celled, with 3 parietal placentas. Fruit fleshy, more or less succulent, crowned by the scar formed by the calyx, 1-celled (f. 3. c. f. 2. b.), with 3 parietal placentas, which are indicated on the outside by nerves. Umbilical funicle timeud towards the seeds. Seeds frequently obovate, flat, fixed to the parietes of the fruit, enveloped in an arillus, which is either juicy, or dry and membranous; testa coriaceous, often thick at the margins; hyolum oblique at the top of the seed. Embryo straight, flat, without albumen. Cotyledons foliaceous, palmately nerved; radicle basilar, directed towards the hylum.—Roots annual or perennial, fibrous or tuberous. Stems herbaceous, climbing by means of tendrils. Leaves palmate, or with palmate ribs, succulent, covered with numerous asperities. Tendrils solitary, lateral, divided or undivided. Flowers solitary, panicked, or in fascicles. Bracteae usually wanting. Branches rising between the leaves and tendrils.

This order is nearly related to Passifloraceae, to which they are so closely allied, as hardly to be distinguishable, except in their monopetalous corolla, sinusous stamens, unisexual flowers, and exalbuninous seeds, the habit of both being nearly the same. There is an affinity between the order and Campanulaceae in the perigynous insertion of the stamens, the inferior ovary, the single style with several stigmas, the quinary division of the flower, connected with the ternary division of the fruit, and some analogy in the nature of the floral envelopes. The small tribe Nhandiröbeae consists of plants having the habit of Cucurbitaceae, but some resemblance in their fruit to that of Lecythidaceae, which, as is well known, border close upon Myrtaeae; but beyond this resemblance of the fruit, which appears altogether to be a structure of analogy rather than that of affinity, there is nothing to confirm the approachment. Cucurbitaceae is one of the most useful orders in the vegetable kingdom, comprehending the melon, the cucumber, the choco, and the various species of gourd and pumpkin, all useful as food for man. A bitter laxative quality perhaps pervades all these, which in the colocynth is so concentrated as to become an active purgative principle. The colocynth of the shops is prepared from the pulp of Cucumis colocynthus; it is of so drastic and irritating a nature, as to be classed by Orfila among his poisons; but, according to Thunberg, this gourd is rendered perfectly mild at the Cape of Good Hope, by being properly pickled, Ainslie 1. p. 85. The bitter resinous matter in which the active principles of colocynth are supposed to exist, is called by chemists colocynthine. A waxy substance is secreted by the fruit of Benincasa cerifera. It is produced in most abundance at the time of its ripening. Delislei descrip. The leaf of Feuillea cordifolia, is asserted by M. Drapiez to be a powerful antidote against vegetable poisons. Edinb. phil. journ. 4. p. 221. The fruit of Trichosanthes palmata, pounded small, and intimately blended with warm cocoa-nut oil, is considered a valuable application in India for cleansing and healing the offensive sores which sometimes take place in the inside of the ears. It is also supposed to be a useful remedy poured up the nostrils in cases of ozema. Ainslie 2. p. 85. The root of Bryonia possesses powerful purgative properties, but is said to be capable of becoming wholesome food, if properly cooked. The perennial roots of all the order appear to contain similar bitter drastic virtues, especially that of Momordica elatifterium or Squirtin...
Cucurbitaceae.

Cucumber. An extremely active poisonous principle, called
eatine, has also been found in the placentas of the fruit of this
plant. It exists in such extremely small quantity, that Dr.
Clutterbuck only obtained 6 grains from 40 fruit. Edinb. phil.
journ. 3. p. 307. An ingenious explanation of the cause of the
singular ejection of the seeds of this plant will be found in
Dutrochet's Nouvelles Recherches sur l'Exosmosis. The root of
Brònia rostrà is prescribed in India internally in febrility
in cases of piles. It is also used as a demulcent, in the form of
powder. That of Brònia cordifòlia is considered cooling, and
to possess virtues in complaints requiring expectorants. Ainslie
2. p. 21. The root of Brònia epìga'a was once supposed to
be the famous colomba-root, to which it approaches very nearly
in quality. The tender shoots and leaves of Brònia scìabra are
aperient, having been previously roasted. Ainslie 2. p. 212. The
seeds of all the species are sweet and oily, and capable of forming
very readily an emulsion. Those of Ampelosicyos scòndens are
as large as chestnuts, and said to be as good as almonds, having
a very agreeable flavour. When pressed they yield an abundant-
ance of oil, equal to that of the finest olives. De Candolle
remarks that the seeds of this family never participate in the
property of the pulp that surrounds them.

Synopsis of the Genera.

Tribe I.

Nhandìróbèe. Tendrils axillary, in the place of peduncles.
Flowers dioecious.

1 Feùlèla. Calyx of the male flowers 5-cleft. Petals 5,
joined at the base. Stamens 5, inserted with the petals, some-
times 10, but 5 of them are sterile. Calyx of the female flowers
5-cleft. Petals 5, distinct. Styles 3; stigmas broad, bifid.
Fruit globose, fleshy.

2 Zànània. Male flowers. Calyx 3-lobed (f. 1. a.). Petals 5,
joined into a 5-parted rotate, spreading corolla (f. 1. b. c.).
Stamens 5, joined at the base; anthers 1-celled. Female flowers.
Calyx with a long turbinate tube, and a 5-lobed limb.
Corolla as in the male flowers. Styles 3, spreading, bifid at the
apex. Fruit long, turbinate, fleshy; seeds winged (f. 1. d. e.).

Tribe II.

Cucùribìs. Tendrils lateral, stipular. Flowers herma-
phrodite, dioecious, or monoecious.

3 Lagènàrià. Calyx campanulate, with subulate or broadish
segments; corolla white; petals obovate. Stamens 5, triad-
phalous. Stigmas 3, thick, 2-lobed. Fruit 3-5-celled. Flowers
dioecious.

4 Cu'cumis. Calyx tubularly-campanulate, with subulate
segments. Petals almost distinct. Stamens 5, in 3 parcels.
Stigmas 3, thick, bipartite. Fruit 3-6-celled. Flowers monoecious
or hermaphrodite, yellow.

5 Lu'fìa. Male flowers panicked; tube of calyx hemisphè-
rical. Petals distinct. Stamens 5, free; anthers very sinuous.
Female flowers solitary; tube of calyx clavate. Stigmas reni-
form. Fruit ovate, 3-celled. Flowers yellow.

6 Benìncà'sa. Flowers polygamous, monoecious, solitary;
Corolla 5-petalled (f. 3. c.); petals oblong, fringed (f. 3. d.). Stamens 5, in 3 packets. Female flowers. Limb of calyx 5-toothed. Corolla as in the male. Stigma capitate, 3-lobed, ex Bojer. Fruit fleshy, 2-3 feet long, and 8 inches thick, elongated, furrowed (f. 3. c.). Flowers purple.


19 **Involucra'ria**. Flowers monoecious. Male ones umbellate, sessile; bracteas reniform, fringe-toothed, involucrum-formed. Tube of calyx obconical; sepals linear, acute. Anthers joined together. Female flowers solitary, on long peduncles.


21 **Argu'ria**. Flowers monoecious. Male flowers. Calyx campanulate, 5-toothed. Corolla joined with the calyx, ventricose, red, 5-parted. Stamens 2. Female flowers with a calyx and corolla as in the males, and 2 sterile stamens. Style semibifid; stigmas bifid. Fruit 2-4-celled, many-seeded, somewhat tetragonal.

† Genera not sufficiently known.

22 **Zu'cca**. Flowers solitary, axillary. Bracteas large, concave, involving a large, coloured, 5-sepal'd calyx, and girded by 5 scales at the base. Stamens 5.

23 **Alla'sia**. Flowers hermaphrodite. Calyx gamosepalous, girded by a short involucrum. Segments 5, acute, pilose. Corolla 4-petalled; petals pilose. Stamens 4, but more probably 8, joined by twos; anthers 2-lobed. Style subulate, crowned by an acute stigma. Berry fleshy, large, oblong, obtuse, 1-celled, many-seeded.

24 **Gron'ovia**. Flowers hermaphrodite. Calyx funnel-shaped, 5-parted; scales 5, linear, petal-formed, pellucid, alternate with the calycine segments. Stamens 5, free, alternating with the scales. Style crowned by a capitata stigma. Berry dry, nearly globose, 1-seeded, crowned by the dry permanent calyx.


**Tribe I.**


**Lin. syst. Diòecia, Pantàndria.** Flowers dioecious. Male flowers. Calyx 5-cleft beyond the middle. Petals 5, rather joined at the base, inserted in the throat of the calyx, and alternating with the sepals. Stamens 5, inserted with the petals, and alternating with them, sometimes 10, but when this is the case, 5 of which are always sterile. (ex Juss.) Anthers 2-celled, didymous. Female flowers. Tube of calyx adnate to the ovarium; limb 5-cleft. Petals 5, distinct, or joined at the base, oblong. Lamellae or abortive stamens 5, sometimes alternating with the petals (ex Juss.). Styles 3. Stigmas broad, bluntly bifid. Fruit globose, fleshy, 3-celled, indehiscent, with solid bark and a large fleshy trigonal central axis; cells many ovulate. Ovula erect from the centre. Seeds compressed, oval. Embryo straight. Cotyledons flat, rather fleshy.—Introtropical American, rather frutescent climbing herbs. Leaves alternate, petiolate, exstipulate, palmately nerved, cordate, glabrous. Tendrils axillary, spirally twisted, in place of peduncles. Peduncles axillary, 1 or many-flowered. Flowers small. Seeds oily, bitter. This genus has a habit emulating *Passiflora*. Fruit in the form of that of *Coussapoa*, a genus of *Leycidiceae*.

1. **Punca'táta** (Poir. dicrt. 4. p. 418.) leaves 3-lobed or ternate, beset with glandular dots on both surfaces along the nerves, but more especially beneath; leaves of lanceolate, rather cut. *C. O. S. Native of St. Domingo. Trichosanthes puncticata, Lin. spec. 1432. amoen. acad. 3. p. 423. exclusive of the country. Feuillea trifolítia, Reich. syst. 4. p. 258.

**Dotted-leaved Feuillea.** Pl. cl. 2

2 F. **Tri'bolá'ta** (Lin. spec. ed. 1. p. 1014.) leaves rather glan'dular on both surfaces, 3-parted or trifid; lower lobes obtuse, upper ones acute. *C. O. S. Native of Brazil. F. scán'dens β, Lin. spec. ed. 2. p. 1457. F. hederácea, Poir. dicrt. 4. p. 419. Chándiróba or Nhandíroba, Margr. bras. 46. lower figure. 3-celled-leaved Feuillea. Pl. cl.

3 F. **Cordifiólla** (Poir. dicrt. 4. p. 418.) leaves glan'dless, cordate, acuminated, or somewhat 3-lobed, and rather serrated. *C. O. S. Native of the West Indies. Plum. ed Burm. t. 209. F. scándens a, Lin. spec. ed. 2. p. 1457. F. hederácea, Turp. in dict. sc. nat. with a figure. The leaves of this species are said to be a powerful antidote against vegetable poisons.

**Heart-leaved Neufillea.** Pl. cl. 4 F. **Javilla** (H. B. et Kunth, nov. gen. amer. 2 p. 124.) leaves glandless, roundish, sinuately cordate, acuminated. *C. O. S. Native of New Granada, in woods near Turbaco, where it is called *Javilla* by the inhabitants. Seeds with subulate margs, hence this species agrees with the genus *Zanonia*.

**Javilla Neufillea.** Pl. cl.

**Cult.** A light rich soil will suit the species of *Feuillea*; and cuttings of them will root readily under a hand-glass, in heat. They are well fitted for training up rafters in stoves.


**Lin. syst. Diòécia, Monàdelphía.** Flowers dioecious. Male. Calyx 3-lobed (f. 1. a.). Petals 5, joined into a 5-parted rotate corolla (f. 1. b. c.). Stamens 5 (f. 1. c.); filaments flat, connected at the base; anthers 1-celled, adnate to the tops of the filaments. Female. Tube of calyx long, turbinate; limb 5-
lobed. Corolla as in the male. Styles 3, spreading, bifid at the apex. Fruit long, turbinate, fleshy, having a circular line at the apex, formed from the vestige of the calyx, opening by 3 valves at the top, 3-celled; the rind solid: central placenta fleshy, large, trigonal; cells bivolute. Seeds ovate, margined by a foliaceous wing (f. i. e. d.), exalbimous. Embryo inverted.—Smooth, climbing, Indian plants. Leaves alternate, petiolate, exstipulate, ovate-lanceolate, coriaceous at the base, acuminate, quite entire. Tendrils axillary. Peduncles also axillary and racemose. This genus, from the general form of the fruit, is like the genus Couratari, but from the characters it is allied to Fœillea. The interior fabric of the seeds is unknown.

Sect. I. Zanonia (see genus for derivation). Blum. 1. c. Cells of fruit 2-seeded. Fruit elongated, somewhat tetragonal.

1. Z. indicæ (Lin. spec. 1157.) leaves elliptic, acute, rather cordate at the base; racemes axillary. ḥ.  ɴ.  S. Native of Malabar, Ceylon, and Java. Blum. 1. c. Penivaralli, Rheed. mal. 8. t. 47 and 48.

Indian Zanonia. Pl. cl.

Sect. II. Alsoximtra (from alos, aloe, a grove, and μερα, mitra, a girdle; the plants grow in groves and entwine round the trees by means of ring-like tendrils.). Blum. 1. c. Cells of ovarium many-seeded. Fruit hemispherical, truncate at the apex, or elongated.

2. Z. macrora (Blum. 1. c.) leaves ovate-elliptic, acute, rounded at the base; racemes axillary. ḥ.  ɴ.  S. Native of Java, on the mountains of Parang.

Large-fruited Zanonia. Pl. cl.

3. Z. sarcophylla (Wall. pl. rar. asiat. 2. p. 28. t. 132.) leaves trifoliolate; leaflets thick, fleshy, ovate, obtuse, quite entire. ḥ.  ɴ.  S. Native of the East Indies, in sterile exposed situations along the banks of the Irawaddi. The plant climbs by means of simple and slender tendrils. The leaves are of a pale glaucous colour. Flowers small, very numerous, forming ample, greenish, nodding panicles. The different sexes are produced in distinct plants.

Fleshy-leaved Zanonia. Shrub cl.

4. Z. clavigera (Wall. 1. c.) smooth; leaves trifoliolate; leaflets oblong, acuminate, quite entire; fruit large, clavate. ḥ.  ɴ.  S. Native of Silhet, where it is called in the Bengalee language Kishnobra. The fruit is 3 inches long, and as thick as a thumb.

Club-bearing Zanonia. Shrub cl.

5. Z. angulata (Wall. 1. c.) smooth; stem angular; leaves simple, somewhat hastately lanceolate, coriaceous at the base; fruit large, clavate. ḥ.  ɴ.  S. Native of Silhet. The fruit is as long as a finger, and very thick.

Angular-stemmed Zanonia. Shrub cl.

6. Z. cissoides (Wall. 1. c.) stem filiform, angular; leaves pedate, with 5 or 7 leaflets; leaflets lanceolate, acuminate at both ends, coarsely and cuspidately serrated; petioles and peduncles pilose. ḥ.  ɴ.  S. Native of Nipaul.

Cissus-like Zanonia. Shrub cl.

7. Z. laxa (Wall. 1. c. p. 29.) stem filiform, much branched, bifariously pilose; leaves trifoliolate; leaflets acuminate, serrated, intermediate one lanceolate, lateral ones half cordate; petioles and peduncles pilose. ḥ.  ɴ.  S. Native of Silhet.

Loose Zanonia. Shrub cl.

8. Z. heterospé̆ma (Wall. 1. c.) stem filiform, very slender; leaves pedate, with 5 leaflets; leaflets lanceolate, acuminate, serrated; capsule clavate, angular, borne on very long capitate peduncles; seeds scabrous from scales.  h.  ɴ.  S. Native of Mount Taong Dong, near Ava. Capsule chartaceous, trigonal, 8 lines long, with a 3-toothed mouth. The scales on the seeds are elegantly imbricated, and girded by a narrow margin.

Variable-seeded Zanonia. Shrub cl.

Cult. See Fœillea, p. 3. for the culture and propagation of the species.

Tribe II.

CUCURBITACEE. (plants agreeing with Cucurbita in important characters.) D. C. prod. 3. p. 299. Tendrils lateral, stipular. Flowers hermaphrodite, dioecious, or monocious.

III. LAGENARIA (from lagena, a bottle; form of fruit of some of the species). Ser. diss. 1. c. D. C. prod. 3. p. 299.—Cucurbita species of authors.

Lin. syst. Diocèia, Polydélphie. Calyx campanulate; segments subulate or broadish, shorter than the tube. Corolla white; petals obvolute, rising from beneath the margin of the calyx. Male. Stamens 5, in 3 parcels, the fifth one free. Female. Style almost wanting; stigmas 3, thick, 2-lobed, granular. Fruit 3-5? celled. Seeds obvolute, compressed, 2-lobed at the apex, with tumid margins. Flowers monocious.

1. L. vulgâris (Ser. mss. ex D. C. prod. 3. p. 299.) plant musky scented, clothed with soft pubescence; stems climbing; tendrils 5-4-eleft; leaves cordate, nearly entire, biglandular at the base, pilose, rather glaucous; flowers monocious, stellate, spreading much, in fascicles; connexives of anthers beset with oblong-ovate, acute papillae; fruit pubescent, but when mature quite smooth; flesh white, edible. ḥ.  ɴ.  H. Native within the tropics. Cucurbita lagenaria, Lin. spec. 1484. Sieb. hist. 1. t. 69.—Rumph. amb. 5. t. 144.—Mor. hist. 2. p. 29. sect. 57. 1. s. 1. 2, 3. Flowers large, white. Fruit shaped like a bottle; when ripe of a pale yellow colour, some near 6 feet long, with a roundish bottom and a neck; the rind becoming hard, and being dried, contains water; it is then of a pale bay colour. The bottle-gourd is called Charrab by the Egyptians. The poor people eat it, boiled with vinegar, or fill the shells with rice and meat, thus making a kind of puddling of it. It grows in all parts of Egypt and Arabia, wherever the mountains are covered with rich soil. In Jamaica and many other places within the tropics, the shells are generally used for holding water or palm wine, and serve as bottles. The pulp of the fruit is often employed in resolutive poultices; it is bitter and purgative, and may be used instead of colocynth.

Var. a, goîrda (Ser. mss. ex D. C. l. c.) fruit unequally biventricose.—Moris. hist. sect. 1. t. 5. f. 1. Dodon. pempt. 688. f. 1. Bottle gourd. Gourde des pélerins.

Var. β, gourdîrda (Ser. l. c.) fruit ventricose at the base, neck oblong.—Rumph. amb. 5. p. 398. t. 144. Braam. icon. chin. t. 17. Commonly called Gougearde.

Var. γ, depresseïa (Ser. l. c.) fruit globosus, depressed.

Var. ζ, turbiníta (Ser. l. c.) fruit somewhat campanulated pear-shaped. Mor. hist. sect. 1. t. 5. f. 2. Dodon. pempt. t. 669. f. 1.

Var. ε, clavíta (Ser. mss.) fruit obovate-oblong, club-shaped.

—Moris. hist. sect. 1. t. 5. f. 3. Dodon. pempt. 669. f. 2. Gourde trompetette, Gourde massue, or Trumpet gourd.

CUCURBITACEÆ. III. LACENARIA. IV. CUCUMIS.

List of Melons.

Var. α, reticulatus (Ser. in D. C. prod. 3. p. 300.) fruit roundish or oblong, with a grey reticulated rind.—Blackw. herb. t. 329. The following sorts of melons belong to this variety:—

1 Beechwood melon. This is an excellent, early, greenish yellow kind, with a netted rind and a greenish-white flesh, of a middle size.

2 Melon maraicher. The flesh of this sort is very thick and watery; hardly sweet-scented.

3 Melon de Honfleur. A late melon, with a thin yellow rind, and pale red sugary flesh. It is of inferior quality but large in size.

4 Melon des Carmes. A well-flavoured large fruit, with a thick orange rind, and juicy sugary pulp.

5 Melon de Langeais. A middle-sized, ribbed fruit, with orange-coloured, sugary, sweet-scented flesh.

6 Melon sucrin de Tours. Fruit large, with firm, sugary, orange-coloured flesh.

7 Sucrin à chair blanche.

8 Sucrin à chasssis.

9 Sucrin vert.

10 Sucrin à petits grains.

11 Sucrala. A late green middle-sized netted melon.

Var. β, Cantaloupe (Ser. in D. C. prod. 3. p. 300.) fruit large, with broadly ribbed, and furrowed, warty, thick rind. The following sorts belong to this variety.

1 Early Cantaloup. A deep-furrowed, early, middle-sized kind, with white, deeply-furrowed, thin skin; and orange-coloured flesh, not very highly flavoured. It sets well, and is a great bearer.

2 Silver cantaloup. Cantaloup argenté. A shallow-furrowed, middle-sized, fruit, and before it is full grown is mixed with silver and green.

3 Large black Holland cantaloup. Cantaloup gros de Hollande. A large fruit, with green, furrowed, thin rind: and red rather coarse flesh.

4 Hybrid cantaloup. A small good early fruit, with a whitish rind and red pulp.

5 Montagu cantaloup. This is a variety produced from the Italian green-fleshed and the smooth scarlet-fleshed cantaloup. A middle-sized, early good fruit, with a thick, yellow, furrowed rind and pale red flesh, which is soft and juicy, and completely melting in the mouth.

6 Netted cantaloup, or White-seeded cantaloup. This is a very juicy, highly-flavoured, small fruit, with a thin, netted, yellow rind.

7 Orange cantaloup. A small, round, pale yellow, netted fruit. The flesh, when just fit for cutting, is orange; but when ripe it is more red. In respect to flavour, it is excelled by none of the melon tribe, being juicy, sugary, and rich. The plant is a free grower, an early setter, and a great bearer.

8 Black rock cantaloup. A large late melon, with a thick dark green rind, and salmon-coloured flesh. It is juicy, but not very highly flavoured.

9 Carobceded rock cantaloup. Very like the black rock, as to colour and flavour, but differs in being cheese-shaped.

There are a small and a large kind of this; the smaller kind is the best.

10 Lee's rock cantaloup. Rather long than round, and more green than black. Much the same in flavour as the preceding.

11 Scarlet-fleshed cantaloup. A middle-sized early good fruit, with a thick yellow rind and red sweet flesh. It is particularly high flavoured.


Ribbed Gourd. Pl. cl.

3 L. ? hispida (Ser. l. c.) greyish, pilose; leaves cordate, 5-angled, acuminate, denticulated, beset with pedicellate glands beneath; stem and petioles densely hispida; flowers densely clothed with ferruginous hairs. O. F. Native of Japan and the East Indies. Cucurbita hispida, Thunb. fl. jap. p. 322. and Willd. spec. 4. p. 608. Walsh of the Indians. Perhaps only a variety of L. vulgaris.

Hispid Gourd. Pl. trailing.

4 L. ? idiota (Ser. l. c.) leaves cordate, cuspidate, absolutely 3-lobed, pubescent, biglandular at the base; lateral lobes very short and cuspidate; fruit pear-shaped. O. F. Native of Guinea and the East Indies. Cucurbita idiota, Willd. spec. 4. p. 607. Blum. bijdr. p. 390. Labu-eeyer and Kukuk of the Hindoos. Perhaps only a variety of L. vulgaris. In India the fruit of this plant is held in great veneration by the Hindoos, in their religious ceremonies.

Worshipped Gourd. Pl. trailing.

Cult. See Cucurbita, p. 41. for culture and propagation.


LIN. SYST. Dioecia, Polypodiphila. Calyx tubularly campanulate; segments subulate, hardly the length of the tube. Petals hardly joined together or to the calyx.—Male. Stamens 5, in 3 parcels.—Female. Stigmas 3, thick, bipartite. Fruit 3-6-celled. Seeds ovate, compressed, not marginate. Flowers monocoeous or hermaphrodite, yellow.

1 C. melo (Lin. spec. 1486.) stem trailing, scabrous, cirsiferous; leaves roundish, angular, petiolate; male flowers having the tube of the calyx rather ventricose at the base, and rather dilated at the apex; stamens inclosed; anthers shorter than their connectives; the hermaphrodite flowers with the anthers as in the males; stigmas 3-4, shortly 2-lobed; fruit ovate or sub-globose, 8-12-furrowed; flesh sugary, yellow, red, or white. O. F. Native of Asia. Called rhetmou by the Hindoos; Melon, Eng. and Fr.; Melone, Germ.; Melleone, Ital.

The melon is a tender annual, producing one of the richest fruits brought to the dessert, and has been cultivated in England since 1570, but the precise time of its introduction is unknown. It was originally brought to this country from Jamaica, and was, till within the last fifty years, called the musk-melon. The fruit, to be grown to perfection, requires the aid of artificial heat and glass throughout every stage of its culture. Its minimum temperature may be estimated at 65°, in which it will germinate and grow; but it requires a heat of from 75° to 80° to ripen its fruit, which, in ordinary cases, it does in 4 months from the time of sowing the seed.

Varieties.—There are numerous varieties, many of which, especially those raised from seeds brought from Italy and Spain, are not worth cultivating. The best sorts are included under the name of Cantaloups, an appellation bestowed on them from a seat of the Pope near Rome, where this variety is supposed to have been originally produced. The general character of the Cantaloups is a roundish form, rough, warty, or netted outer rind; neither very large in fruit or leaves. The Romans, an Italian sort, is next in esteem, are generally oval-shaped, regularly netted; the fruit and leaves middle-sized, and the plants great bearers. Many varieties of both these sorts, however, that were formerly in esteem, are now lost, degenerated, or supplanted by others of Spanish or Persian origin. The following is a descriptive list of the sorts.
12 Italian green-fleshed. A middle-sized early good fruit, with a thick yellow rind and green flesh; in flavour both rich and sweet.
13 Italian green-fleshed cantaloup. A large thin-skinned lemon-coloured and lemon-scented fruit, of excellent flavour, but not a great bearer.
14 Egyptian green-fleshed. A middle-sized early good fruit, with a thin white netted skin and green flesh; in flavour resembling the preceding.
15 Dutch green-fleshed. An indifferent sort.
16 Crimean green-fleshed. A useless late fruit, of middling size, with a thin green skin and pale red flesh.
18 Green-fleshed Masulipatam. A very small and excellent early sort, with green skin and green flesh.
19 Green-fleshed Valparaiso. Not very good.
20 Red-fleshed Valparaiso.
21 Dutch rock. A rather large good fruit, with a thick yellow rind, and orange-coloured flesh.
22 Early rock. A good early fruit.
23 Golden rock. A middle-sized fruit, with a thick yellow rind and pale red flesh, of excellent flavour.
24 Scarlet rock.
25 Silet rock. A large late fruit, with a thick yellow rind, and pale red flesh, which is juicy, sweet, and well-flavoured.
26 Netted scarlet-fleshed. A good sort.
27 Smooth scarlet-fleshed. A middle-sized fruit, of excellent flavour. The rind is thick, smooth, and yellow, and the flesh orange-coloured.
28 Windsor scarlet-fleshed. A rather large, excellent-flavoured, late kind, with thick green rind, and salmon-coloured flesh.
29 Lee's Romana. A middle-sized, longish, shallow-furrowed fruit. Rind hard, partly netted, and pale yellow: the flesh full yellow and pretty high flavoured, but not very juicy.
30 Large netted Romana. The largest of the Romanas, regularly netted all over, and shallow-furrowed, often attaining a large size. Rind hard and pale yellow, the flesh full yellow, but not very juicy: very high-flavoured, if eaten sharp ripe.
31 Fair's Romana. A small oval fruit, the rind greenish yellow when ripe, and the flesh a pale yellow, not very juicy; but well-flavoured and agreeable.
32 Early Polignac. An early rich middle-sized fruit, with a thick yellow rind, and pale red flesh. It is in frequent cultivation.
33 Portugal. There are two varieties of this kind, a small and a large sort; they are noted as good bearers and early.
34 Sweet Italian. A large orange-coloured sort, of moderate quality.
35 Netted succado. A middle-sized late green-skinned sort.
36 Small Levant. A middle-sized sort, with a thick green skin and pale red flesh. Not of good quality.
37 Smooth yellow-fleshed Valparaiso. A middle-sized, late, green, thin-skinned sort; the flesh white, of moderate flavour.
38 Brasilian. An inferior middle-sized sort, with thin green skin and orange-coloured flesh.
39 Melon d'été d'Odesse. A rather large, later, indifferent fruit, with thin orange skin and white flesh.
40 Melon d'Olor. A very small fruit, with yellow skin and white flesh, of good quality.
41 Netted French melon. A rather large late fruit, with a thick yellow rind and yellow flesh, of bad quality.
42 Nutmeg. A late green, thick-skinned sort, with pale flesh.
43 Queen Ann's melon, early queen, or queen's pocket melon. A very small fruit, with ornamental striped thin skin, and white flesh.
44 Carthagenia. A large high-flavoured fruit, with a thick orange-coloured rind and pale red flesh.
45 Cassabar. A large late fruit, with green thin skin, and white flesh.
46 Cephalaria. A large oblong fruit, with thin yellow skin and green flesh, of tolerable flavour.
47 Château. A large fruit of little use; the skin is thick and yellow, and the flesh pale red.
48 Gahoon. A large late fruit, of little value; with yellow skin and yellow flesh.
49 Geree, ostrich egg. A middle-sized late fruit, of excellent flavour: the skin as well as the flesh is green. The plant is rather tender.
50 Groce Prescott fond blanc. A large late fruit, with a thick yellow rind, and orange-coloured flesh.
51 Petit Prescott. Fruit depressed, crowned at the top; ribs warted: flesh delicious.
52 Cantaloup natif d'Allemagne. An early fruit, with a greenish-yellow smoothish rind, but not of good quality.
53 Cantaloup bott de Siam. Fruit very much depressed, with a dark green rind, full of warted ribs.
54 Hardy ridge. A middle-sized late fruit, with a thick yellow rind and red flesh, of good flavour.

A list of melons which are hardly known; but none of them are perhaps worth cultivation.

1 De Andalousie. 2 Cantaloup à chair verte. 3 Cantaloup à fond noir. 5 Cantaloup Galleux. 6 Chili musk. 7 Crimeau. 8 Citron. 9 D'Espagne. 10 Fagis. 11 Fin hatif. 12 Golden egg. 13 Grand Mogul. 14 Green Spanish oval. 15 Gros Galleux à chair verte. 16 Hardy scarlet-fleshed. 17 Highbore. 18 D'Hiver. 19 Large Astrachan. 20 Levant. 21 Melon gris des Carmes. 22 Melon of Honda. 23 Melon of Jaffa. 24 Melon Turc. 25 Madeira. 26 Mendoza. 27 Le Mogul. 28 De Beron. 29 Pine apple or Melon d'Ananas. 30 Musk melon. 31 Carthagenia musk melon. 32 Murray's pine-apple. 33 Noir de Hollande très gros. 34 Turkish melon. 35 Valentin or winter melon. 36 Wynestay. Var. γ, Maltesei (Ser. in D. C. prod. 3. p. 300.) Fruit with a smooth thin rind. This variety is divisible into two parts, as Maltese Melons and Persian Melons.

* Maltese melons.

1 Melon de Malte blanc or Melon de Malte à chair blanche. An early middle-sized ovate-oblong fruit, with white watery sugary flesh.
2 Melon de Malte jaune. Flesh of fruit orange-coloured, sweet-scented.
3 Melon de la Morée ou de Candie, or Melon de Malte d'hiver. This kind is cultivated in various countries bordering on the Mediterranean sea, and particularly in the orange gardens at Hiers, near Toulon, whence its fruit is sent to Paris. The skin is thin; the flesh white, firm, sugary, and juicy; not rich, but pleasant. The shape oval, size about a foot long and eight inches broad; of a dark green colour. This fruit is regularly imported, and may be had in the fruit shops from September to January.

** Persian melons.

1 Darce. A good-sized fruit; skin thin and green; flesh white, high-flavoured. A late fruit.
2 Dampiska melon. An excellent, late, rather large fruit, of nearly a cylindrical form, and netted; rind thin and yellow when ripe; flesh green, quite melting, and of excellent flavour. The fruit will keep, if hung up by its stalk, for some time.
3 Large germek. An excellent early green-skinned sort, of considerable size; flesh green.
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4 Small gherkin. This is much smaller than the last-named sort; the skin is yellow and the flesh green.
5 Goongab. A middle-sized late fruit, with yellow rind and white flesh. A useless sort.
6 Green Hoosaine. A middle-sized late sort, of good quality; rind thin, green; flesh white.
7 Striped Hoosaine. A very good late sort, with greenish-yellow rind, and white flesh.
8 Kasan sugar melon. A good sort.
9 Keiseng. This is said to be one of the best Persian melons; the skin is thin, pale yellow, and red, and the flesh white.
10 Kurcheing. A very good sort, of considerable size; the skin is lemon-coloured, and the flesh white.
11 Melon of Erivan.
12 Melon of Gherga. A middle-sized good fruit, with yellow skin and red flesh.
13 Melon of Nukshevan. This is an excellent late kind; the skin is yellow, and the pulp white.
14 Melon of Nussarabad.
15 Melon of Seen. A middle-sized fruit of indifferent quality. It is a late sort, with yellow rind and green flesh.
16 Green Persian. A fruit of indifferent flavour.
17 Oldaker's Persian. A fruit of considerable size but no merit; the rind is orange-coloured, and the flesh green.
18 Sir Gore Ouseley's Persian. A large fruit of good quality; the skin is yellow and the flesh white.
19 Sweet melon of Isphahan. This is said to be one of the very best melons. It grows to a large size; the skin is yellow and the flesh green, crisp, sugary, and rich in taste.
20 Talibee melon.
21 Tehran melon.
22 Salonica. A round fruit, with a gold-coloured rind, and white flesh; improves in flavour and richness till it becomes quite soft; consistence of its pulp nearly that of a water melon, and very sweet.

On the degeneracy of the larger varieties of Persian melons.—Mr. Knight thinks that it would be strange if every large and excellent variety of melon did not degenerate, under our ordinary modes of culture. For every large and excellent variety of melon, must necessarily have been the production of high culture and abundant food; and a continuance of the same measures to it, in its highly improved state, must be necessary to prevent its reverting in successive generations from that state.

Abundant food, it is true, is generally, perhaps always, given by the British gardener to his melon plants: but sufficient light, under the most favourable circumstances, can only be obtained during a part of the year, and a sufficient breadth of foliage to enable the melon plant properly to nourish a fruit of large size and rich saccharine quality, so that it may obtain the highest state of growth and perfection which it is capable of acquiring, has rarely, and probably never, been given in any season of the year, by any British gardener. Mr. Knight has cultivated the Sweet Isphahan melon, and found it a very superior variety. He has cultivated this variety generally in brick pits, surrounded by hollow walls, through which warm atmospheric air at all times enters abundantly; putting each plant in a separate large pot, and suffering it to bear one melon only; but the fruit sets sufficiently well in a common hot-bed. The rind of the Isphahan melon, being very soft and thin, the fruit is apt to sustain injury on the lower side; they should be raised above the ground a little by some means while young, so as the air may pass under them. When seeds of the Isphahan melon are only wanted, it is quite time enough to sow in the beginning of April, so that the fruit may ripen in August. Very valuable varieties of melons may be obtained, for one generation at least, by cross breeding among the smaller and more hardy varieties of green and white-fleshed melons and the large Persian varieties. It is generally supposed that the offspring of cross-bred plants, as of animals, usually present great irregularity and variety of character; but if a male of permanent character and habits, and, of course not cross-bred, be selected, that will completely overrule the disposition to sport irregularly in the cross-bred variety; alike in the animal and vegetable world, the permanent habit always controlling and prevailing over the variable. The finest varieties of melon are usually supposed by gardeners to be fruits of as easy culture as the pine-apple, but experience has led us to draw a contrary conclusion. If the leaves of the melon plant be suddenly exposed to the influence of the sun in a bright day, which has succeeded a few cloudy days, for a short time only, they frequently become irreparably injured. If the air of the bed be kept a little too damp, the stems of the plants often canker, and the leaves and stalks sustain injury in the common hot-bed; and, if the air be too dry, the plants, and consequently the fruit, are injured by the depredations of the red spider.—Loud. gard. mag. vol. 7. pp. 186, 187, 188.

In the cultivation of the melon, Knight observes, "it is a matter of much importance to procure proper seed. Some gardeners are so scrupulous on this point, that they will not sow the seed unless they have seen and tasted the fruit from which they were taken. It is proper, at least, not to trust to seeds which have not been collected by judicious persons. Some make it a rule to preserve always the seeds of those individual specimens which are first ripe, and even to take them from the ripest side of the fruit. A criterion of the goodness and probable fertility is generally sought by throwing them into a vessel containing water; such as sink are considered as good, and likely to prove fertile, and those that float imperfect. It is remarked of seeds brought from the Continent, that they must have more bottom heat, and the young plants less water, than are necessary for seeds ripened in this country, or young plants sprung from these."

The culture of the melon is an object of emulation among gardeners, and the fruit of the best sorts have a peculiarly rich flavour, thought by some to bear some resemblance to that of the pine-apple. "Ripe fruit," Abercrombie observes, "may be had by forcing at any season, but the main crops, raised for the general demand, are seldom cut, at the earliest, before May, and the last succession mostly ceases to yield fruit after October." "To ripen the largest fine kinds," M'Phail observes, "is a great an atmospheric heat, and a bottom heat to its roots also, is required as is sufficient to ripen the pine-apple in this country; but as the melon is produced from an annual plant, the seeds of which must be sown every year, it requires a different mode of culture. Different methods of culture, and various kinds of earth and of manures have been recommended and used successfully in rearing of melons. The great thing, after planting, is to give them plenty of atmospheric heat, and a sufficiency of external air, and water. Those methods which are most simple and the least expensive, and best calculated to assist in making a suitable climate for the melon to grow in and ripen its fruit well, should be preferred." Soil.—Abercrombie says "The melon will succeed in any unexhausted loam, rich in vegetable rudiments, with a mixture of sand, but not too light. The following is a good composs: two-thirds of top-sift earth from a sheep common, adding sharp sand, if the earth contains little or none, till half is sand; one-sixth of vegetable mould; and one-sixth of well-consumed horse-dung. Or, if the earth is not obtained from a pasture, rotted sheep-dung may be substituted for the last. The ingredients should have been incorporated and pulverized by long previous exposure and turning over. The compost should be dried under shelter before it is used, and warmed in the frame.
for potting," M'Phail says, "Melons will grow and produce fruit of a good flavour, if they be planted in any kind of earth, not of too light a texture, whether it be taken from a quarter of the kitchen garden or from a corn-field, mixed well with good rotten dung; but earth of a loamy nature is the best, because it retains moisture longer than lighter earth. Earth, dug from the surface of a common, where sheep and cattle have long been pastured, is excellent for the melon. It should be broken well, and lie a few months before it is used, and if it be exposed to a winter's frost it will do it good. This sort of earth, if it be taken from the surface of the common, will require no manure the first year of using. I would here mention that unless the earth which I used for the melon plants was very strong, I made it a practice, when the melon-beds were wholly earthed up, to tied the surface all over, which makes the earth retain its moisture longer than if it were left loose."

Earth for melons, according to Nicol, "may be thus composed: one-half strong brown loam from a pasture, a quarter light sandy earth, an eighth part vegetable mould of decayed tree leaves, and an eighth part rotten stable-yard dung. The mould for both cucumbers and melons should be well incorporated, should be exposed to frost, and be frequently turned over to ameliorate." It appears from a passage in Morier's second journey into Persia, p. 147., that pigeons' dung has from time immemorial been much sought after for manuring melons. Immense pigeon-houses are built on purpose to collect it, and when there is a dearth, as melons produce the earliest return of food, every one is eager to cultivate them, and that kind of manure, being then in great demand, sells very high. During the famine in Samaria, mentioned in 2 Kings, ch. vi, it is said to have sold for five pieces of silver the cub. A correspondent in the gard. mag. 2, p. 404. on melon compost, and on the influence of soil on Hydrangea Hortensis, has always used for his melons the compost to which the Dutch so strongly adhere, viz. one-third strong hazel loam, one-third scoring of ditches, and one-third rotten dung, exposing the mixture two years to the influence of the summer and winter, to evaporate what noxious qualities may lurk in the earths: for it is well known, that in proportion to the degree of salt of iron, it will be proportionably sterile. He had often observed the leaves of his melon plants turn yellow, occasionally plants died, for which he could not account; he suspected iron, as it pervaded his district, to be the cause; but as a magnet would not take up any of the compost, his attention was diverted from that point. Similar results in future seasons again called his attention to it, and he added lime, to correct the sulphate of iron, if any; but he lost his whole crop, which he fancied by the application of the lime. As during winter a red oxide filtered from the compost heap, he again felt certain of the presence of iron. He submitted the compost to the test of burning, and having by that means got rid of the superabundant carbon, the magnet immediately detected the iron. He changed his soil, and has never lost since any melon plants. The experiment proves that the old test of the loadstone may be defeated by the presence of other adherent matter; for though it was inactive over the cold soil, it acted in full force upon the soil when, by roasting, it had discharged its gas. While a profitable experiment resulted on the one hand, a great amusement occurred on the other, with some greenhouse plants. He mixed the compost fresh from the ditch with water, and found a precipitation of iron. He used the soil and water to Hydrangea Hortensis, a cutting from the common pink variety, and it so altered the pink colour of the flower to purple, as to form a new plant. He applied the same to other plants, in some of which it altered the colour of the flowers, but in others it had no effect.

Estimate of sorts.—Examine the list. The cantaloupes are in the highest estimation for quality and neatness, although not uniformly such great bearers as others in the list.

Time of beginning to force.—" From the time of sowing, ripe fruit may be cut in about fifteen weeks, as an average period; when many short and winter days fall in the course, it may last eighteen weeks; but when the forcing is not commenced until the days are nearly twelve hours long, and continually lengthening, ripe fruit is sometimes cut in ten weeks. The period also depends upon the sort. Little time is gained by beginning excessively early. The early and main crops are commonly originated from the middle of January to the first week of February, the latter or succession crops at the beginning of March; and late crops, intended to fruit at the end of summer, in the middle of April. M'Phail and Nicol sow in January. " The latter says, "I formerly cut melons for three years successively on the 15th, 12th, and 10th of May, and never sowed before the last week of January or 1st of February. In 1788, when at Rainham Hall in Norfolk, I sowed melons on the 12th of March, and cut ripe fruit on the 20th of May. The kind was the Early golden cantaloup. This shows how little is to be gained, or rather how much may be lost by early forcing."

Forming the seed-bed.—The plants may be originated in a cucumber-bed, and this is the general practice; but Abercrombie prefers a separate bed, built a slight degree higher than for the cucumber at the same season, and adapted to a one or two-light frame, according to the quantity to be raised." Nicol raises the melon almost exactly in the same manner as he does the cucumber.

Choice of seed.—" Seed under the age of two years is apt to run too much to vine, and show more male than female blossoms; but new seed may be mellowed by being carried in the pocket a fortnight or more, till the heat of the body has dried and hardened it. Seed 20 years old has been known to grow and make fruitful plants, but seed that has been kept 3 or 4 years is quite old enough, and less likely to fail than older." M'Phail says it is best not to sow melon seed till it be 2 or 3 years old. It cannot be too old if it be sound and grow well. Nicol says, "I have sown melon seeds 20 years old, from which I have raised very healthy and fruitful plants." Kal. p. 396. Miller and Nicol say young melon seeds may be worn in the pocket, near the body, for several months previous to sowing, which has the effect of fully maturing them. " If seeds of the last season," Nicol observes, "be sown without taking this precaution, or something similar, the plants will not be fruitful, but will run much to vine, and show chiefly male blossoms."—Kal. p. 396.

Sowing.—Abercrombie says, "Having moulded the bed, and proved the heat, sow in pans 3 inches or pots 4 inches deep, rather than in the earth of the bed. Sow a second portion in 5 or 7 days, to provide against failure. Do not at once plunge the pots to the rims."—Pr. gard. p. 108.

Treatment till removed to the fruiting-pit.—" As soon as the plants appear, give air cautiously, guarding the aperture with matting at night and on frosty or gloomy days. At favourable opportunities wipe the condensed steam from the glasses. When the seed-leaves are about half an inch broad, prick the plants into small pots, 5 inches in diameter, 3 in each pot, giving a little aired water just to their roots, then plunge the pots into the earth of the hot-bed partially or to the rims, according to the heat. Admit fresh air every day in moderate weather, at the upper end of the lights, raised an inch or two, according to the temperature of the external air, more freely when sunny than cloudy, shutting closer or quite close as the afternoon advances towards the evening, or sooner, if the weather changes cuttingly cold, and cover the glasses every night with mats, and uncover in the morning, as soon as the sun is high enough to reach the
frames. Give occasionally a very light watering, when the earth appears dry. As the plants advance into the first rough leaves, the first runner-bud in the centre should be stopped, by cutting or pinching the top off, close to the first or second joint, an operation which strengthens the plants, and promotes a lateral issue of fruitful runners. Be careful to support a regular tenor of heat in the bed, by laying first an outward casing of straw-litter round the sides, to defend it from the weather; afterwards, if the heat declines, remove the above casing, and apply a moderate lining of hot dung to one or more of the sides. In matting at night, be careful not to drive the rank steam of the linings into the beds, by letting the ends of the mats hang down.”

Fruiting-bed.—Form it as directed for the cucumber-bed, but 6 inches deeper. M’Phail says, “4 feet high, and after it has stood about a week, treat it down, and make it level, and set the frames upon it.”

Moulding the bed.—Abercrombie directs to “mould it by degrees to 8, 10, or 12 inches’ depth, first laying the compost in little hills of that thickness, one under each light, with the intervals earthed only 2 or 3 inches for the present, till the general heat is moderated.” M’Phail lays in, under each light, a small hill of earth about 1 foot high.

Planting.—When the earth of the hills is warmed by the heat of the bed, and the plants have leaves 2 or 3 inches broad, or have begun to push lateral runners, turn them out of the pots, with the ball of earth entire; set a ball containing one plant in the middle of each hill, inserted clean over the ball; or set at most 2 plants under the centre of a large light. After planting, give a gentle watering over the hills and round the roots, avoiding to wet the shanks of the plants; shut down the glasses close, till the heat and steam arise, then give air moderately.

Extend a slight shade over the glasses in the middle part of warm summer days, if the plants shrink or flag their leaves before fully rooted in the hills, which will be in 2, 3, or 4 days after planting.

Temperature.—“The melon requires a minimum heat of about 65° from the time of germination till the fruitification, and the heat of about 75° to fruit in.”—Abercrombie. M’Phail, as appears from the table in his “Gardener’s Remembrances,” kept his melon and cucumber frames at the same temperature; stating, that if any person kept melon or cucumber plants in the same degrees of heat, they will not fail of success. Nicol’s medium heat for melons is 70°. The proper temperature must be kept up by repeated linings, at least till the middle of July.

After that, sun-heat may suffice to ripen the crop. Till this season the greatest care is necessary not to burn or overheat the plants. M’Phail says, “examine daily with your hand the heat of the bed, pushing your fingers into the dung immediately under the hills of earth in which the plants grow; and if you find the heat likely to be too powerful, pour cold water all round the bottom of the hills of earth, to lower the heat of the bed. Remember this must be daily attended to till the heat of the bed be so declined in the middle, that the roots of the plants be in no danger of being hurt by the heat of the dung under them. In case this necessary precaution has been neglected, till the heat immediately under the stems of the plants has become too hot, pour plenty of water at 80° round about the sides of the hills in which the plants grow, and among the stems of the plants, which will bring the earth and dung immediately under the plants to the same degree of heat as the water which is poured into it. When the heat in the middle of the bed becomes so cool that there is no fear of its being too great for the roots of the plants, watering that part of the bed to keep the burning heat down of course must cease, and as the roots of the plants extend, earth may be added to the hills. As soon as the heat of the bed declines, linings must be applied to it, which will set it into a fresh fermentation, and then the surface upon the bed must be examined occasionally, by pushing the hand into it in different parts, and when a burning heat is felt, pour in some water as before directed. In this way you should persevere, still keeping a strong heat in the linings. Remember that the surface of the bed all round about the hills should be left uncovered with earth, and the dung be loosened occasionally, to let the heat rise freely to nourish the plants.” In July, “melons will do without heat in the linings, but I found by experience that they do best by keeping a heat in the linings all the summer. If a heat be kept on constantly in the linings, and the plants watered sufficiently, they will continue to produce fruit till the middle of October.”

Air.—“As long as weak steam is perceived to rise from the bed, leave an aperture, even at night, for it to escape; guarding against the influx of cold air by a curtain of matting. Admit fresh air to the plants by tilting the glasses more or less at the most favourable hours in a dry day. After the bed has come to a sweet heat, shut down close at night. As the fruit enlarges, it becomes more necessary to seize every proper opportunity of admitting air; raising the lights from 1 to 4 inches, according to the season, the heat of the bed, and temperature of the external air, shutting close if that should turn cold, and always timely towards evening. As confirmed summer approaches, admit air still more freely. Nicol says, “air should be freely admitted, though not in such quantity as for the cucumbers, which do not require so high a temperature as melons do. In sunshine, however, the mercury in the thermometer should be kept down, by the admission of air to about 80° or 75°,” M’Phail says, “look into your melon-pits in the morning, and if there is a dew on them, standing like beads round the edges of the young leaves, it is a good sign; but if there is no dew on them, in the form I have described, they are not in a very prosperous condition. The air in the frames is not sweet; they either want water or sprinkling of water, or else the heat of the air in the frames is too great in the night. In hot weather melons are better to have air left at them all night, and in very warm weather to take the glasses entirely off in the evening, and put them on again in the morning; by this means the plants will get refreshment from the dew in the night.”

Water.—“After the plants are placed on the hills, give opportune gentle waterings, increasing them as the season and the growth of the plants advance. Nicol says, “Water circumspectly and sparingly while the fruit is setting and young in growth, as too much moisture would make it decay. Take every proper care for watering before the middle of May; in summer the afternoon or evening. Use soft water warmed to the air of the frame, and let as little as possible fall on the setting or new set young fruit; nor much near the main head of the plants, for fear of rotting that part. Shut down the lights after watering for a short time; and if in the morning part, and a strong sun, spread a mat over, to prevent the sun from injuring the plants by acting on the water lodged on the spray of the leaves. As a strong steam will now arise, remove the mats in an hour or two, and raise the glasses at the top, to give vent to the steam and give air to the plants. As the fruit becomes nearly ripe, lessen the quantity of water given, barely keeping the plant from flagging, and withhold water when the fruit begins to turn colour.”

C

CUCURBITACEÆ. IV. CUCUMIS.
Rem. p. 300. Knight, finding that the leaves of melons sustained great injury from the weight of the water falling from the watering-pot, pours the water on the tiles which cover the surface of the bed. See Training.

Earthing.—Perform this operation as directed for the cucumber, after the heat of the dung has become moderate, earthing up by degrees the intervals between the hills, till the depth of the earth becomes equal. Eight or ten inches' depth of earth M'Phail states to be enough for the roots of the plants to run in, provided the bed or fermenting mass beneath be made of leaves of trees, or of dung well prepared; for if the bed under the earth be in a good state, the roots will grow into it, and draw from thence considerable nourishment to the plants. The roots of the melon do not naturally run deep, they extend horizontally not far from the surface, especially in forcing frames, where the moist warm air is more confined than in the open atmosphere.—Gard. Rem. p. 63. In early forcing, leave unfilled up with earth a space of about 7 or 8 inches wide, against the inside of the frames, immediately adjoining the hot linings.

"By this method the heat of the linings do more powerfully warm the air in the frames, than if the earth was made level home to the sides of the boards of the frames to which the linings adjoin. But if melons be not planted earlier than the month of May, this precaution need not be attended to, unless the weather prove uncommonly cold, and but little sunshine."

Training.—As the plants advance into the first runners, 3 or four joints in length, if no fruit be shown, stop them at the third joint, in order that they may produce fruitful laterals; and as the runners extend, train them over the surface of the bed with neat pegs. Many of these runners, as the plant proceeds, will show embryo fruit at the joints; but a great many barren ones are occasionally produced, and hence it becomes necessary to regulate them. Abercrombie says, "cut out the superabundant, unfruitful, or evidently useless shoots, especially the very weak and most luxuriant, for the middle-sized are the most fertile." Nicol says, "melons should be kept moderately thin of vines, though not so thin as cucumbers (the foliage being smaller), which should never be much lopped at one time, as they are also apt to bleed. All bruised, damped, or decayed leaves should be carefully picked off as they appear, and the plants should be kept clear from weeds, or any rubbish that may be conveyed into the frames by wind or otherwise. M'Phail directs to cut out from the melon-frames all superfluous or decaying shoots. Stop shoots a joint or two before the fruit, and also cut off the ends of the long running shoots immediately before showing fruit, if there is a leading shoot coming out by the side of it; for you ought to remember always in pruning melons, that a fruit will not swell well except there be a growing shoot before it; and this shoot, which is called a leader, because it leads or draws the sap from the roots to and past the fruit, should be stopped before a joint, that will, if the plant is in good health, sprout out again. Do not let your plants get too full of leaves, and cut off the oldest and worst leaves first. This ought to be done at least once or twice a week, by which method they will be nearly always in a medium state of thinness, and the plants and fruit will derive advantages which they would be deprived of were they suffered to become over-crowded with leaves and shoots, and then a great many cut out at one time. If melons are of a large kind, no more than one or two should be left on a plant to swell off at one time; if smaller three or four fruit may be left."—Gard. Rem. p. 278. Knight, in an ingenious and philosophical paper on the culture of the melon, states "that his crops of melons failed, because watering over the foliage, pruning, weeding, &c. had removed the leaves, on the extended branches, from their proper position, and these leaves, being heavy, broad, slender and feeble, on long footstalks, were never able to regain it. In consequence, a large portion of that foliage which preceded or was formed at the same period with the blossoms, and which nature intended to generate sap to feed the fruit, became diseased and sickly, and consequently out of office, before the fruit acquired maturity." To remedy this defect, the plants were placed at greater distances from each other, viz. one plant of the Salonica variety, to each light of 6 feet long by 4 feet wide. The earth was covered with tiles, and the branches trained in all directions, and hooked down over them with pegs. They were thus secured from being disturbed from their first position, the leaves were held erect, and at an equal distance from the glass, and enabled, if slightly moved from their proper position, to regain it. "I, however, still found that the leaves sustained great injury from the weight of the water falling from the watering-pot; and I therefore ordered the water to be poured from a vessel of a proper construction, upon the brick tiles, between the leaves without at all touching them, and thus managed, I had the pleasure to see that the foliage remained erect and healthy. The fruit also grew with very extraordinary rapidity, ripened in an unusually short time, and acquired a degree of perfection which I had never previously seen. As soon as a sufficient quantity of fruit, between 20 and 30 pounds on each plant, is set, I would recommend the further production of foliage to be prevented, by pinching off the lateral shoots as soon as produced, wherever more foliage cannot be exposed to the light. No part of the full grown leaves should ever be destroyed; however distant from the fruit and growing on a distinct branch of the plant, they still contribute to its support; and hence it arises, that when a plant has as great a number of growing fruit upon part of its branches, as it is capable of feeding, the blossoms upon other branches, which extend in an opposite direction, prove abortive."—Loud. encyc. gard. p. 648.

Setting.—"As the fruit bears into blossom, you may assist the setting of the fruit, by impregnating some of the female blossoms with the male flowers, as described for the cucumber. The melon, however, will also set naturally, and produce fertile seeds, if the time of fructification fall at a season when the glasses can be left almost constantly open."—Abercrombie. Nicol says, "he has proved experimentally, that melons not impregnated will not swell off so fair and handsome as impregnated ones, and, therefore, considers it more necessary to attend to this operation in melons than in cucumbers. Therefore let nature be assisted in this work, considering that she is more under restraint here than if the plants grew in the open air, where the wind, insects, and other casualities, might be helped."—Kalend. p. 334.

Care of fruit.—"As the fruit increases to the size of a walnut, place a flat tile or slate under each to protect it from the damp of the earth; the slab thus interposed will also assist the fruit to ripen, by reflecting the rays of the sun."—Abercrombie. M'Phail says, "The fruit should lie upon dry tiles. When the fruit is young, it is better to have a gentle shade of leaves, but when it is fully swelled, it should be entirely exposed to the sun." Nicol advises placing the fruit on bits of slate or glass some time before it begins to ripen, as the flavour might else be tainted, but by no means slate or moss the whole surface of the bed, lest you encourage the red spider. Think on the reflection of the sun upon the slates or tiles, in hot weather particularly, and of his additional force in shining through glass. It is more consonant to the nature of the plants that they be trained on the earth. By mossing the surface, the indolent may find a pretext, as it no doubt, in some measure, lessens the labour of watering. But it is wrong to do so, in so far as it harbours and encourages the breeding of various insects, and as the fruit approaches to maturity, taints it with an unpleasant effluvia."
Time of maturation.—“The interval between the setting of the fruit and perfect maturity is generally from 30 to 40 days; but the plants in the same bed, and the vines on the same plant, often show some difference in the time of reaching maturity.”—Abercrombie.

Cutting the fruit.—“Ripe melons are distinguished by their full size; sometimes by turning yellowish, more constantly by imparting an agreeable odour, often by the base of the footstalk, close to the fruit, cracking in a little circle. On these indications, the fruit should be cut before too mellow or dead ripe, that it may eat with a lively sharp flavour. The morning is the time for cutting.”—Melons, Nicol observes, “if allowed to remain on the plant till they be of a deep yellow colour (which many do) lose much of their flavour. They should, therefore, be cut as soon as they begin to change to a greenish yellow, or rather, as soon as they begin to smell ripe. They may lie in the frame for a day or two, if not immediately wanted, where they will acquire sufficient colour. But if they are let remain many days in the frame, they will become as insipid as if they had been left too long on the plant.”

Saving seed.—“The ordinary mode is to request the seeds of particularly fine fruits, of approved sorts, to be returned from table. The best way, however, is to pick some of the best ripe fruit, take out the seed, clean it from the pulp, and let it be well dried and hardened, and then put it up in paper.”—Abercrombie. Nicol says, “wash it very clean, skimming off the light seeds, as those only that sink in water will grow.”—Kal. p. 396. Great care must be taken that the sorts, from which seeds are saved, are genuine and distinct. When different sorts are planted in the same frame, this cannot be the case.

Second crop from the same plants.—“When the fruit of the first crop is off, a second crop may be obtained from the stools, which often proves more productive than the first. If the first crop is taken before the middle of June, the second will come in at a very good time. For this purpose, as soon as the fruit is cut, prune the plant, shorten the vigorous healthy runners at a promising joint. At the same time take off all decayed leaves, stir the surface of the mould, and renew it partially by 3 inches’ depth of fresh compost. Water the plant copiously, shutting down the glasses for the night. Shade in the middle of hot days, and give but little air until the plants have made new radicles and shoots. Afterwards repeat the course of culture above described, from the stage when the first runners are sent out till the fruit is cut.”—Nicol says, “When all the fruit of the first crop are cut, suppose in 3 or 4 weeks, the plants may be pruned for the production of a second crop, equal and perhaps superior to the first. They should be cut pretty much in, in order to cause them to push plenty of new vines, which will be very fruitful, observing always to cut at a joint of some promise, and to thin out all decayed or unhealthy vines, dead leaves, &c. Observe also to cut an inch or two above the joint you expect to push, and then to bruise the end of the stem so lopped with the thumb and finger, which will, in a great measure, prevent it from bleeding. The plants should be shaded from the mid-day sun for a week or ten days, exposing them to his full rays by degrees. Now, also, let the mould in the frame be well watered, in order to put the roots in a state of active vegetation; point over the surface with a small stick, or little wedge, and cover the whole with about 2 inches of fresh mould. This will greatly encourage the plants, and cause them to make new fibres near the surface. At this period air need not be admitted very freely, especially while the glasses are covered, but rather as it were endeavour to force the plants into new leaves. After they begin to shoot, water, admit air, prune, train, and otherwise manage the plants as before directed. If the season be fine, they may yield you a third crop by a repetition of the above rules, coming in in September, which might be very gratifying. I once had 52 full-sized fruit produced in a 3-light frame, a second crop, and two dozen on a third off the same plants, the early golden cantaloupe. Of the first crop 26 fruit, two were cut the 10th of May. Thus, a 3-light box produced, in one season, 102 full matured melons.”

M’Phail says “if you intend to have melons as long as there is a sufficiency of sun to ripen them tolerably well, you had best put linings of warm dung to some of your beds. These, if applied in time and kept on, will cast fresh heat into the beds, and, with other necessary assistance, the plants will grow as long as you want them.”

Plan of obtaining a second crop of melons.—“When the first crop of fruit is nearly gathered, cuttings are taken from the extremities of the shoots which show the most fruit; these are cut off close under the second advanced joint, or about the fifth leaf from the top; the two largest leaves at the bottom of the cutting are taken off, and thus prepared, are inserted in 24-sized pots, two in each pot, in light rich soil, gently shaken down. After being watered, the pots are placed in a 1-light frame, on a hot-bed previously prepared, and plunged in the moderately dry soil, with which it is covered. The frame is kept close and shaded for a few days, and in a week the cuttings will have struck root. The old melon-plants, with the soil in which they grew, are now all cleared out of the frames, fresh soil to the depth of 12 inches put in, and the beds well lined with fresh dung. In 10 days from the time of inserting the cuttings they will be ready to plant out, which is done in the usual way. When the plants have pushed about 14 inches, the end of each shoot is pinched off, to cause them to produce fresh runners, and the fruit which showed on the cuttings will swell rapidly, and in 3 weeks after replanting the beds, abundance of fine fruit may be expected. This way of getting a second crop is far more certain than either pruning back the old plants, or planting seedlings; because cuttings grow less luxuriantly, are less liable to casualties, and are much more prolific.”—Harrison ex Loud. gard. mag. 2. p. 414.

Cultivation of the Persian varieties of the melon.—T. A. Knight (Hort. reg. no. 6. p. 263.) erected a small forcing-house for the exclusive culture of this fruit, and grew them by means of fire heat. This house consists of a back wall, nearly nine feet high, and a front wall nearly 6 feet, inclosing a horizontal space 9 feet wide and 30 feet long. The fire-place is at the east end and very near the front wall; and the flue passes to the other end of the house, within 4 inches of the front wall, and returns back again, leaving a space of 8 inches only between the advancing and returning course of it, and the smoke escapes at the north-east corner of the building. The front flue is composed of bricks laid flat, in order to give a temperate permanent heat, and the returning one with them standing on their edges, the usual way. The space between the flues is filled with fragments of burnt bricks, which absorb much water, and generally give out moisture to the air of the house. Air is admitted through apertures in the front wall, which are 4 inches wide and nearly 3 in height, and which are situated level with the top of the flues, and are 18 inches distant from each other. The air escapes through similar apertures near the top of the back wall. These are left open, or partially or wholly closed, as circumstances require. Thirty-two pots are placed upon the flues, each being 16 inches wide and 14 inches deep; but they are raised by a piece of stone or brick to prevent their coming in actual contact with the flues. In each of these pots one melon-plant is put, and afterwards trained upon a trellis, placed about 14 inches distant from the glass, and each plant is permitted to bear but one melon only. The height from the ground at which the trellis is placed, is such as can be con-
veniently walked under, to discover the appearance of red spiders or other noxious insects; and by this method two, and even three crops may be obtained in one season. Being so liable to burst, Mr. Knight raised the points of the fruit higher than the stems, and not one failed to ripen in a perfect state; they were found to ripen very well hanging perpendicularly, but the Isfahan grew very deformed.

**Late crop on old hot-beds.**—To ripen melons, not earlier than the month of August, Mr. Philp "generally made beds of dung which had first been used for linings to the early cucumber and melon-beds. For this purpose, this kind of dung is better than new dung, because it does not heat violently, and for a considerable time keeps its heat. Leaves of trees make very good melon-beds, but they do not produce heat enough alone for linings; but of whatever materials melon-beds be made, the air in the frames among the plants should be kept sweet and strong, otherwise the plants will not grow freely. It may be known whether the air be sweet or whether it be not, by putting the head in under the lights and smelling it. But it frequently happens to be difficult to bring dung-beds into a requisite state of kindliness for these delicate plants, for if the dung be by any means get and retain too much water, before its noxious vapours pass off by evaporation, it will stagnate and become sour, and until these pernicious qualities be removed, which requires time and patience, the plants will not grow kindly; and besides this, although corrupted, stinking air hinders the growth of plants of the melon kind, it greatly promotes the health and forwards the breeding of different kinds of insects, which feed upon and otherwise hurt fruits and plants, and esculent vegetables of various kinds."

A method of growing the melon, adopted by Mr. Lovell, (Gard. mag. 7. p. 461.) varies in one or two very essential points from any that he has seen practised; first in well bedding and firmly rooting the plants to support a good crop of fruit; second in early setting and preserving the first fruit, and forcing the whole of the plants luxuriantly through the whole of the period necessary for their maturity. To effect this he prepares his bed with dung well watered and fermented, or tan, not wishing such a strong heat as for cucumbers. He sows his seeds in pots, in which the plants remain until they are turned into the hills, leaving only 3 plants in each pot. These he places in the dung, in order to start them as soon as the bed is made up, unless there should be another bed in use at the same time. As soon as the second rough leaf appears, he puts a hill of good melon soil under each light, composed of good loam, and turf, adding a sixth part of good rotten dung, well mixed with the spade, but not sifted. This he waters if dry, and treads in the hills firmly, making a hole in the centre, and turning out a pot of plants with the ball entire into each hole. Should the weather be very warm, he waters them overhead abundantly, and in the space of a fortnight they will have grown to four or five joints each; he then stops them down to three joints. By this time the heat of the bed will have become reduced to such a temperature as to allow of moulding up the plants, well heading in and watering as you proceed. As the plants will at this time be strongly rooted, and in vigorous growth, in the course of three days they will have pushed a strong shoot from each of the three eyes in a horizontal direction, and they will seldom fail of showing fruit at the first joint; you may rely at least on two out of three of these fruits setting. Before the fruit comes to blossom, the bed must be covered 1½ inch thick with dry sand, but mould will do, and do not water the bed any more for at least 3 weeks. This prevents the newly formed fruit from turning yellow and damping off. All shoots that appear, except the three above mentioned, must be removed. As these shoots will show fruit at the first or second joint, if such fruit be set and taken care of, it will be three parts grown before the vines will have reached the outside of the bed, arriving at perfection in nearly half the time it would have done if the vines had been left in confusion. Particular care must be taken in pruning, never to stop the three shoots that bear the fruit, nor yet the lateral ones produced from the same joint as the fruit. These lateral shoots will show fruit at the first joint, which fruit must be preserved until the other is swelling, then take off this lateral shoot, but do not stop the vine. But should any accident happen to the other fruit, the shoot bearing it must be taken off, and the lateral shoot treated as a main one, when the fruit on it will swell accordingly; and all the laterals that spring from the main shoot must be stopped, leaving one joint and leaf only.

On the cultivation of the melon.—J. Holland (Gard. mag. 7. p. 575.) plants off his seedlings singly in 60-sized pots, and when sufficiently advanced in growth they are stopped so near the seed-leaf, as only to admit of them throwing out 2 lateral shoots, and when these principal leaders extend to 2 or 3 joints, they are finally planted out into frames or pits, having the bottom heat arranged according to the advanced state of the spring months. Five melons were produced by a plant set in the centre of a two-light frame in the beginning of May, upon an old bed that had been previously employed for raising radishes. A dung lining was added to the back and one end of the frame, which was all the artificial heat the plant received, one vine was trained to the back and the other to the front of the frame. His practice is never to stop the vines until they have extended as far as their confinement will permit, and the laterals from the two leading vines, as they advance in growth, are trained to the right and left over the bed with neat pegs, and every fruit blossom, as it expands, is carefully impregnated and placed upon a tile under the shade of a neighbouring leaf. In a day or two, or as soon as he thinks the fruit will set, he stops the vine at the first or second joint beyond it. In this way he proceeds, in setting all the fruit he can, until the surface of the bed is covered with foliage, which is never deranged more than can be avoided. While the fruit is setting, he gives air very freely, sometimes he draws the lights quite off for a few hours on sunny days, and he also, by applying or withholding heat or water, endeavours to keep them in a state between luxuriance and desiccation, for in either extreme they will not set well. Having advanced thus far, he commences swelling them off. He begins this with pinching off all the ends of the lateral shoots that have not already been stopped to assist the young fruit. He now gives no more air than will prevent the sun from scorching their leaves. He looks over them every morning, and takes off all the blossoms as they appear, and stops every young shoot back to one joint above that of the vine which produces it. He watches over them every afternoon in fine weather, and before the sun has quite left the frame, he syringes or waters them all over, leaves, fruit, and all, and shuts down the glasses for the night. He always prefers performing this while the departing rays of the sun have sufficient strength to raise a sweet vaporous heat of about 90°, which serves them to feast upon long after the sun has disappeared. A few days of such treatment will determine which fruit will take the lead in swelling off, out of which he selects 2 or 3 to each plant, according to the sort, and all the rest he cuts away. As the fruit advances in growth, it is necessary at intervals to turn them a little on the tiles, to prevent them from growing flat, and discoloring on one side, and also from rottin. When they have attained as large a size as he thinks the sort will admit, he leaves off watering, and again gives all the air he can, by taking the lights entirely off when the weather is favorable; and if the season is not too far advanced, he leaves them to ripen without any other assist-
ance. For an early crop of melons, he grows the small early cantaloup, 1 plant in a light when the frame is narrow, and 2 if wide, with 2 or 3 fruit on each plant, which in general weigh from 2 to 3 pounds each. He succeeds these with the scarlet and green-flesh, planted and trained as above, the produce of which is from 2 to 6 pounds. His principal crop is, however, from the black rock, which he has grown of all sizes up to 13½ lbs. weight; the plants are much more Hardy than many other sorts, it is a good bearer, the fruit handsome, and the flavor excellent. The sort which he grew so large was originally from France, and in its primeval state was a rock; but it has lately been strongly impregnated with the scarlet flesh, which fruit it now resembles in all its characters, except in growing much larger. The largest melon weighed 24½ lbs. The above is Mr. Holland's general practice of cultivating the melon, which practice he says he will still continue to adhere to unless fully convinced he can adopt a better.

Insects and diseases.—To prevent melon plants from being infested with insects or injured by diseases of any kind, no better method can be adopted than to keep the plants constantly in a healthy, vigorous, growing state; for this purpose, M'Pheil observes, "they must be constantly attended to, giving them plenty of heat and water. In warm weather in the spring and the summer, they should be watered occasionally all over the fruit and leaves, till the earth in which they grow be thoroughly moistened, and a stronger heat than usual be kept in the frames about the plants for a few hours; also the lights should be shut down every afternoon, with a good strong heat among the plants. If there be sufficient moisture in the earth the greatest sun heat in the afternoon will not hurt the plants, but it might scorch the sides of the large fruit, exposed to the sun-beams operating upon the glass, which should be guarded against. The frames and lights should be kept clean and painted over once every year. Melon plants are subject to be infested and hurt by the mildew and by the canker. These diseases come upon them because they are not in a good climate, they have not a sufficient heat, or the dung and earth of the bed is in a stagnated state. Melon plants are liable to be greatly injured by an insect called the red spider, which increases surprisingly in hot dry weather. As I said before, nothing will prevent plants from the inroads of disease and insects but heat, sweet air, and a sufficiency of water, which softens the atmosphere, and makes it healthy for vegetables as well as for animals. And nothing will eradicate disease and insects from melon plants but good management, strong heat, and plenty of water given all over them. Diseased plants, or plants much infested with insects, cannot produce good healthy fruit. The mildew is a most pernicious disease to all sorts of plants. On melons it generally makes its first appearance on the oldest leaves and on the extremities of the young shoots. The cause of it, I apprehend, is unhealthy nourishment comprehended in the elements, or their not harmonising in the promotion of the growth of the plant; for by practitioners it may be observed, that when a dung hot-bed gets into a stagnated sour state, the plants do not grow kindly, the air in the frames is saturated with unhealthy particles, and so also must be the juices drawn into the plants by their roots. These must breed diseases, if preventive means be not applied. It cannot be reasonably supposed that plants of a delicate nature will continue in a healthy state growing upon a heap of stinking dung, and in confined air. When melon plants have become diseased, or much infested with the red spider, they should either be destroyed, or effectual means used to cure them. To destroy the plants is easy; to cure them let the following methods be put in practice: get plenty of horse-dung thrown up in a large heap, turn it over once or twice, shaking and mixing it well, and let it lie till its rankness be somewhat evaporated, and if there be linings at the beds, take them entirely away, examine the dung of the beds, and if it be wet and has a bad smell, take a sharp-pointed stake, and make holes all round in the sides of the beds unto their centre, in such a slanting way that the water may easily run out of them; then make a strong lining of the prepared dung all round the beds, and by occasional augmentations, keep up the linings nearly to a level with the surface of the earth in which the plants grow. As soon as the linings have cast a strong heat into the beds, scatter some flour of sulphur all over the plants, and keep as strong a heat in the frames as the plants can bear; a heat of 120° will not destroy them, if the steam of the linings be prevented from getting in among the plants. Water the plants all over their leaves about once a week, with clean water 100° warm, and if the sun shine keep the lights close shut down all day, and cover them up in the evenings, leaving a little air all night at each light, to prevent a stagnation of air among the plants. Continue this process till the mildew and the insects disappear, and the plants appear to grow freely, and afterwards manage them in the usual way, taking care to keep up a good strong heat in the linings. This method sets the old stagnated bed in a state of fermentation, which makes the moisture run out of it, and dries it so, that water given to the plants has free liberty to pass off. If the linings do not heat the air in the frames sufficiently, let some of the earth in the inside all round the sides of the boards be removed, to let the heat from the linings rise freely in the frame."

Culture of melons in a dung-pit.—"A glazed pit to receive either stable-dung, leaves, or tanners' bark, is calculated to ripen superior fine fruit. The well of the pit may be formed either by a nine-inch wall, or by strong planking, a yard in depth, from 6-8 feet wide, and in length from 10-20 feet or more as required. A low glass-case is to be fitted to it, adapted to the growth of the melon. Having raised the plants in a small seed-bed, as for the frame crop, the plants out into the pit in the usual manner. Give the proper subsequent culture, and when the strength of the fermenting mass begins to decline, add linings outside the pit, if inclosed by boards, but if inclosed by a nine-inch wall, cut away as much of the dung and earth within, and throw it out, as will admit a lining of well-tempered dung."

—Abercrombie.

Culture of melons in a flued-pit.—"One such as that proper for the nursing manury is here understood; and the plants being raised in the usual way, and the bed, whether filled with dung, tan, or leaves, or a mixture of these, being moulded, plant about the end of July. Nicol prefers for such late crops "the early golden cantaloup, the orange cantaloup, and the netted cantaloup, planting a part of the pit with each." A very mild bottom heat is sufficient for the purpose here in view; and if the pit has been occupied in forcing asparagus, French-beans, or straw-berries, on a bark, or a bark and dung, or on a bark and leaf heat, it will require no other preparation than to be stirred up and have a little fresh materials added, keeping the fresh bark, dung, or leaves well down, and finishing the bed with some of the smallest and best reduced. When it has settled a few days, let it be moulded all over to the thickness of 12 or 15 inches; previously laying on a little more of the above small materials, in order to keep the plants well up to the glass, as the bed will fall considerably in the settling. It should be formed, and the mould should be laid on in a sloping manner from back to front, so as in some measure to correspond with the glasses. All being ready for the plants, they may either be planted in a row, in the middle of the pit, at 2 feet apart, or may be planted in 4 rows at 4 feet apart; or, if they have been planted in nursing, 3 in a pot; plant in the centre of each light, as directed for the common hot-bed, in March. Let them have a little water
CUCURBITACE.E. IV. Cucums.

and be shaded from the sun for a few days, exposing them to his rays by degrees. The future management of the plants differ in nothing from that of melons in a hot-bed till September, when it will be proper to apply fire heat."—"About the beginning of September it will be proper to apply fire heat, in order to further the progress of late fruit, and to dry off damps. Let the fires be made very moderate at first, however, and increase their strength as the season becomes more cold and wet. Keep the mercury up to 70° in the night, and in the day by the addition of air keep it down to about 80° or 75°. Very little water will now suffice for the plants, as their roots will be fully established, and be spread over the whole bed; the heat of which will also now have subsided. They should only, therefore, have a little water once in 8 or 10 days, and as the fruit begin to ripen off, entirely withhold it. Keep the plants moderately thin of vines and foliage; be careful to pick off all dampened leaves as they appear; and fully expose the fruit to the sun as it ripens, in the manner directed for melons in the hot-bed. In this manner I have often had melons in October and November fully swelled, and in good, but not of course in high perfection, for want of sun to give them flavour. Any who have a pit of this kind, however, for the forcing of early vegetables, strawberries, flowers, &c. cannot, perhaps, occupy it to a better purpose in the latter part of the season, as the trouble is but little, and the expense not worth mentioning."

Culture of melons in M'Phail's pit.—The inventor of this pit says, "For the purpose of raising melons early, for many years I cultivated them on a brick bed, on the same construction as that which I invented for rearing early cucumbers, excepting only that through the pit of each 3-light box I carried no cross flues. When this bed was first set to work, I had the pits filled level with the surface of the flues, with well fermented dung or with the dung of old linings from the cucumber-bed. In each 3-light division I made the pit about 3 feet 6 inches wide and 10 feet long, and 3 feet deep below the surface of the flues. On the surface of the dung in the pits, I had laid about 10 inches thick of good earth, in a ridge of about 20 inches wide, from one end of the pit to the other. When this was done, I made a lining round the bed, and as soon as the earth became warm, I set the plants into the ridge of the earth, and gave them a little water, and kept a strong heat in the frames, and filled up the pit gradually as the roots and plants extended themselves."—"The dung or leaves of trees in the pit require not to be changed every year, neither need the earth for the plants be removed entirely every season, for by experience I found it to do very well by digging, and mixing with it some fresh earth and manure in winter, and exposing it to the rains, the frost, and the snow."—"In forcing melons early, the surface of the cross flues, as well as the surrounding and outside ones, should be kept bare of mould till the days of the spring get long, which will let the heat of the linings arise freely through the covers of the flues to warm the air among the plants. After the cross flues are covered with earth, those which surround each frame may be left uncovered till the month of May or June."—Gard. rem. p. 64.

The culture in the brick bed is, in other respects, the same as that already given for melons in frames, and cucumbers in brick beds. See the monthly table of temperature under the cucumber.

Culture under hand-glasses.—"A successive or late crop, to fruit in August and September, may be raised on hot-bed ridges under hand-glasses. Sow in a hot-bed from the middle of March to the middle of April. When the plants have been up a few days, while in the seed-leaves, prick some into small pots, two plants in each; water and plunge them into a hot-bed, managing as directed for the young frame plants, till the rough leaves are from 2-4 inches long, and the plants ready to shoot into runners. From the middle of March to the third week of May, when the plants are a month or five weeks old, they will be fit to ridge out under hand-glasses. With well-prepared stable-dung, or, with a mixture of fermented tree-leaves, build the hot-bed four feet wide and 2½ feet thick, the length according to the number of glasses intended, alloting the space of 4 feet to each. In a week or ten days, or when the dung and leaves are brought to a sweet or well-tempered heat, mould the bed 10 or 12 inches thick, then place the glasses along the middle, and keep them close till the bed has warmed the earth. The same, or next day, insert the plants; turn them out from the pots with the ball of earth entire, and alloting plants for each glass, insert the ball into the earth, clean down over the top, closing the mould about the stems. Give a little water and place the glasses over close. From about nine in the morning till three in the afternoon, of the first two or three days, shade the plants till they have taken root, when admit the sun more freely, yet only by degrees from day to day, till they can bear it fully without flagging much. Give air daily, in temperate weather, by tilting the edge of the glasses on the south side, an inch or two; but in the present stage of the plants shut close at night. Cover with mats till morning, constantly keeping the glasses over. Give occasional moderate waterings with aired water. Cover in the day time with mats in bad weather, or heavy or cold rains; and continue the night covering until confirmed summer in July. Meanwhile attend to the heat of the bed; if this be declined, so that the minimum temperature be not 65° at night, with the aid of matting, line the sides with hot dung, covered with a layer of mould. The revived heat from the linings will forward the plants in fruiting, while the earth at top will enlarge the surface for the runners, and the bed for the roots. When the runners have extended considerably and filled the glasses, they must be trained out. Accordingly, at the beginning of June, in favourable settled warm weather, train out the runners, cutting away dwindling and useless crowding shoots; then the glasses must be raised all round, 2 or 3 inches, upon props to remain day and night. Cover with mats in cold nights and bad weather, but first arch the bed over with rods or hoop-bands to support the mats. Apply moderate waterings as necessary in the morning or afternoon. Oiled paper frames, formed either archwise, or with 2 sloping sides, about 2 feet or 2½ feet high, and of the width of the bed, are very serviceable in this stage. Some persons use them from the first, under a deficiency of hand-glasses. But the proper time for having recourse to them, is when the plants have been forwarded in hand-glasses till the runners require training out beyond the limits of the glasses, some time in June; then removing the glasses, substitute the oiled frames, as these paper screens will entirely afford protection from heavy rains or tempests, as well as from nocturnal cold, and also screen the plants from the excessive heat of the sun, while, being pellucid, they admit its influence of light and warmth effectually. Give proper admission of free air below, and occasional watering. With respect, however, to the crop for which no oiled paper frames have been provided, continue the hand-glasses constantly on the bed, over the main head and stem of the plants throughout the season, to defend those capital parts from casual injuries by the weather. Throughout June, and thence to the decline of summer, be careful, if much rain or other unfavourable weather, or cold nights occur, to shelter the beds occasionally, with an awning of mats or canvass, particularly when the plants are in blossom. Likewise turn in some of the best full set exterior fruit under the glasses, or some spare glasses might be put over the outside melons, to forward them without check to maturity. Some will be ready to cut in July, others in August, the more general time, and in September; they being generally, after setting, from 30-40 days..."
in ripening. The crop coming in at the decline of summer will not ripen well, unless guarded from cold at nights, and assisted by linings. The fruit that do not ripen may be used for mangoes.

"Wide ridge, or the fruiting-bed, may be made 6, 7, or 8 feet wide, for the plants to have an ample surface for their extending runners, defended either with a regular frame, and glasses of proportionate dimensions, or a case formed of an inch and a half boarding, ranged connectedly both sides of the bed, without any external cross divisions, other than top cross bars, to stay the sides and support the glasses."

Method of growing crops of melons in the open borders.—The mode of growing cucumbers on ridges of shallow beds of half-spent dung in the open air, is well known to gardeners; and in warm situations melons may be grown in the same manner. The sorts grown by Mr. Greenshields were the black rocks, green-fleshed, netted, and early cantaloup. The seeds of the first crop were sown about the middle of March, in pots in a cucumber-frame, and the bed or ridge was prepared in the first or second week in May, 4 feet wide, and 1 foot higher at the back or north side than in front. Hand-glasses, with 2 or 3 plants in each, are placed, 4 feet apart, along the centre of the bed. Very little air is given till the plants have filled the glasses, but when these appear to get crowded with vines, the glasses are raised up, and the plants allowed to grow up in the manner of ridged cucumbers. If the vines are very thick, a few of the weakest may be pinched off, and the top of each leading shoot or vine removed. No more pruning will be necessary for the season. Setting the fruit at this season of the year is quite necessary. To have handsome fruit, not more than one or two should be left on the plant. They will begin to ripen about the first week in August, and continue to be produced through that month and part of September. To prolong the season, seeds may be sown three weeks later, planted out like the first crop, and when there is appearance of frosty nights, a cucumber-frame and sashes may be placed over them. By this means tolerably good melons may be had till the end of October.—Greenshields, ex Loud. gard. mag. 3. p. 182.

There is another method of cultivating melons in the open air; that is, to raise a bed of old tan, and tramp it well and firmly down, placing some stakes and boards behind to keep up the ten, so that the bed may slope in front; 6 inches of mould should be placed on the tan, and themelon plants planted into it. Grass or leaves may be placed at the back of the bed to keep up the heat. The plants should be reared on a hot-bed.


2 C. DELICIOUS (Roth. cat. 3. p. 307.) angles of leaves blunt; fruit roundish-ovate, pubescent, with white, very fragrant flesh, and a thin rind. O. F. Native of the East Indies, but now cultivated in Spain. Perhaps only a variety of the common melon.


3 C. SATIVUS (Lin. spec. 1437.) stems rough, bearing tendrils; leaves cordate, obscurely 5-lobed, petiolate, terminal lobe the largest; flowers on short peduncles, large, usually by threes; male flowers having the tube of the calyx tubularly-campanulate, and with a spreading deflexed limb; fruit long, somewhat triquetrous, smooth or prickly, and usually shining, having the carpels distinctly separable in the inside. O. F. Native of Tartary and the East Indies.—Blackw. herb. t. 4.—Lob. strp. 363. f. 1. The cucumber is called Kettimou and Timou by the Hindoos. Flowers yellow, as in the rest of the species.

The cucumber is called concombre in French; gurke in German; and Citriulo in Italian; it is a tender annual, a native of the East Indies, and was introduced in 1573. It is a trailing and climbing plant, with large, roundish, rough leaves, furnished with tendrils, and if sown in the open air in May, produces flowers from July to August. The cucumber is of nearly as great antiquity as the vine, for Moses, the earliest Jewish author, mentions it as abounding in Egypt when the children of Israel were there, above 3000 years ago. (Numbers, chap. ii.) In England it is cultivated generally and extensively in forcing frames, and in the open air, and especially near large cities and towns. "Not only gentlemen," as M'Phail observes, "but almost every tradesman who has a garden and dung, have their cucumber-frame." In Hertfordshire, whole fields are annually seen covered with cucumbers, without the aid of dung or glass, and the produce of which is sent to the metropolis for pickling. In March, cucumbers fetch in the London market a guinea a dozen; in August and September a penny a dozen. The village of Sandy, in Bedfordshire, has been known to furnish 10,000 bushels of pickling cucumbers in one week.

Use.—The green fruit is used as salad; it is also salted when half grown; and preserved in vinegar when young and small. In Germany and Poland, barrels of half, and also full grown cucumbers, are preserved from one year to another by immersion in deep wells, where the uniform temperature and exclusion of air seem to be the preserving agents.

Varieties.—The principal of these are as follow:—

List of cucumbers.

1 Early long prickly.—This fruit is from 5-7 inches long, of a green colour, with few prickles. The plant is a good bearer, and upon the whole this is the best cucumber for the general summer crop, the flesh being very crisp and pleasant.

2 Largest green prickly.—From 7-10 inches long; it has a dark green skin, closely set with small prickles. This is a hardy sort, but does not come early.

3 Early short prickly.—Not more than 4 inches long; the skin green and rather smooth, but with a few small black prickles. This is one of the hardiest and earliest sorts, and is often preferred for the first crop.

4 Dutch or white short prickly.—Though not much cultivated, is recommended by some as preferable even to the early long prickly; it has fewer seeds, is evidently different in taste from most other cucumbers, but of agreeable flavour.

5 Cluster cucumber.—A very early sort; the flowers appear in clusters of 3 or 4 together; the fruit is seldom more than 5 inches long; it is at first of a fine green colour, but becomes yellowish as it ripens. The stems of this variety are much inclined to climb by means of their tendrils upon sticks; the leaves are small, and the plant altogether occupies but little room.

6 Smooth green Roman.—An early sort; the fruit becomes large and long, and is quite smooth; the plants grow very strong, and require a good deal of room.

7 White Turkey.—The stalks and leaves are larger than in the other varieties; the fruit also is very long, sometimes from 10-15, or even 20 inches; it is quite straight, and has a smooth skin, destitute of prickles; it is produced sparingly, and late in the season.

8 Long green Turkey.—Sometimes sown for the late crop. Late cucumbers, however, are much less cultivated than the early varieties, most gardeners being of opinion, that those kinds which are best for the early crop, are also best for the late.

9 Nipaul.—Fruit very large, usually weighs upwards of 12 lbs., measures in girth 24 inches, and in length 17 inches; flavour pleasant, and esteemed for standing. It is a native of Nipaul, from whence it was introduced to the botanical garden at Calcutta; but it is not likely that it ever will be much cultivated in this country.

Culture.—The culture of the cucumber, as a table esculent,
is chiefly carried on by artificial heat, and is therefore treated of under that head. For pickling it is chiefly cultivated in the open ground, by what is termed drilling. To have a crop in the natural ground, the seed is sown in warm compartments of rich earth, towards the end of May or beginning of June, when the weather is settled, warm and dry. The plants should mostly remain where sown, to produce late fruit towards the end of July, or more generally in August and September; small for pickling, and in larger growth for ordinary consumption. Sow a portion in a warm border, and the main crop in an open compartment. Dig the ground neatly even. Trace lines with intervals of 5 or 6 feet; and in the lines mark stations 3½ feet distant, then with a trawl at each of these spots, form shallow circular saucer-form cavities in the surface, 10 or 12 inches wide and about an inch deep in the middle. Sow in the middle of each cavity 8 or 10 seeds, half an inch deep. When the plants are come up, and begin to put forth the first leaves in the centre, thin them to 3 or 4 of the strongest in each hole. Earth these up a little between and close round the stems, pressing them a little asunder, and give them some water to settle the earth below and above. In their advancing growth train out the leading runners, supplying them with requisite waterings in dry weather 2 or 3 times a-week, and sometimes every day in very dry hot weather, in July, August, or September. At this season water early in the morning and late in the afternoon towards evening.

**Gathering.**—"The crop comes in sometimes towards the end of July, but more generally not before August in full production; continuing till about the middle or end of September, when the plants decline. Be careful to gather the fruit in a fine state both for pickling and other purposes. They must be quite young for pickling, not exceeding 2 or 3 inches in length."—Abercrombie.

**Forcing cucumbers.**—To produce cucumbers at an early season, is an object of emulation with every gardener; and there is scarcely any person who has not a cucumber-bed in his garden. We shall lay down a systematic view of the practices of the most approved gardeners in the culture of this plant, as has been our usual custom with other garden plants. Cucumbers are forced in hot-beds, pits, and hot-houses, and the heat of fire, and warm water, and steam, and dung, have been applied to their culture; but dung, as the author last quoted observes, is the only thing yet found out, by the heat of which the cucumber may be advantageously cultivated.

**Soil.**—Cucumbers, like every other plant, will grow in any soil, though not with the same degree of vigour, provided they be supplied with a sufficiency of heat, light, water, and air. For early forcing, Abercrombie recommends a mould or compost of the following materials: "One third of rich top-split earth, from an upland pasture, one-third of vegetable mould, and one-sixth of well decomposed horse-dung, with a small quantity of sand." M'Phail used vegetable mould made from a mixture (accidental) of the leaves of elm, lime, beech, sycamore, horse and sweet chestnut, spruce, and Scotch fir, walnut, laurel oak, evergreen oak, ash, &c. and among them withered grass and weeds of various kinds. "This vegetable mould," he says, "without a mixture of any thing besides, is what I used for growing cucumbers in, and by experience I found it preferable to any other moulds, earths, or composts whatever, either in my new method of a brick bed, or in the old method of a bed made of horse-dung." Nicol says, "soil thus composed will produce cucumbers in great abundance: three-fourths light rich black earth from a pasture, an eighth part vegetable mould of decayed tree-leaves, and an eighth part rotten cow-dung." Kal. p. 393. W. T. Aiton gives the following as the compost used in Kew Gardens: "Of light loam a few months from the common, one-third part, the best rotten dung one-third part, leaf-mould and heath-earths of equal parts, making one-third part. The whole well mixed for use." G. Mills states that the soil he uses "is half bog or black mould, got from a dry heathy common, and half leaf-mould: after lying 12 months in a heap, the compost is fit for use."

**Time of beginning to force.**—Abercrombie says, "Managers who have to provide against demands for early cucumbers, must raise the seedlings from 10-12 weeks before the fruit will be required, according to the length of the days in the interval. In proportion as the entire course embraces a greater part of the mid-winter, the liability of failure from obstacles in the weather will be greater. The last fortnight in January, or first week in February, is a good time for beginning to force the earliest crop. In the subsequent months, both main and secondary crops may be started as required, and will come forward more freely. To have a constant succession, seedlings should be raised twice a month. As the course of forcing more coincides with the natural growing season, the length of it will be reduced to 8, 7, or 6 weeks." M'Phail says, "those who are desirous of having cucumbers early, had best sow seeds about the 20th of October; they may be sown at any time of the year, but the spring and autumn are the best seasons. Cucumber plants may be made to bear fruit plentifully from about the middle of March till the middle of September; but from the middle of September till the middle of March their produce will be but scanty. Cucumber-plants, raised from seed in October, will begin to produce fruit in February or March, and will continue to bear till the following month of October, provided they be kept in frames and get plenty of heat and water." Nicol recommends the middle of January. He says "some begin sooner, but it is striving hard against the stream to little purpose. If the dune be prepared and the bed be got ready, so as to sow about the first of February, the success will often be greater than by sowing a month earlier, the growth of the plants being frequently checked by bad weather, and sometimes they are entirely lost." Aiton, in the paper above quoted, sowed on the 12th and 20th of August, with a view to cultivate in stoves, a regular supply of this vegetable being annually required for the royal tables. G. Mills sows on the first of October.

**Sorts.**—Abercrombie recommends the short prickly for very early fruit, and the long prickly kinds for the chief early and main summer crops. Nicol says every gardener has his favourite sort of cucumber, and it is no easy matter to advise. He names as early sorts generally known, the early short prickly as the earliest; the early smooth green, a long fruit, the long green prickly, and the white prickly, a white fruit.

**Choice of seed.**—"It is advisable," Abercrombie observes, "to have that at least from 2-4 years old, in preference to newer seed, which is more apt to run luxuriantly in vine, and the plants from it do not show fruit so soon or so abundantly as those from seed of greater age. But when seed has been kept more than 4 years, it is sometimes found to be too much weakened." **Forming the seed-bed.**—"A one-light frame," Abercrombie says, "will be large enough for ordinary purposes. Choose a dry sheltered part of the melon-ground, and form a bed for a 1-light frame. When high winds are suffered to blow against a cucumber-bed, they have a very powerful effect on it, for in that case the heat will not only be greatly abated, but also forced and driven into the corners of the frames, and, consequently, some parts thereof are rendered too cold, whilst other parts are made too hot, and of course the plants are all equally endangered, retarded in their growth, and perhaps some, if not all of them, totally destroyed. Therefore, when a cucumber-bed is about to be built, the first object of consideration should be, to have it, as well as possible, sheltered from the high winds and
boisterous, stormy weather." Having put on the frame and waited till the bed is fit for moulding, lay in five or six inches' depth of the proper earth or compost. M'Phail "makes up a bed of good dung, four feet high, for a 1-light box." Nicol "builds a bed of dung, carefully fermented, to the height of 5 feet at back, and 4 at front, keeping it a foot larger all round than a 1-light frame, or about five or six feet by three or three and a half. He then covers with turf, and on that lays fine sand, as free of earth as possible, to the depth of about six inches, laying in a sloping manner, corresponding with the glass and within 6 inches of it; over which lay an inch or two of dry light earth." Aiton and Mills also prepare a bed for a 1-light box; the latter forms it on a stratum of wood 1 foot high for drainage, and 8 inches higher in the middle than at the sides, as the sides are liable, from the weight of the frame, to settle faster than in the middle, which causes the piles of earth to crack; by which in fruiting-beds more especially the roots of the plants are greatly injured.

Sowing.—Abercrombie sows some seeds in the layer of the earth, which he spreads over the bed, putting them in half an inch deep. He also sows some seed in 2, 3, or more small pots of the same kind of earth, which may be plunged a little into that of the pot. M'Phail sows in a pot filled with rich earth, covers about 2 inches thick, and sets the pots on the surface of the naked dung on the bed. Nicol sows immediately after the bed is made, without waiting till the heat arises, which he says is losing time, and the opportunity of bringing on vegetation by degrees as the heat rises. He sows in a broad pan 4 inches deep, or in small pots 4 or 5 inches in diameter, and as much in depth. These he fills with "fine light earth" or vegetable mould, and covers the seeds 2 inches. He plunges these to the brim in the back part of the bed (which, it will be recollected contains a stratum of earth 6 inches thick, over one of sand and another of turf), puts on the light, and lets the frame be matted at night, in the ordinary way.

Raising plants from cuttings.—M'Phail says, "Instead of raising cucumber plants from seeds, they may be raised from cuttings, and thus kept on from year to year, in the following manner; the method of sticking them in is this: take a shoot which is just ready for stopping, cut it off just below the joint, behind the joint before which the shoot should have been stopped, then cut smooth the lower end of the shoot or cutting, and stick it in fine leaf or other rich mould, about an inch deep, and give it plenty of heat, and shade it from the rays of the sun till it be fairly struck. By this method, as well as by the method of laying, cucumber plants may readily be propagated." J. Meorns, gardener at Shobden Court, near Leominster, propagates his cucumber-plants for a winter crop in this way, and "finds that the plants raised from cuttings are less succulent, and therefore do not so readily damp off, or suffer from the low temperature, to which they are liable to be exposed in severe weather; that they come into bearing immediately as they have formed roots of sufficient strength to support their fruit, and do not run so much to barren vine as seedlings are apt to do." He takes the cuttings from the tops of the bearing shoots, and plants them in pots 9 inches deep, half filled with mould. He then waters them, covers the tops of the pots with flat pieces of glass, and plunges them into a gentle bottom heat. "The sides of the pot act as a sufficient shade for the cuttings during the time they are striking, and the flat glass, in this and in similar operations, answers all the purposes of bell-glassing. The cuttings form roots, and are ready to pot off in a fortnight.

Temperature of the seed-bed.—Abercrombie says, "The minimum heat for the cucumber is 58° at the coldest time of night, in the day-time 65° is sufficient for the maximum; because air admitted, when the sun has great influence, will do more good

than a higher heat. M'Phail says, "If it were possible to keep the heat in the frames always to 80°, with the concurrence of proper air and moisture, I am of opinion that that would be a sufficient heat for the production of the cucumber." Nicol keeps the air in the bed to about 65° in the night, allowing a few degrees of a rise in sunshine. Aiton rears and fruits his plants in a stove. Miller says, "The heat I wish to have in the seed-frame is from 65° to 75°."

Treatment of the plants until removed to the fruiting-bed.—After sowing, Abercrombie "continues the glasses on the frame, giving occasional vent above for the steam to evaporate, that the bed may keep a moderate heat, and not become too violent. The plants will be up in a few days, when it will be proper to admit air daily, but more gradually, at the upper end of the light, which may be raised from half an inch to an inch or two, according to the temperature of the weather, that the plants may not draw up weak, or be injured by the steam. In frosty weather hang part of a mat over the aperture. When the plants are a little advanced, with the seed-leaves about half an inch broad, strike them up, and prick them in small pots of light earth, previously warmed by the bed. Put 3 plants in each pot, and insert them a little slopingly, quite to the seed-leaves. Plunge the pots into the earth, and you may prick some plants also into the earth of the bed. Give a very little water just to the roots; the water should be previously warmed to the temperature of the bed. Draw on the glasses; but admit air daily to promote the growth of the plants, as well as to give vent to the steam rising in the bed, by tilting the lights behind, from half an inch to an inch or two high, in proportion to the heat of the bed and temperature of the weather. Cover the glasses every night with garden-mats, and remove them timely in the morning. Give twice a-week, once in two days, or daily, according to the season, a very light watering; keep up a moderate lively heat in the bed by requisite linings of hot dung to the sides." M'Phail, having sown, and placed the pots on the naked bed, says, "the plants will come up in a few days, and when they have fully expanded their seed-leaves, transplant them into small pots, 3 plants in each pot. Set them on the surface of the dung in the bed, and let a little air be left at the light day and night, to let the steam pass off freely." When the seedlings plants have one or two joints, stop them, after which they generally put forth 2 shoots, each of which let run till they have made 1 or 2 clear joints, and then stop them, and afterwards continue throughout the season to stop the plants at every joint." Nicol directs to guard the seed from mice, which generally swarm about hot-beds, by laying a pane of glass over the pot or pot till they come up; and afterwards at night by covering with a pot of equal size, till the seed-leaves have expanded and the husks have dropped; for until then the plants are liable to be destroyed. The cover, however, should always be removed by sunrise, and be replaced in the evening. It is at night these vermin generally commit their depredations. No air need be admitted till the heat begins to rise, and steam begins to appear; but after that the lights should be tilted a little every day, in whatever state the weather may be, until the plants break ground. Air must then be admitted with more care, and if frosty or very chill, the end of a mat should be hung over the opening, that the air may sift through it, and not immediately strike the plants. A little aired water may be given once a day, from the time the seeds begin to chip; and if a very strong heat rise, the pots should be raised a little to prevent the roots from being injured. They should be frequently examined on this account, and if the heat be violent, should be set loosely on the sand, or be placed entirely on the surface. The air of the bed should be kept to about 65° in the night, allowing a few degrees of a rise in the sunshine. If the weather be severe, the mats must be doubled.
or tripled, and if mild perhaps a single one will suffice. But
unless in very bad weather they should always be removed by
sunrise, in order to admit all the sun and light possible to
the plants, which are very essential to their welfare. When the plants
are about an inch and a half high, they are then fit to be pricked
out into nursing pots. These pots should be about 5\(\frac{1}{2}\) or 6
inches in diameter at top, and as much in depth. The mould
to be used should be the same as that in which the seeds are
sown, and should be laid in the frame a few hours previous to
potting, in order to bring it to a proper degree of warmth, that
the tender fibres be not chilled by it. Let the pots be filled
about one half with the earth, turn the plants carefully out of
the seed-pot; place three in each, against the side of the pot,
and so as their leaves may be just above its margin; then cover
the roots with the mould, rubbing it fine between the fingers,
and filling the pots nearly to the brim. Work over the sand in
the frame to its full depth, plunge the pots to within an inch of
their rims, and cover the whole surface with a little dry earth as
at first, making it level with the tops of the pots. Then give a little
aired water, in order to settle the earth to the roots of the plants.
The plants will now require due attention. Let air be admitted
to them as freely as the state of the weather will allow, and
supply them moderately with water once in 2 or 3 days. Exa-
mine the pots frequently, if the heat be violent, lest the roots
be scorched, setting them loosely or pulling them up in that
case, or if thought necessary, placing them entirely on the sur-
fase. If much steam abound in the bed at this time, it may be
proper to leave the light tilted half an inch in the night,
observing to hang the lap of a single mat 2 or 3 inches over
the tilt. But if the bed was carefully turfed over, as directed at
making up, this will seldom be necessary, never but in thick
hazy weather. Mat up carefully at night, but make a point to
admit all the sun and light possible to the plants; therefore,
uncover always by sun-rise; and frequently wash and wipe the
glasses clean, inside and outside, as they are often clogged by a
mixture of steam and dust. Also, occasionally stir the surface
of the sand or earth in the frame with the point of a stick, in
order to expiritate vapour, that hovers on the surface, and so
purify the internal air of the bed. If the heat begin to decrease,
and particularly if the weather be severe, it may be necessary
to line one or more sides of the bed, that the plants may receive
no check in their growth. If it be a 1-light box, both back and
front may be lined at the same time, and, if necessary, in 10 or
12 days, the two sides; and if much steam arise from the
linings after they come into heat, be careful in matting at night,
tuck up the edges of the mat, lest it be thrown into the bed.
Mills, as soon as the seed-leaves of the plants are fully ex-
paned, transplants them singly into pots of 4\(\frac{1}{4}\)th size, gives a
little water and air night and day. His temperature for seed-
lings, as already stated, is from 65° to 75°. With this heat and
water, as the earth in the pots becomes dry, and a little air night
and day, so as to keep the internal air in the frame sweet, and
fluctuating between the degrees of heat above mentioned, the
plants will be fit for finally transplanting out in a month, that is,
by the 14th of November, into the fruiting-frames.

Forming the fruiting bed.—Abercrombie directs, "When the
plants are advanced in some tolerable stocky growth, that is,
when the first rough leaves are 2 or 3 inches broad, or when the
plants have been raised about five weeks, transplant them to
the larger hot-bed, with a 2-light or 3-light frame, sometimes
called the ridging-out-bed." Form the bed on general prin-
ciples, of superficial extent, according to the frame it is to sup-
port, leaving from 4 to 6 inches all round, and fixing the height
according to the season. Thus in January, Abercrombie directs
"the bed to be 3 feet 9 inches high in front, 4 feet 6 inches at the
back, and 6 inches larger than the frame all round. In February,
3 feet 3 inches high at the front, 4 feet at the back, and 4 inches
to spare round the frame. In March, 3 feet high in front, 3 feet
6 inches at back, and 4 inches beyond the frame every way." "Put
on the frame and glasses presently after the body of the
dung is built up, to defend it from the weather. At the same
time raise the glasses a little at the upper end, in order both
to draw up the heat sooner, and to give vent to the rising steam,
until the bed is reduced to a regular temperature. In con-
nection with the thermometer, the cultivator may be assisted to form
a judgment of this by trying sticks, that is, 2 or more sharp-
pointed smooth sticks, thrust down in different parts of the bed,
which at intervals may be drawn up, and felt by a quick grasp of
the hand. The smell of the vapour is also a criterion; it
should not be strong and fetid, but mild and sweet. While
taking care that the heat is not so intense as to burn the mould
when applied as below, let it not be suffered to evaporate un-
necessarily by delay. If the temperature appear to be not suffi-
ciently high, take off the frame, and add another course of dung."
M'Phail, when he fruits the cucumber on dung beds, begins to
make preparation for the fruiting-bed, about 3 weeks before the
plants are ready to be planted for good. The dung collected,
after being well worked, is "made up into a bed of about 4 or
5 feet high, and the frames and lights set upon it. It is after-
wards suffered to stand for a few days to settle, and until its
violent heat be somewhat abated; and when it is thought to be
in a fit state for the plants to grow in, its surface is made level,
and a bill of mould laid in just under the middle of each light,
and when the mould gets warm the plants are ridged out in it.
After this, if the bed has become perfectly sweet, and there be
heat enough in it, and the weather prove fine, the plants will
grow freely." Nicol builds his fruiting-bed about 4 feet high in
front, keeping it fully a foot broader than the frame all round.
He turns it, and lays on sand as in forming the seed-bed, if the
dung has not been well fermented. "But otherwise, placing a
thick round turf, a yard over, in the middle of each light, so as
that its centre may be exactly under the plants, will generally
be found sufficiently safe." The frames are now put on, and
the beds matted up at night to make the heat rise the sooner.
Mills says, "Well preparing the dung is of the greatest im-
portance in forcing the cucumber, and if not done before it is
made into a bed, it cannot be done after, as it requires turning
and watering to cause it to ferment freely and sweetly; fresh
dung from the stable will require at least 6 weeks' preparation
before it will be fit to receive the plants. A month before it is
made up into a bed, it should be laid up into a heap, turned three
times and well shaken to pieces with a fork; and the outsides
of the heap turned into the middle and the middle to the outsides,
that the whole may have a regular fermentation; and if any ap-
ppear dry, it should be made wet, keeping always between the
two extremes of wet and dry. A dry spot of ground should be
chosen to prepare the dung on, that the water may drain away
from the bottom of the heap. The dung having been a month
in heap, I make the bed as follows: I form a stratum one foot
high of wood of any kind, but if larger the better (old roots of
trees or any other of little value will do). This is to drain the
water from the bottom of the bed, for after a month's prepara-
tion, with every care, it will frequently heat itself dry, and re-
quire water in large quantities, which, if not allowed to pass off
freely, will cause an unwholesome steam to rise, in which the
cucumber plant will not grow freely. On this bottom of wood,
I make the bed 4 feet high with dung, gently beating it down
with a fork. This is done about the 1st of November, and by
the month of February the 4 feet of dung will not be more than
2 feet thick, which, with a foot of wood, at the bottom, will
make the bed 3 feet high. This I consider a good height; for
if lower, it cannot be so well heated by linings, which is the
only method of warming it in the months of February and March, as by that time the first heat of the bed will have quite declined. Having made the bed, I put on the frames and lights, which I shut close till the heat rises. I then give air night and day, sufficient to allow the steam to pass off, and once in 2 days I fork the surface over, about 9 inches deep, to sweeten it, and if in the operation I find any part dry, I carefully wet it. The bed being quite sweet, I prepare it for the mould, by making the middle about 8 inches lower than the sides, as the sides are liable from the weight of the frames to settle farther than the middle, which often causes the hills of earth to crack, by which the roots of the plants are greatly injured."—Mills in Loud. encycl. gard. p. 562.

Moulding.—"As soon," Abercrombie observes, "as you deem the bed to have a lively, safe, well-tempered heat, which may be in a week or 10 days after building, proceed to mould it. Earth the middle of each light, laying the mould so as to form a little hill from 6 to 10 inches in height, according as seed is to be sown, or plants from the seed-bed inserted. Then earth over the intervals between the hills, and the sides of the frame only, from 2 to 4 inches, as a temporary measure, until the heat is ascertained to be within safe limits. After the whole bed has been for some time covered, examine the mould; if no traces of a burning effect appear discoverable by the mould turning of a whitish colour, and caking, it will be fit to receive the plants. But if the earth appears burnt, such part should be replaced by fresh, and vacuities made to give vent to the steam, by drawing every part of the hills from the centre. When the bed is in fit order, level the mould to 6 inches deep to receive the seeds; but to receive plants in pots the hills of earth should be kept 10 inches deep or more. If there be any motive for haste, while an excess of heat is to be suspected, the danger from burning may be obviated by leaving vacancies in the top of the mould; by placing patches of fresh cow-dung or decayed bark to receive the pots of seeds or plants; and by boring holes in the bed with a round pole, sharpened at the end, which holes should be filled up with hay or dung when the heat is sufficiently reduced. Some persons place a layer of turf with the sward downwards between the dung and the mould; but this, if ever expedient, is only in late forcing; for in winter the full effect of a sweet well-tempered heat is wanted, much of which, by being confined at the top, may be forced out at the sides." M'Phail, in moulding common hot-beds, also raises hills in the centre of each light in the usual way. Gard. rem. p. 51. Nicol gathers up from the surface of the beds a sufficient quantity of earth to raise hills whereon to plant; one exactly in the middle of each light, about a foot broad at top, and to within 6 inches of the glass. If the frames be a proper depth, they should be 12 or 15 inches high above the turf. Kal. p. 365. Mills puts under the centre of each light one solid foot of earth, the top of which is hardly within 9 inches of the glass, and the top of the plants when planted in it will be within 3 inches of the glass.

Planted out.—Abercrombie, when the temperature is ascertained to be right, brings the plants in their pots; turns over the hills of mould, forming them again properly, and then proceeds to planting. "Turn those in pots clean out, one pot at a time, with the ball of earth whole about the roots, and thus insert one patch of three plants which have grown together, with the ball of earth entire, into the middle of each hill, earthing them neatly round the stems. Also any not in pots, having been pricked into the earth of the bed if required for planting, may be taken up with a small ball of earth, and planted similarly. With water warmed to the air of the bed, give a very light watering about the roots, and shut down the glasses for the present, or till next morning. Shade the plants a little from the mid-day sun a few days till they have taken root in the hills, and cover the glasses every evening with large mats." Nicol, before planting, if the beds have settled anywise unequally, rectifies and sets level the frames, by placing boards, slates, or bricks under the low corners, so as to make them correct. He then makes up the outside of the bed with dung a few inches higher than the bottoms of the frame, over which he lays some dry litter or fern fronds, and planks at top to walk on. He then takes the pots of plants, each of which is supposed to have got two or three rough leaves, and making a hole in each hill, full large enough to receive the plants, turns them out of the pots as entire as possible, placing them level with the surface of the hill, firming the earth round their sides, and settling all with a little water. In the case of planting older plants than the above, at a farther advanced period of the season, or such as have quite filled the pots with their roots, the balls may be reduced a little, and the fibres should be singled out, if anywise matted. But the above plants are supposed to have barely filled the pots with roots, and then the balls should be kept entire, that they may not receive a check in transplanting.

Temperature for fructifying plants.—Abercrombie's minimum is 55°, and maximum in the day time 65°, the same as for the seed-bed. M'Phail says, "It appears that during the winter and spring months the medium heat of the air in the frames should be 75°, and the maximum heat 80°. But when the sun shines the heat of the air in the frames is increased to a much higher degree; so that reckoning this heat, the medium for that of the air in the frames may be 80°." Gard. rememb. p. 59. Nicol's medium heat for cucumbers is 60°; in sunshine he admits as much air as will keep down the thermometer to 65°. Kal. p. 366. Mills, in the fructifying frames, wishes "to have at all times from 70 to 80 degrees of heat, which I regularly keep up by applying linings of hot dung, prepared one month previously, in the same manner as that for the beds. For the first month I cover the glass with a single mat only; and as the nights become cold, I increase the covering, using hay, which I put on the glass, and cover that with a single mat. I regulate the heat at night by the warmth of the glass under the hay, for when the glass is warm, which should be in two hours after covering up, a little air is required. When the glass and hay covering are warm, which is easily known by putting the hand under the hay on the glass light, the internal heat of the bed will be about 78 degrees, in which degree of heat the cucumbers have grown in length in 16 hours one inch and a quarter. I give a little water round the insides of the frames, as often as I find them dry, which causes a fine steam to rise, and I think it better than watering the mould, for if this latter practice is often repeated in winter, when the sun's power is insufficient to absorb the moisture, and the glasses can be but little open to allow the damp to pass off; the earth in a few weeks will lose its vigour, and the roots of the plants will perish. Great care should also be taken, at this season, not to injure the roots by too much heat, which is not less detrimental than too much moisture: they can only be secured by keeping up a regular warmth, just sufficient to expel the damp, which arises in the night from the fermenting dung." Linings.—The requisite degree of heat, Abercrombie is careful to support in the bed when declining, "by timely linings of hot fresh dung, which may be applied to the sides 15 or 18 inches in width, and as high as the dung of the bed. Generally line the back part first, and the other in a week, or from 10 days to a fortnight after, as may seem necessary by the degree of heat in the bed. Sometimes if the heat has fallen abruptly below the minimum degree, it may be proper to line both sides moderately, at once to recover the temperature sooner, and with better effect; but be particularly careful never to over line, which would cause a too violently renewed heat, and steam in the bed. The dung for linings must be fermented, as in first

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building a bed." When the heat decreases, Nicol cuts away the old dung perpendicularly by the frame, and adds new linings, (generally beginning with the back first,) 2 feet broad to the height of 6 inches about the bottom of the bed frame. As it will sink considerably in heating, he adds to it in a few days. Mills applies linings of hot dung prepared a month previously.

Covering.—This must be nightly performed till June, proportioning the warmth of the cover to the heat of the air in the bed, and that of the external air. Mats are laid next the glass; on these a layer of hay, and over these mats, made fast by boards, but not hanging over the linings, is the usual mode, early in the season. M'Phail says, "My method of covering up was as follows: in the first place I laid clean single mats on the light in length and breadth, just or nearly to cover the sashes, taking care not to suffer any part of the mats to hang over the sashes, on or above the linings, for that would be the means of drawing the steam into the frames in the night time. On these mats was spread equally a covering of soft hay, and on the hay was laid another covering of single mats, upon which were laid two, or sometimes three or four rows of boards, to prevent the covering from being blown off by the wind. The mats laid on next to the glass are merely to keep the seeds and dust, which may happen to be in the hay, from getting into the frames among the plants. If the bed be high, in covering up steps or short ladders must be used by those whose office it is to cover and uncover; and great care must be taken not to break or injure the glass."

Air.—Abercrombie directs to "admit air every day when the weather is moderate, without much wind; and always more freely on sunny days, than when cloudy or cold and frosty. Open the lights behind, only a little at first, sooner or later in the day, according to the temperature of the season; increasing the opening from about half an inch to 1, 2, or 3 inches, or very little more (decrease the opening occasionally, if the weather in the early part of the season changes very cold); and shut close in the same gradual order towards afternoon, generally shutting close in the evening, unless in the early state of the bed, a considerable heat and steam continues. In this case you may occasionally leave open about half an inch, hanging the end of the mat before each opening." M'Phail says, "A cucumber plant delights in a strong heat, and in sweet wholesome air; but if the air in which it grows be contaminated, unhealthy, or impure, the plant will not continue long in a healthy flourishing condition. Whatever is disagreeable to the smell becomes in time hurtful to the cucumber plant; therefore whoever would wish to know if the air in a cucumber frame be in a healthy nature for the plants, should smell to it." He adds, in giving and taking away the air, do it gradually, that is, by little and little at a time, which without doubt is the best way: for sudden changes are always attended with unpleasant consequences. A due proportion and continual supply of fresh air is at all times necessary, and more or less is required according to the heat of the linings, the temperature of the weather, and the thickness of the coverings put on at nights. Gard. rememb. p. 42. Nicol admits air regularly in as large portions as the state of the weather will allow, being careful to let off rank steam, if it abound, by leaving a tilt, even in the night. Mills says, "My usual time of giving fresh air to the frames, and permitting the fowl to escape, in the winter months, (that is, from the middle of November to the middle of February,) is as follows: between 8 and 9 in the morning I raise the lights, and let the confined air pass off, shutting them again; about 10 I give a little air; at 11 more; at one I lower the lights a little, and between 3 and 4 I close them entirely. About two hours after the covering of hay has been put on, I give a little air for the night. Should the weather be changeable, the lights must be raised or lowered more or less, as circumstances may require; but some air about the times of the day above mentioned is absolutely necessary to keep the plants in a free growing state."

Water.—"Give necessary waterings with water warmed to the air of the bed, mostly in the forenoon of a mild day, in early forcing; and in the morning or afternoon in the advanced season of hot sunny weather."—Abercrombie. M'Phail says, "The quantity of water requisite to be given to the plants depends upon the heat of the bed, the strength and age of the plants, and also on the temperature of the weather. When the weather is cold, wet, and gloomy, and the air moist, they require less water than when the weather is clear, and the air more dry. If too much water be given, or if water be given too often, it will hinder the fruit from setting and swelling kindly; and if too little water be given, the plants will grow weak, and the fruit hollow. I seldom watered the plants with water warmer than 85°, nor colder than 65°; although in general I tried by the thermometer the warmth of the water I used, yet it is not necessary so to do. A good way to know if the water be of a proper temperature is to take a mouthful of it, and when it feels neither hot nor cold, then it is in a fit state for accelerating the growth of the plants, or for making them grow fast. I made a constant rule never to water the plants but with clean sweet water; and if the water be clean and sweet, I am of opinion it makes little or no difference whether it be pump water, spring water, rain water, or river water. However, it is a good quality in water to bear soap, and make a lather therewith, which rain and river water readily do; but the pump and spring waters are found too hard to do it, yet this may easily be remedied in them, by letting them stand a few days in the open air, and sun's rays. With regard to the time of the day in which the watering ought to be performed, I think it is not material, nor did I ever make any rule with respect to the time, but gave them water at any hour of the day, when I saw they stood in need of it, and when it best suited my convenience. Those who have hot-houses may get their water warmed there, and those who have no hot-houses may get some from the house, or from some other place where water is frequently heated. One gallon of hot water will properly water several gallons of cold water." Tate says "in spring and in the summer months the water may be warmed by exposure to the rays of the sun." Nicol airs his water "by some means or other," waters once or two or three days after planting, and liberally from the rose of the watering pot as the plants advance. The time chosen is the afternoon about 4 or 5 o'clock, in order not to scorch the plants, which, he says, often happens, when, after morning waterings, the sun's rays suddenly dart on the plants. Kal. p. 366—365. J. Mearns, already mentioned, uses water impregnated with sheep's dung, as does Mr. Knight. Mearns tried this water first "on some cucumber plants in the pine stove, which had been planted in January, but which in consequence of dull weather had become weak, and of a pale green colour; he applied the liquor to the roots, and in a few days a great change in the appearance of the plants was produced; the foliage assumed a hardy green, the shoots acquired an unusual degree of strength, with short joints, and although the stove had scarcely any air given to it, yet the fruit swelled rapidly, and attained a large size." These plants continued in bearing till May, and were then cut back to within 6 inches of the root, when they started again with vigour. "No water was ever given over the leaves, but a continued supply of the liquid pigeon-dung manure to the roots." Mearns. ex Loud. ency. Gard. p. 635. For Mills's practice as to watering see his process under temperature.

Earthing.—"Observe," says Abercrombie, "in proper time when the first heat of the bed is moderate, to begin adding more earth between the hills, as the extending roots require to be
covered, or the runners to be supported with mould; raising it by degrees equal with the tops of the hills, all in level order from 8 to 10 inches thick," Pract. Gard. p. 72. Nicol, "by the time the plants have sent out runners, and the roots spread quite over the hills, enlarges them; beginning by stirring up the earth in the other parts of the frame to its full depth with a hand-fork or weeding-iron, breaking it fine if anywise caked by the heat. To this add fresh mould, sifted or finely broken, and in a dry state, so as to raise the surface nearly to the level of the hills; laying it in a sloping manner from back to front. Previously he rectifies the position and level of the frames, and raises them so that the glass may be eight or nine inches above the mould in the centre." Kal. p. 367.

Training.—To force the cucumber into early fruit, Abercrombie directs to "stop the runners as soon as the plants have made two rough leaves; as the bud that produces the runner is disclosed at the base of the second rough leaf, it may be cut off or picked out, or if the runner has already started it may be pinched off close. This is called stopping at the first joint, and is necessary for a stronger steady growth, and an emission of fruitful laterals; and from these other prolific runners will be successively produced. The vines, without the process of stopping, would generally be both weaker, and so deficient of fertile runners, that they would sometimes extend 2 or 3 feet without showing fruit. When plants which have been once stopped have extended the first runners to three joints without showing fruit, they are to be again stopped for the purpose of strengthening the plant, and disposing it for bearing. As fertile runners extend, train them out regularly along the surface, fastening them down neatly with pegs." M'Phail stops his plants when they have two joints; and "when the plants shoot forth again after the second stopping, they seldom miss to show fruit at every joint, and also a tendril; and between the tendril and the showing fruit, may clearly be seen the rudiment of another shoot, and when the leading shoot has extended itself fairly past the showing fruit; so that in pinching off the tendril and the shoot, the showing fruit is not injured. This stopping the leading shoot stops the juices of the plant, and is the means of enabling the next shoot (the rudiment of which was apparent when the leading shoot was stopped,) to push vigorously, and the fruit thereby also receives benefit. When the plants are come into bearing, if the vines are suffered to make two joints before they are stopped, at the first of these joints, as I before said, will be seen showing fruit, a tendril, and the rudiment of a shoot; but at the second joint there is seldom to be seen either showing fruit or the rudiment of a shoot; but only a tendril, and the rudiments of male blossoms. It is therefore evident, and but reasonable, that the shoot should be stopped at the first of these joints; for were the shoot to be let run past the first joint, and stopped before the second, perhaps no shoot would ever spring forth at the said second joint, but only a cluster of male blossoms or leaves, which would serve for no good purpose, but would rather exhaust the juices of the plant, which ought to be thrown into the productive parts of it. If the plants are suffered to bear too many fruit, that will weaken them, and in such case some of the shoots will lose their leaders, that is, the rudiments of some of the shoots will not break forth, the numbers of fruit having deprived them of their proper share of the vegetative juices. The rudiments of some of the shoots may also be injured by accident, which sometimes prevents their pushing; but from whatever cause this happens it matters not, for by the losing of its leader the shoot is rendered unfruitful, and therefore should be cut entirely off. In the course of the spring and summer months, several shoots break forth here and there from the old ones. When too many break out, cut off the weakest of them close to the old shoots, and those which remain, with regard to stopping, serve nearly in the same manner as young plants. If the old shoot from which the new one bursts forth lie close to the moulds, it sometimes sends forth roots from the same joint from which the young shoot proceeded, by which the young shoot is much invigorated, and the old plant in some measure renovated. When this young plant is fairly formed on the old shoot, it somewhat resembles a young plant formed and struck root on a strawberry runner; and if the shoot were to be cut off on each side of the newly formed plant, and no part of the plant left in the frame but itself, by proper treatment it would soon extend itself all over the frame. In winter, when the plants are young, and before they come into bearing, it sometimes happens that they send forth too many shoots; in that case, cut the weakest of them off; not suffering them to become crowded and thick of vines, for that would weaken, and prevent the plants from bearing so early as they ought to do. Keep the leaves of the plants always regularly thin. The oldest and worst of them cut off first, and cut off close to the shoot on which they grow. This is necessary and right, for if any part of the stalk of the leaf were to be left, it would soon putrefy and rot, and perhaps destroy by damp the main branch from which it proceeded." Nicol, "Cucumber plants will put out runners or vines, whether the heart-buds be picked out or not, which is a matter of trivial concern, although much insisted on by some, as being necessary to their doing so at all. For my own part I never could discover any difference, and I have repeatedly made the comparison in the same bed, which otherwise of course could not be fair. When the vines have grown to the length of 4 or 5 joints, and if fruit appear on them, they may be stopped at one joint above the fruit; but otherwise, they may be allowed to run the length of 7 or 8 joints, and may then be stopped, which will generally cause them to push fertile shoots. These should be regularly spread out, and be trained at the distance of 8 or 10 inches apart."

Pruning and training cucumber plants.—W. P. Vaughan, (Gard. mag. 7. p. 462.) considers the productiveness of cucumber plants as depending principally on pruning, and the age of the seed; his system of management is therefore as follows. As he saves a few seeds annually he has always some three years old; these he sows in shallow pans in a dung heat not under 70°, and by the time the plants have spread their seminal leaves, he has soil and 22-sized pots ready dried in the frames, and plants them so as they will just reach over the rim of the pot when planted 3 or 4 in each pot, making them form a triangle or square; he then fits the pot to within half an inch of the top, waters them, and keeps them in a brisk heat of from 65° to 75°. And as soon as they have spread their first rough leaves, he picks out the leading bud from each plant close to the second leaf, and in a few days afterwards each plant will put forth two shoots, and they are ready for plunging in the hills without breaking the balls of earth, that is, one potful in each hill. When the lateral shoots have made two joints, they must be stopped at the second as before, and pegged down with a piece of straight stick, 6 inches long, broken half through in two places, so as to form a square. Each shoot will now produce two more, which never fail to show fruit at the first joint, and must be stopped at the second, which operation must be done to all as they make two joints. Picking off the male blossoms and setting the fruit, as they open, should be done in the morning just before the sun comes strong on the frames, until the weather will admit of the lights being open a great part of the day; watering should also be performed at the same time, shutting the frame close for a few minutes after. Cuttings taken from the tops of the shoots about 4 inches long, and planted in a pot deep enough to admit a flat pane of glass on the top, will strike freely, and these plants so produced will come into bearing.
sooner than those raised from seeds, but they are not of so long duration.

Upright training.—"Cucumber plants being climbers by means of their tendrils, some branchy sticks being placed to any advancing runners, they will ascend and produce fruit at a distance from the ground, in a clean growth, free from spots, and well flavoured."

Setting the fruit.—"The cucumber," Abercrombie observes, "bears male and female blossoms distinctly on the same plant. The latter only produce the fruit, which appears first in miniature, close under the base, even before the flower expands. There is never any in the males; but these are placed in the vicinity of the female blossoms: the fruit of which will not otherwise swell to its full size, and the seeds will be abortive. The early plants under glass, not having the full current of the natural air, nor the assistance of bees and other winged insects, to convey the farina, the artificial aid of the cultivator is necessary to effect the impregnation. At the time of fructification watch the plants daily; and as soon as a female flower, and some male blossoms are sufficiently expanded, proceed to set the fruit the same day, or next morning at farthest. Take off the male blossom, detaching it with part of the foot-stalk. Hold this between the finger and the thumb; pull away the flower leaf close to the stamens and anthers, which apply close to the stigma of the female flower, twisting it a little about, to discharge thereon some particles of pollen or fertilizing powder. Proceed thus to set every fruit, as the flowers of both sexes open, while of a lively full expansion, and generally perform it in the early part of the day, using a fresh male if possible for each impregnation, as the males are usually more abundant than the female blossoms. In consequence the young fruit will soon be observed to swell freely. Cucumbers attain the proper size for gathering in about 15, 18, or 20 days from the time of setting, and often in succession for 2 or 3 months or more in the same bed by good culture. The above artificial operation will be found both necessary and effectual in forcing the cucumber, between the decline of autumn and May, while the plants are mostly shut under glass. In plants more fully exposed to the free air, in the increasing warmth of spring, and in having the full open air in summer, from June and July till September, the impregnation is effected mostly or wholly by nature. The male flowers being by some ignorantly denominated false blossoms, are often plucked entirely off as useless, under the notion of strengthening the plant; but this should not be generally done. Where crowded too thick in clusters, some may be thinned out moderately; but their agency being absolutely necessary in fertilizing the females, they should only be displaced as they begin to decay, except where they are superabundant."—"It is the female blossoms of flowers," M'Phail observes, "that bear the fruit; but if they were not to be impregnated by the male flowers they would prove barren and unfruitful. The female blossoms are easily to be distinguished from the male ones, for the rudiment of the fruit is apparent at the bottom of the female flower, and the flowers have no stamens, but have three small pointed filaments, without summits; whereas the male blossoms have not any rudiment of fruit about them, but in the centre of the flower are three short stamens, which are inserted in the corolla. When the female or fruit blossoms are in full blow, take the male blossom which is in full blow, and holding it in one hand, with the other split and tear off the corolla, taking care not to part the stamens or male parts. Then hold the male blossom thus prepared between the finger and thumb of the right hand, and with the left hand gently lay hold of the female blossom, and holding it between the two fingers, put the prepared male blossom into the centre of the female blossom, and there the farina or pollen of the anthers clings or sticks to the stigmas, and thus the impregnation of the fruit is effectuated, and the plants are thereby rendered fruitful, which, being in frames in a climate by art made for them, would otherwise in a great degree be rendered barren and unproductive; and which I have frequently known to have been the case, even when at the same time the plants were in a vigorous flourishing state. Generally leave the prepared part of the male blossom sticking in the centre of the female one, and take a fresh male blossom to every female blossom. But if the male blossoms run scarce, which seldom or never happens, make one male blossom do for two or three females." Nicol states, that cucumbers will grow and will arrive at full size without the female flowers being impregnated: the seeds, however, will prove abortive. The directions he gives for impregnating are in substance the same as those of M'Phail. The fruit being set and swelling, some lay fragments of glass or slate beneath it in order to keep it clean, and to admit as much air and light as possible to the under side, so as to cause its approach in greenness to the upper.

On keeping a fine bloom on cucumbers.—"The art of producing and keeping a fine natural bloom on cucumbers, either for a gentleman's table for show, or for the market, merits great attention, both as to the perfect appearance of the fruit, and also to the general culture of the plant, after the fruit is set. From that time a strong bottom heat should be given with dung linings; or, if late in the spring, short grass laid round the frame on the dung, will cause a very strong heat. Water ought then to be given plentifully, always at the back part of the frame; and at no time should the plants be watered over their leaves, when the fruit is wanted for its fine delicate bloom and long regular shape. A fine foliage over all the bed is likewise a very essential point; and leaves should never be picked off near the fruit, as it thereby deranges the juices of the plant, and consequent the fruit does not swell off finely. Air also should be given very sparingly in the middle of the day, even in bright sunshine, and generally there should be a little left in the night, when the bottom heat is very strong, as by that means the air in the frame is kept sweet. When the fruit is fit to eat, for any of the above purposes, great care should be taken to pack it in narrow wooden boxes, in the largest nettle-leaves that can be got, filling up the interstices with well-beaten moss, and covering over with soft leaves of any kind. It may then be sent to a great distance with a fine bloom, and, upon the whole, in a perfect state.—Geo. Fulton, ex Loud. gard. mag. 6. p. 709.

Gathering the crop.—"Cucumbers are used green and unripe, and before they have attained their full size. They are cut and gathered when 4, 5, 6, or 8 inches long, according to the kinds. To this size they attain in 10 days or a fortnight in the best part of the season.

To save seed.—"Select some best summer fruit, from good productive plants, which permit to continue in full growth till they become yellow. Then cut them from the vine, and place them upright on end in the full sun for 2 or 3 weeks, when they may be cut open, and the seed being washed out from the pulp, spread it to dry and harden; then put it up in papers and bags for future sowing. It will remain good many years; and seed of 3 or 4 years' keeping is preferable for early frame crops."

On forcing cucumbers.—"In growing cucumbers under lights, "the most obvious defects," according to Mr. Allen, "are compost of too light a quality," and "dung not sufficiently worked before it is earthed over." Mr. Allen has been in the habit of growing early cucumbers under frames, on common dung-beds, for twenty years, always producing abundance of fruit from March till October. In 1823 he worked 70 lights for the London market, the produce of which was 3360 cucumbers, or 4 dozen to a light, "a greater product than is usually obtained
CUCURBITACEÆ. IV. Cucumis.

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by any of the ordinary methods of treatment." The beds are made in December or January, the hot horse-dung having been previously turned and watered 5 or 6 times. Before earthing it, round flat mats, about 15 inches in diameter, formed by colling up a band of straw, 1 inch in diameter, and 10 feet long, are to be prepared and placed on the dung, under the centre of each light. Rye straw is preferred for these mats, as it does not encourage mice. A bushel of compost, consisting of loam and rotten dung, is placed on each mat, and 1 plant in preference to more, on the top of each hillock; the top of the plant should be left about 3 inches from the glass; the mould should then be dressed up around the hillock, and be pressed close to the roots, and within 1 inch of the seed-leaves of the plant; these, at no time of earthing, should not be covered, for this is very apt to cause canker. The earth should be kept within the bounds of the straw mat, and not be suffered to mix with the dung, as that would cause a burning, which is not only troublesome, but in many instances fatal to the prosperity of the plant; because if the earth is once burnt, its vegetative quality is destroyed, and water will have no effect on it. The only remedy in such a case is to remove the mould, fork up and water the dung, lay on a little rye straw, and replace the earth. After ridging out, from one quarter to one inch of air is given in the day, and about one quarter during the night. The covering must be very slight for the first 3 or 4 weeks, and must not hang over the sides. "The heat must be kept up by augmenting the linings once a-week, turning over and watering them when they heat so as to become dry. The bed inside the frame will require forking up about 9 inches deep, 3 times a-week; the hillocks at the same time should be examined, and a round pointed stick, of about an inch in diameter and 18 inches long, must be thrust about 12 inches in the dung, under the straw mat, making 5 or 6 perforations under each hillock. Into each of the holes so formed, pour from the spout of a watering-pot as much water as the state of the bed seems to require; this may be ascertained from the facility with which the perforator goes into the bed. If the bed is husky or burning, the stick will go in with difficulty, and then a large pot of water is required to a hillock; on the contrary, if the bed is in a free state of working, the perforator will go into it very easily, and then a sprinkling from the rose of the pot will be sufficient." A great object of Mr. Allen seems to be to sweeten, rot, and moisten the dung under the frame for the roots of the plants, while the heat is principally supplied by the linings. "The dung," he says, "from the continued forking and watering, will become in a fine state to receive the roots of the plants; these, after passing through the proper depth of compost, placed over the dung, which is about 8 inches, will readily strike into the dung, and bear a productive crop of cucumbers throughout the summer, without their leaves flagging or requiring any shade. For ascertaining the proper periods to make additions to the earth, the best criterion is the appearance of the roots through the sides of the hillock. This should be earthed over about 3 inches, each time forking out the dung 2 inches below the mat, to give a greater depth of earth each time of performing the operation. The last time this is done, the depth of mould at the back of the frame should be 20 inches. It will be necessary to raise the frame and lights as the plants advance in growth." Water should be given plentifully 3 times a-week, without wetting the leaves or fruit, "pouring it against the back of the frame, for the mould will dry faster against the back than the front, in consequence of the heat being there greater, and the air being admitted there." "In pruning, the runners should not be cut or thinned out, the tops only should be pinched, and at every joint, beginning where the plant has 2 rough leaves, and the second rough leaf is about an inch in diameter. That will cause the plant to produce fruit and a fresh runner in succession at every joint; it will likewise add to the strength of the plant." Pinch off the tendrils and male blossoms, and fecundate artificially in the early part of the season. The sort of cucumber which Mr. Allen finds most productive is the Southgate, and he prefers seed 3 or 4 years old to new seed.—Loud. gard. mag. vol. 1. p. 416. 417.

Insects and diseases.—The thrips sometimes attack early cucumbers, and are to be destroyed by fumigation. The red spider rarely makes its appearance; when it does water must have been improperly withheld. Some soils produce canker in the shoots, especially where they branch from the main stem. When this is the case, the only resource is to renew the soil and the plants.

Growing the cucumber under hand-glasses.—The following method is given by M'Phail as that generally practised: "The seeds are sown some time about the middle of April in a cucumber or melon-bed, and when they come up, they are potted out into small pots, 2 or 3 plants in each pot, and are kept properly watered, and stopped at the first and second joints. About the middle of May, a warm situation, where the mould is very rich is pitched on, and a trench is dug out about 2 feet deep, 3 feet broad, and the length is proportioned according to the number of glasses it is intended for. This trench is filled with good warm dung, and when the dung has come to its full heat, it is covered over with 8, 10, or 12 inches' depth of rich mould. The glasses are then set upon it about 3 feet distant from each other, and when the mould gets warm under them, the plants are turned out of the pots with their balls whole, and plunged into the mould under the glasses, and a little water given them to settle the mould about their roots, the glasses set over them, and after they have made roots, and begin to grow, in fine days the glasses raised a little on one side, to let the plants have the free air; and as the weather gets warmer and warmer, air is given more plentifully to harden the plants, so that they may be able to bear the open air and run from under the glasses. When the plants begin to fill the glasses, they are trained out horizontally, and the glasses are set upon bricks or such like, to bear them from the plants. After this the plants require nothing more but to be supplied with water when the summer showers are not sufficient, and to stop them when they run too thin of branches, and thin them of leaves or branches when they are likely to become over-crowded. In warm summers and in warm situations, by this mode of management, the plants will bear plentifully for about 2 months, provided they be not attacked by insects or weakened by diseases." Abercrombie describes the practice somewhat different, but with his usual detail and order. He says, "To have a general summer crop, to fruit in hot-bed ridges under hand-glasses, sow some seed of the long prickly kind in a hot-bed, under a frame or hand-glass, or in any cucumber hot-bed in cultivation, about the middle of March, or thence till the middle of April. When the plants have been up 3, 4, or 5 days, prick some in the same or another hot-bed, 3 or 4 inches asunder. A portion may be put in small pots, 3 plants in each, and plunged in a bed. Give water, and shade from the sun till they take root; and manage as for the frame crop. In 3 or 4 weeks, when advanced in the first rough leaves, about 2 inches broad, and stopped at the first joint as directed in the early crop, the plants should be ridged out, that is, transplanted into hot-bed ridges, under hand-glasses, to remain for fruiting. The period for this may fluctuate from the middle of April to the beginning of May. Having a sufficient quantity of prepared dung, make a hot-bed on the level ground, 3½ or 4 feet wide, and 2½ feet high, the length as required, according to the number of hand-glasses intended. Earth it at top 6 or 8 inches thick, and place the hand-glasses along the
middle at 3½ feet distance. Sometimes the bed is made in a
moderate trench, 12 or 15 inches deep, in some good soil in the
kitchen-garden, in order to have the excavated earth of the
trench ready at hand for mourning the bed. When the earth
under the glasses is warm, proceed to put in the plants, remov-
ing them from the nursery-bed, with as much earth as will
adhere about the roots. If you have any plants in small pots,
turn them out with the ball entire, and plant 3 plants under each
glass. Give a light watering; put down the glasses, and shade
the plants from the sun, till they have taken root, after which
let them enjoy the sun and light fully, only covering the glasses
and bed every night with mats till June, or commencement of
warm weather. Admit air every mild day, by propping up the
southward side of the glasses 1 or 2 inches; moderate waterings
will be necessary twice a-week or oftener. As the plants push
runners of considerable length, train them regularly. When
extended to the limits of the glasses, and when the weather is
settled warm, about the beginning or middle of June, they
should be raised upon 3 props 2 or 3 inches high, and the runners
trained out in regular order, but cover them on cold nights with
mats, for the first week or two. Continue the glasses, and cir-
sumspectly water in dry weather, as may be necessary; the
plants will produce fruit in June, July, August, &c. in plentiful
succession. To obtain a crop from hot-bed ridges, under hand-
glasses, you may, in default of plants raised in a previous nur-
sery-bed for transplanting, sow seed under the glasses in April
or May, inserting several seeds in the central part under each
glass. When the plants have been up a few days or a week,
them to 3 or 4 of the strongest in each patch, managing
them afterwards as the others. They will come into bearing
towards the end of June or July, and thence to September.
(Should there be a scarcity of dung to make a regular bed,) in
the last week of April, or in May, you may dig circular holes
2 feet wide, a spade deep, and 4 or 5 feet asunder; fill them
with hot dung, trodden down moderately firm, and earthed over
6 inches. In these put either plants or seed, and place on the
glasses; the plants will produce fruit in June or July till Septem-
ber. (In default of hand-glasses,) make a hot-bed, or holes of
dung, as above, in May; put in plants or seed, and defend
with oiled paper frames, to remain constantly, day and night,
till settled warm weather in June or July. Give the additional
protection of mats over the paper frame in cold nights and bad
weather. In the culture of all the crops, give proper supplies
of water in dry warm weather, 2 or 3 times a-week, or every
day in the hottest season of June, July, and August. In the
hot-bed ridges, made above ground in April or May, if in 3 or
4 weeks or more after making, the heat be much declined, and
the nights or general season remain cold, let a moderate lining
of hot dung be applied to the sides, which will both throw in a
reviving heat, and widen the bed for the roots and runners of the
plants to extend."

Cultivation of the cucumber in a flued pit.—Nicol says, "Those
who would have cucumbers on the table at Christmas (a thing
sometimes attempted), will find it more practicable, and less
troublesome, if the plants be grown in a flued pit, in the manner
of late melons, than if they be grown in a common hot-bed.
In this case the cucumbers should take place of the melons
planted in this compartment in July, and which will, by the
middle or end of the month, have ripened off all their fruit of
any consequence. The seeds of some of the early sorts (those
best for early being also best for late) should be sown in small
pots about the first of the month, and should be placed in the
pit along with the melons, or under a hand-glass, on a slow dung
heat; where let the plants be nursed, and be prepared for plant-
ing about the second or third week in the month, as hinted at
above. Observe to sow old seeds, not those saved this season,
which would run more to vine than to fruit. Let the pit be
prepared for their reception, by trenching up the bark or dung,
and by adding fresh materials, in so far as to produce a mo-
derate growing heat; observing the directions given for pre-
paring the pit for the melons in July, and moulding it (however
with proper cucumbers earth) all over to the depth of a foot or
14 inches. The plants may be placed closer in planting them
out than is necessary in a spring hot-bed. They may be planted
at the distance of a yard from each other, and 2 rows lengthwise
in the pit, as they will not grow very vigorously at this late
season. They should be moderately supplied with water once
in 4 or 5 days, and should always be watered over the foliage,
more especially when strong fire-heat becomes necessary, as
cucumbers naturally like a moist rather than a dry heat.
The temperature should be kept up to about 70° or 80° in the
night, by the side of the flues, and by matting, or otherwise cov-
ering the pit. Air should be as freely admitted as the state of
the weather will allow, and so as to keep the mercury down, in
sunshine to about 70°. The plants will require little other pruning
than to stop the vines, as they show fruit at the joint or two
above it; for they will not push many superfluous shoots. Ob-
serve to pick off all damp leaves as they appear; and other-
wise carefully attend to them, as above directed, while they
continue to flourish, or to do any good worthy of such attend-
ance."

Cultivation of the cucumber in M'Phail's brick-bed pit.—
"When I used," observes M'Phail, "to cultivate cucumbers on
a dung-bed, the fruit were sometimes watery and ill-tasted; but
after I began to cultivate them on a brick-bed, the fruit were
constantly firm and well-flavoured, which is certainly occasioned
by the goodness and wholesomeness of the food with which the
plants are fed or nourished." M'Phail's pit has many advantages
over a common hot-bed: there is no chance of burning the roots
of the plants in it, the linings being placed all on the outside,
without any dung underneath the plants. "All the materials of
my newly-invented bed are clean and sweet; and the flues being
made perfectly close, no tainted or bad-smelling air can get
through them into the bed; so that it is of little or no concern
whether the dung of the linings be sweet or otherwise, or whe-
ther the linings be made of dung or of any thing else, provided
there be a sufficient heat kept in them, and no pernicious steam
be drawn in among the plants by the current of air." A shel-
ered dry situation is of the first consequence for this pit. The
bed being built, "when the frame is about to be set upon it, a
layer of mortar is spread all round upon the upper course of
brick-work, on which the bottoms of the frames are to rest.
Thus the frames are set in mortar on the bricks; and the flues
are, with a bricklayer's brush, well washed, and rubbed with a
thick grout, made of lime and water, which stops every crack
or hole, and prevents the steam of the linings from getting into
the frames. This washing of the flues I had done once a-year,
for no crack or hole must ever be suffered to remain unstop-
pered in the flues. I found little or no trouble in keeping the flues
perfectly close, nor is it indeed likely that they should become
troublesome, if the bed stands on a sound foundation, for the
heat of the dung has not that powerful effect on the flues, as
fire-heat has on the flues of the hot-house; because the heat of
dung is more steady and not so violent as the heat of the fire,
and, besides, the flues of a cucumber-bed are almost always in
a moist state, which is a preventive in them against cracking
or rending. When the bed is first built, the pits are about 3
feet in depth below the surface of the flues. The pits I had
filled up about a foot high, some of them with rough chalk,
some of them with small stones, and some of them with brick-
bases; this is to let the wet drain off freely from the mould
of the beds. After this filling up with chalk, stones, and broken
bricks, there is a vacancy in the pits, about 4 feet deep below the surface of the flues; this vacancy I had filled to a level with the surface of the flues, with vegetable or leaf mould; and in putting it in, it was gently pressed, to prevent it from sinking too much afterwards. On the surface of the mould with which the pits were filled, under the middle of each light, and which is just in the centre of the mould in each pit, make hills of mould, in the same form as is commonly done on a dung-bed. These hills are to set the plants in, and are to be raised at first nearly close to or within a few inches of the glass. Raising the mould at first very pith the glass is necessary, on account of the sinking of it; for as the frames are set on bricks, they cannot sink; but mould newly put in is sure to settle, and the measure of the settlement will ever depend upon the lightness and texture of the mould with which the pits are filled. Therefore, these and such-like matters must be left to the discretion of those who are intrusted with the direction and management of the frames. When the bed is thus finished, and ready for the reception of the plants, if the flues be strewed over with mould, so that their surface be just covered, to a stranger it is altogether a deception, for in every respect it has the appearance of a dung-bed. The ashes of the frames which I used were glazed in lead; but if any person who rears early cucumbers has lights which are not glazed in lead, but are state-glazed, the vacancies between the glass had best be filled up close with putty, to prevent too much air from getting into the frames in the cold days of winter. The frames under my management were constantly kept in good repair, and painted over once every year. This method, I am clearly of opinion, is more profitable than if the frames were neglected for 2 or 3 years, and then have a thorough repair, with 2 or 3 coats of paint. When frames are newly painted, they should be suffered to lie and sweeten for some time, at least for 2 or 3 weeks, or until the disagreeable smell of the paint is somewhat lessened. Although the frames I used were of a very good size, yet if they were a little smaller or larger, they would answer the purpose very well. Therefore those who intend to build a bed after my plan, have no occasion to make new frames merely for the purpose, but they may get the bed built to fit the frames they are already in possession of. The linings are to be applied to the bed a few days before the plants are ready for finally placing, but in order that the mould and every thing in the frames may be properly warmed for their reception. The dung, of which the linings are to be made, may either be cast together into a heap, to bring it to a heat before it be laid round the bed, or it may be laid round the bed as it is brought from the dung-yard; but whichever of these methods be taken, when the linings are making up, the dung should be well shaken, and laid up lightly, so that the heat of it may come up freely. As it takes some days before the linings are able to warm the earth in the bed sufficiently for the reception of the plants, the rank steam of the new dung linings is evaporated, unless the dung came immediately from the stables, which seldom is the case. The linings are to be made nearly 3 feet broad in their foundation, and tapered up to about 30 inches at the top, by which they will retain their heat long, and in sinking will keep close to the bed, which is what should at all times be paid proper attention to. In the winter and spring months, the linings should be trodden upon as little as possible, for treading on them would be the means of stagnating the heat. But should it at any time, in managing the plants, be found necessary to stand or kneel upon them, boards should be laid on their tops for that purpose; which will prevent the weight of a person from taking that effect on them which it otherwise would do. As the linings sink they are to be raised with fresh dung, but they should seldom be raised higher than the level of the mould in the frames on which the plants grow, especially when there is a strong heat in them; for when there is a great heat in them, if they are kept higher than the level of the mould, the heat dries the air in the frames too much. Nor should they be suffered to sink much below the level of the mould in the frames, for that, on the contrary, would cause too much moisture in the frames, especially in the winter and spring months. When the heat begins to be too little, notwithstanding the linings being kept to their proper height, the fresh unexhausted dung underneath should be taken away, and that which was laid aside put in the foundation, and fresh dung laid above it, in lieu of that which was carried away. Both the side linings may be raised at one time, but both of them should never be renewed together; for if both were to be renewed at the same time, it would for a time cool the frames too much, and when the heat of both came to their full strength, it would probably be too powerful to the roots of the plants when extended to the flues. I seldom or never renew the end linings, because I found the heat of the side ones fully sufficient; for as there are flues or vacuities in every part of the bed, the steam being fluid, circulates in and warms every part thereof. And for the very same reason there is no occasion for having a strong heat in both the side linings at one and the same time, except in very cold weather. In making up and pulling down the linings, care should be taken not to injure the brick-work. The covering the lights in the winter and spring is absolutely necessary; for, notwithstanding the heat of the linings, it would be impossible to keep up a proper degree of heat in the frames for the plants without covering. Therefore, the covering up in the evenings and uncovering in the mornings must be particularly attended to, and more or less put on according to the heat of the linings and temperature of the weather. After the bed is set to work, heat and sweet moisture are the two principal agents required for promoting the growth and vigour of the plants; therefore if there be a heat kept in the linings, strong enough to keep the heat in the centre of the pits of mould fluctuating between 80° and 90°, cold water may be poured on the flues twice or thrice a week. There is no danger of creating damp or impure air in the frames by watering the flues; for the water is no sooner poured on them, than it runs down their sides, and passes clear off through the drains of the bed; consequently, water being poured upon the flues, gives only a momentary check to the heat of the frames; for the flues being at all times full of hot steam, when the watering is finished, the heat quickly resumes its former vivacity, and raises a warm vapour in the frames, well adapted for promoting vegetation, and for increasing the growth, and invigorating the plant in all its parts. The mould round about the sides of the pits close against the inner sides of the flues, should be kept nearly on a level with the surface of the flues, and as it is the mould that joins to the flues which receives the first and greatest heat from the linings, it should be continually kept in a moist state; for if the mould against the flues be suffered to become dry and husky, air will be generated in the frames disagreeable to the plants. In all other respects, the culture of cucumber or melon, on M'Phail's brick-bed, corresponds with the culture of these fruits on common dung-beds. M'Phail has, in his "Gardeners' Remembrancer," as well as in his "Treatise on the Cucumber," given the temperature of one of his beds for every day in the year, of which the following table shows the extremes for every month:

<table>
<thead>
<tr>
<th>Month</th>
<th>morn.</th>
<th>noon.</th>
<th>even.</th>
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<tr>
<td>January</td>
<td>58° to 80°</td>
<td>66° to 90°</td>
<td>75° to 77°</td>
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<tr>
<td>February</td>
<td>68° - 85°</td>
<td>68° - 90°</td>
<td>78° - 84°</td>
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<tr>
<td>March</td>
<td>62° - 85°</td>
<td>65° - 90°</td>
<td>82° - 85°</td>
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<td>April</td>
<td>69° - 84°</td>
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<tr>
<td>May</td>
<td>67° - 79°</td>
<td>70° - 90°</td>
<td>66° - 95°</td>
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CUCURBITACEÆ. IV. Cucumis.

By the heat described in these tables, and plenty of water, the cucumber plants, if sown on the 22d day of October, were maintained in a healthy fruit-bearing state in the brick frame of my inventing, from the month of January to the beginning of December. The melon plants in the management of the author, were kept in about the same degree of heat which he has given for the culture of the cucumber, in the forcing frames; and he ventures to predict that if any person keep melon or cucumber plants in nearly the same degrees of heat, as is set down in the foregoing plant tables, and manage the plants well in other respects, the way to do which he thinks he has clearly pointed out in this treatise, he is persuaded they will not fail in having success. He adds, that notwithstanding the objections of some who have not been successful in making trial of his bed, "it is now generally approved of, and in practice by numbers of the best gentlemen's gardeners in the kingdom, and by various market gardeners in the neighbourhood of London." West's pit, however, seems superior to McPhail's, as requiring much less dung, presenting a much more neat and orderly appearance, and giving a greater command of temperature.

Cultivation of the cucumber in a common pit without flues.—Some form a narrow dung-bed along the middle of each pit, leaving room for adding a lining on each side when the heat declines. The method succeeds very well late in the season; but at an early period the sinking of the bed from the glass leaves the plants at a great distance from the light.

Cultivation of the cucumber in houses.—"Cucumber plants," McPhail observes, "will grow in a hot-house, where the pineapple is cultivated; but they will not be very long lived there, for that is not a healthy climate for them." In August sow the seeds in boxes filled with vegetable or other light earth, and place them on shelves on the back side of the hot-house, where the sun may not be interrupted from shining on them in the short days. They may perhaps produce a few fruit in the month of December or January." Gard. rememb. p. 301. Abercrombie says, "some gardeners, ambitious of early fruit, try a sowing in the stove under the disadvantages of December. Fruiting this plant in the house in narrow boxes 3 feet long, and full 20 inches deep, may be found more commodious than pots. The boxes may stand upon the crib-trellising over the flues, or be suspended near the back wall, 18 inches from the upper tier of lights, so as not to shade the regular house plants: this is the best situation for a very early crop. The plants may be originated in small pots, plunged into the bark-bed, in order to be transplanted with a half ball of earth into the borders. Those who aim to have fruit at Christmas introduce seedlings about the middle of August." "The chief deviation from the course of the hot-bed is, that the plants must be trained in the house upright, for which purpose form a light temporary trellis of laths. Give water every other day at least." Pract. Gard. p. 618.

We have already quoted the particulars of Aiton's method of raising cucumber plants in August, with a view to their being reared in the stove through the winter. We now subjoin the remainder of that paper. "The plants being raised on a well prepared one light hot-bed, when the cotyledons or seed-leaves became nearly of full growth, the plants were potted out, two into each pot, known to gardeners about London by the name of upright thirty-twos. When these pots became filled with roots, the plants were again shifted into larger ones, called sixteens, and removed from the seed-bed into a three light frame, with a sufficient bottom heat to allow a considerable portion of air being given day and night, both in the front and back of the frame. About the middle of September, the plants having again filled their pots with roots, and become stocky, were taken from the frame to the stove, and after a few days received the last shifting into larger pots of the following dimensions: at top 14 inches over, the bottom 10 inches across, and 12 inches deep, all inside measure; each pot at equal distances apart, having three side drain holes near the bottom, and a larger one in the centre of the bottom, and containing about three pecks of solid earth. The cucumber plants were fruited this season in a pinery. On the front edge of the back flue of this stove, a fascia-boarding, 6 inches deep, was affixed the whole length of the building, forming all along a trough or inclosure for a reserve of compost, after the exhaustion of the mould in the pots had taken place. The pots were now placed in regular order upon the mould-trough over the flue at 3 feet apart, and remained in this station for good, for success in 3. A setting of the second sowing was placed upon the end flues of the house; under each pot were set an upright circular garden pan, 6 inches deep, and 14 inches in diameter, which being filled with earth, the pots were plunged therein about 2 inches deep, and the drain holes being sufficiently covered with mould, served as outlets to the roots. From this time the fire heat of the stove was kept day and night at 60° or 65° of Fahrenheit's thermometer, varying only a few degrees when the sudden influences of the sun or steam produced an additional glow of climate. The plants being now established and vigorous, required stopping the laterals and fruit; and these second and third lateral shoots in their turn were stopped also, and the blossoms from time to time set, as usual, for succession of supply. Waterings were necessary only when the surface of the earth was evidently dry, and light sprinklings of soft water, tempered in the stove, were occasionally given over the leaves of the plants and path with good effect. Steam from a well regulated flue was considered always favorable to the cultivation, but applied sparingly on account of its scalding effect upon the leaves, when the vapour proved overheated. For the mildew, flower of brimstone, coloured leaf-green by a little soot, has been applied with the best success in all stages of the disease, and copious fumigations of tobacco were used for the destruction of the several species of the aphid tribe. Under this simple practice winter cucumbers have been produced abundantly in the months of October, November, December, and part of January, in all the royal gardens of His Majesty during a series of years." Aiton ex encycl. gard. p. 642, 643.

Cultivation of the cucumber in Week's patent frame.—Only two instances in which this ingenious invention has been tried are known to us, both of which are mentioned at the end of "Week's Forcer's Assistant." The chief objection to it is, that the bed or stratum of earth in which the plants are grown, being but of moderate depth, and surrounded by air above and below, is extremely difficult to retain an equable moisture. There are several other structures for growing cucumbers and melons in besides those mentioned above; but none of them appear to us to be of much importance.

On a mode of producing a crop of cucumbers during winter.—James Reed, (Gard. mag. 3. p. 23.) places his winter cucumber bed in a vineyard. In this vineyard the air could be admitted both by the front and top lights. About the 20th of September the cucumber seeds were sown on a moderate hot-bed in the open air, and heated in the usual manner until they were ready to ridge out. This generally happened about the beginning of
November, at which time the shoots of the vines were withdrawn from the house, and a dung-bed formed in the floor of the

in the usual way. After placing the frame and mould on the bed, it may be left without the lights until the rank steam has passed off. After this, the plants being placed in the hills, and the sashes put on, the following are the leading features of management during the winter. Make fires in the evening, so as to warm the air of the house to from 30° to 60°, and in very severe frosts it may be raised to 70°. In the mornings of the coldest weather, and shortest days, make a strong fire, so as to raise the heat to nearly 70° when the house is shut up. About 8 o'clock, and from that time to half past 9, give plenty of fresh air, by opening the front sashes and top lights, after which, and during the remainder of the day, give plenty of air to the cucumbers, by tilting the sashes in the usual way. In mild weather, and during sunshine, the lights may be taken entirely off the cucumbers for some hours each day; and immediately after forming new linings, the top lights may be left open a little all night to permit the escape of rank steam. The advantage of this mode of growing cucumbers during winter is, the comparative certainty of an early and good crop at one-third of the trouble and expense of the common method out of doors. By this practice fruit may be cut in January. The vines may be introduced in the beginning of March, and will break beautifully and regularly in consequence of the genial steam of the dung. In April the shade of the vine leaves will have rendered the house too dark for the culture of the cucumber, and as by this time cucumbers are plentiful in the common hot-beds out of doors, the bed in the vineyard may be cleared away, and the vines treated in the usual way till the following November.


4 C. flexuosus (Lin. spec. 1437.) stems trailing, scabrous, flexuous, cirrhiferous; leaves cordate-ovate, somewhat lobed, denticulated, stalked; flowers in fascicles in the axils of the leaves; calyx very pilose; fruit long, cylindrically-ovate, furrowed, flexuous, replicate, white or yellow. ©. F. Native of the East Indies.—Lob. stirp. p. 353. f. 2. Dodon. pempt. p. 66. f. 2. Ger. herb. p. 763. f. 3. Fruit the size of a large pear, eatable, and delicious. It is cultivated about Nagasaki and elsewhere in Japan; is ripe in June, and is called by the Dutch Banket Melon.

F. var. b. rhedescus (Ser. mss.) leaves angularly-lobed. C. ré- flexus, Zieh.


5 C. Junitaukës (Bert. ex Spreng. syst. 3. p. 46.) leaves cordate, 3-lobed, quintuple-nerved, glabrous, quite entire, beset with seborous dots beneath; lobes acuminate; fruit nearly globose. ©. F. Native of Jamaica.


6 C. Macracra (Wenderoth ex Mart. reis. bras. ex Linna. 5. p. 39.) leaves cordate, rather angular, acutish, sharply-denticulated, seborous from hairs; fruit oblong, oblongo-scapular, and spotted; remotely tuberculated. ©. F. Native of Brazil.

Long-fruited Cucumber. Pl. trailing.

7 C. Chiate (Lin. spec. 1437.) plant very villous; stems trailing, bluntly pentalocular, flexuous; leaves petiolate, roundish, bluntly angled, denticulated; flowers small, on short peduncles; fruit pilose, elliptic, tapering to both ends. ©. F. Native of Egypt and Arabia.—Alp. exot. aggr. p. 54. t. 40.—Bauh. hist. 2. p. 248. f. 3. The fruit is rather watery; the flesh almost of the same substance with the melon; the taste somewhat sweet, and cool as the water-melon. The grandees and Europeans in Egypt eat it as the most pleasant fruit they have, and that from which they have least to apprehend. With us it is very indifferent. It is most common in the fertile soil around Cairo, after the inundation of the Nile. Chate is the Egyptian name of the plant.


8 C. Doni (Lin. spec. 1437.) plant hispid; lower leaves roundish, upper ones somewhat 5-lobed, cordate at the base, denticulated; tendrils simple; petals ovate-roundish; male flowers having the calyx rounded at the base, the throat dilated, and with the connectives longer than the anthers; hermaphro- dite flowers having the tube of the calyx ovate and pilose; stigma 4-6; fruit globose, smooth, variegated, rarely variegated; with white sweet-scented, but insipid flesh. ©. F. Native of Persia. And. bot. rep. t. 548. C. odoratissimus, Mench. med. 565.—Dill. hist. elth. 223. t. 177. f. 218.—Walth. hist. p. 136. t. 21. The fruit is variegated with green and orange, and oblong unequal green spots; when full ripe becoming yellow, and at length whitish. It has a very fragrant vinous musky smell, and a whitish, flaccid, insipid pulp. Doni is the Hebrew name of the fruit, rendered mandrake in Scripture, which is perhaps C. propheletaum.


9 C. Anzômon (Thunb. jap. p. 324.) plant rather pilose; stem trailing, striated; leaves cordate, somewhat lobed, stalked, rather pilose; flowers small; fruit oblong, glabrous, 6-10-furrowed; flesh firm. ©. F. Native of Japan. Fruit larger than a man's head. Flowers aggregate, on rather hispid stalks. This plant is cultivated every where in Japan for the sake of its fruit, which, when preserved, is sold under the name of Con- mon, and is a common food among the Japanese. It is also frequently eaten by the Dutch at Batavia, and is sometimes brought to Holland.

Common or Melon. Fl. trailing.

10 C. Seônum (Meyer, prim. eseq. p. 278.) leaves cordate-ovate, somewhat 5-lobed; fruit oval, pilose, acuminate at both ends. ©. F. Native of Guiana, in the island of Wac- hanana. C. anguria, Raesuch, but not of Lin. ex Steud. nom. It differs from our C. anguria in the leaves being subpalmate, with angular recesses, and in the fruit being globosely-elliptic.

Hedge Melon. Pl. trailing.

11 C. Linnæus (Boiv. journ. hist. nat. 2. p. 251. t. 87.) stem climbing, pentagonal; tendrils trifid, longer than the leaves; leaves cordate, palmate, acutish, serrulato; petioles short; flowers usually twin, almost sessile; female ones having an oblong-ovate calyx, and lanceolate segments; petals ovate, retuse; fruit ovate-oblong, lined with green, 10-ribbed. ©. F. Native of Cayenne.


12 C. Propheetaum (Lin. spec. 1436. aman. acad. 4. p. 295.) stem trailing, striated; leaves cordate, 5-lobed, denticulated; lobes obtuse; flowers axillary, 2-5-together, stalked; male ones with a campanulate calyx, and obovate petals; calyx of the female flowers globose at the base, 12-striped, and hispid; limb campanulate, crowned by teeth; fruit globose, echinatate, variegated, size of a cherry. ©. F. Native of Arabia. Jacq. herb. vend. 1. t. 9.—Blackw. herb. 589. C. grossularioides, Hort. The plant has a nauseous odour. The fruit equals the Colocynth in bitterness.


14 C. Anzôria (Lin. spec. 1436, but not of Raesuch. ex Steud. e 2
CUCURBITACEÆ. IV. Cucumis. V. Luffa.

nom.) stems rather filiform, cincinniferous; leaves palmately-sinu-nated, ciliate at the base, scabrous; flowers usually solitary, size of those of Brûnânia dioica; fruit globose, echinated, white. © F. Native of Jamaica. C. echinâts, Mâenâch, meth. p. 654.—Mill. icon. t. 33.—Plúk. phyt. t. 170. f. 3. Very like C. propectârum. The fruit of this kind of cucumber is eaten when green by the inhabitants of the West India Islands; but these are far inferior to our common cucumber. The fruit seldom grows so large as a pullet's egg, and is shaped like it; and the rind is closely beset with blunt prickles. It is frequently used in the sugar islands with other herbs in soups, and is esteemed an agreeable and wholesome ingredient in them. 


Var. a, Pastâcea (Ser. 1. c.) flesh of fruit firm, yellow, but not very watery. This is the Yellow-flushed Water Melon of the English, and the Pastoge of the French. 

Var. b, Jace (Ser. 1. c.) flesh very watery, reddish. This is the Red-flushed Water Melon of the English, Melon d'eau of the French, and the Jace of the Brazilians.

The water-melon is called wasser-melon in Germany, and cocomo in Italy. The plant serves both for food, drink, and physic to the Egyptians. The fruit is eaten in abundance during the season, which is from the beginning of May until the flowering of the Nile, that is, to the end of July. It is the only medicine the common people use in ardent fevers: when it is ripe or almost putrid, they collect the juice, and mix it with rose-water and a little sugar. The fruit should be eaten cautiously by Europeans, especially when taken in the heat of the day; but it is much used within the tropics, and in Italy. The fruit is large, green externally, white fleshed, reddish towards the centre, juicy, and refreshing, but not highly flavoured. It is generally considered the melon of the Jews, mentioned in various parts of the Bible. It requires nearly the same treatment as the common melon, but a larger frame to admit its more extended shoots to spread themselves.

Citral or Water Melon. Fl. May, Sep. Clt. 1597. Pl. tr. 16 C. muricâ'tus (Willd. spec. 4. p. 613.) leaves ciliate and angular, rather hoary; angles rounded; fruit cylindrical, muricated; male flowers aggregate, nearly sessile; female ones solitary. © F. Native of Tranquebar.

Watered Cucumber. Fl. June, Aug. Clt. 1817. Pl. tr. 17 C. megâcâ'rus; leaves palmate; fruit long, ovate, very full of anastomosing fibres, which look like net-work when the fruit is dried up. © F. Native of Sierra Leone.

Large-fruited Cucumber. Pl. tr. 18 C. fübé'scens (Willd. l. c. p. 614.) leaves ciliate, rather angular, acutish, sharply toothed, scabrous; fruit, elliptic, obtuse, pubescent, green, painted with more obscure narrow stripes. © F. Native country unknown. Fruit 3 inches long, elliptic, and an inch thick, obtuse at both ends, covered with fine down.

Downy Cucumber. Fl. July, Sep. Clt. 1815. Pl. tr. 19 C. maculâ'tus (Willd. spec. 4. p. 614.) leaves ciliate, obsolescetly angular, roundly obtuse, denticulated, scabrous; fruit elliptic, narrow at the base, glabrous, when young painted with broad green stripes; but when mature, white, variegated with green spots; connects much longer than the anthers. © F. Native of Guinea. Fruit smooth. Ser. diss. l. c. t. 3.

Spotted Cucumber. Fl. June, Aug. Clt. 1820. Pl. tr. 20 C. colócy'ntus (Lin. spec. 1435.) stems trailing, rather hispid; leaves ciliate-ovate, multifidly lobed, covered with white pili beneath; lobes obtuse; petals equalling the limb of the leaf; tendrils short; flowers axillary, solitary, pedunculate; female ones having the tube of the calyx globose, and rather hispid, crowned by a spreading campanulate limb, and narrow segments; petals small; fruit globose, glabrous, yellowish at maturity, with a thin solid rind, and very bitter flesh. © F. Native of Japan and Turkey.—Blackw. herb. t. 441.—Sabb. hort. t. 70.—Mor. hist. sect. 1. t. 6. f. 1. Fruit about the size of an orange. The colocynth is a native of Turkey. The fruit is about the size of an orange; its medullary part, freed from the rind and seeds, is alone made use of in medicine; this is very light, white, spongy, composed of membranous plates, of an extremely bitter, nauseous, acrimonious taste. The fruit is gathered in autumn, when it begins to turn yellow, and is then peeled and dried quickly, either in a stove or in the sun. Newmann got from 7600 parts, 1680 alcoholic extract, and then 2160 watery; and inversely 3600 watery and 224 alcoholic. 

The seeds are perfectly bland, and highly nutritious; and we learn from Captain Lydon, that they constitute an important article of food in Northern Africa. The extract of colocynth is one of the most powerful and useful of cathartics, but there is no more efficacious way of lessening its violence than by reducing its dose.

Colocynth or Bitter Cucumber. Fl. May, Aug. Clt. 1551. Pl. tr. 21 C. campechâ'aus (H. B. et Kunth, nov. gen. amer. 2. p. 125.) stem cincinniferous; leaves ciliate-roundish, minutely 5-lobed, toothed; lobes rounded, intermediate one the largest; male flowers racemose, few; tube of calyx villous; fruit unknown. © F. Native on the shores about Campeachy. Perhaps a variety of C. propectârum, according to Spreng. syst. 3. p. 47.

Campeachy Cucumber. Pl. tr. 22 C. paré'nnis (E. James, exped. rock. mount. 2. p. 345. and in isis. 1824. p. 235.) leaves triangularly ciliate, with undulated margins; tendrils trichotomous; lobes of calyx subulate; fruit orbicular, smooth, usually 4-celled; seeds ovate, gibbous, with an acute margin. 4. F. Native of cultivated in North America. Flowers about the size of those of Cucurbita Pépo. Fruit nearly sessile.

Parthenial Cucumber. Pl. tr. Cult. See culture of the Cucumber and Melon in the open air in the proper place, for the culture of the rest of the species.


1 L. furâ'vida (Cv. icon. 1. p. 7. t. 9.) stem furrowed; leaves cordate, 5-7-angled, scabrous; the angles acute and serrated; tendrils umbellate; fruit mucronate, not crowned by the limb of the calyx. © F. Native of the East Indies, the islands of Bourbon and France, as well as in many places on the western
CUCURBITACEÆ. V. LUFFA. VI. BENINCASA. VII. ERYTHROPALUM.

coast of Africa, in fields, hedges, and among bushes. Sims, bot. mag. 1638. *Oqjong Bulustru* is its Hindoo name.


1 L. **cordifolia** (Blume, bijdr. p. 929.) leaves cordate, acuminate, sharply toothed, scabrous; flowers dioecious; male ones rather umbellate; female ones solitary; fruit furrowed and wrinkled. © F. Native of Java, on the mountains, where it is called the natives *Aroy kajorajjan, Aroy Kalayar burriet*, but *Timuk* by the Hindoos.

**Heart-leaved Luffa.** Pl. tr.

2 L. **acuta** var. (Ser. in D. C. prod. 3. p. 302.) stem twisted; leaves cordate, somewhat 5-lobed, acutely toothed; tendrils undivided, or 2-3-cleft; fruit clavate, 10-angled, crowned by the linear calyce segments; the rind hard; seeds flat, roundish-oblong, black and shining at maturity. © F. Native of China, and plentiful in India near the habitations of the Indians. *Cucumis acutangulus*, Lin. spec. 1436. Jacq. Hort. vind. 3. p. 75, 74. ex Lam. dict. p. 27.—Rheed. Mal. 8. t. 7.—Rumph. Amb. 5. p. 408. t. 149. *Dringi* is the Hindoo name of the plant. Leaves like those of *Tussilago Petaétes* or *Vitis*, with the scent of *Datura stramonium*. Male flowers umbellate, female solitarious. Fruit insipid, but is eaten by the natives of India boiled or pickled.


3 L. **PLUKENETIA** var. (Ser. mss. in D. C. prod. 3. p. 302.) leaves cordate, doubly toothed; tendrils 2-3-cleft; fruit ovate, crowned by the marcescent limb of the calyx. © F. Native of the East Indies. *Cucumis acutangulus*, Lam. dict. 2. p. 74.—Pluk. phyt. t. 175. f. 1.

**Plukener’s Luffa.** Pl. tr.

5 L. **CAP'TU-PIECHA** var. (Ser. mss. in D. C. prod. 3. p. 303.) stem tetragonal; leaves cordate, roundish, somewhat 5-lobed, angular; sepals broadly ovate, acuminate; fruit oblong-elliptic, mucronate, lined with warts, and crowned by the calycine segments; seeds ovate. © F. Native of Malabar.—*Cattu-piecha*, Rheed. Mal. 8. p. 15. t. 8. Leaves nearly the size and form of those of *Althaea rosa*. Male flowers size of those of *Pétunia tenifolia*.

**Cattu-piecha Luffa.** Pl. tr.

6 L. **ÉÉVULU** (Mill. dict.) leaves roundish-cordate, lobed; lobes angular, cut at the base, with incumbent margins; tendrils simple; fruit obovate-clavate, 10-angled, crowned by the segments of the calyx. © F. Native of Arabia. *Momordica Luffa*, Lin. spec. 1433. L. *Arabam*, Alp. pl. *agap*. p. 190. t. 58.—Mor. hist. 2. p. 35. sect. 1. t. 1. f. 1.—Sabb. Hort. 1. t. 62. The Arabians call the plant *Liff* or *Lôvif*; they cultivate it, and it climbs upon the palm-trees, covering, and elegantly adorning their trunks. It is also cultivated largely in China and Cochín-china, if Lourier’s plant be the same (Coch. p. 590.). The fruit when young is made into a pickle, like the mango, but it has a disagreeable taste, and is not accounted very wholesome.


7 L. **PE'TOLA** var. (Ser. mss. in D. C. prov. 3. p. 303.) stems terete; leaves cordate, 5-7-lobed; lobes acute, serrated, middle one very long; tendrils bifid; segments of the calyx oblong and bluntish; petals obcordate, toothed, shorter than the calycine segments; fruit obovate-clavate, mucronate, woolly, afterwards furrowed, green, spotted with white, with watery flesh. © F. Native of the East Indies.—*Pétola*, Rumph. ampl. 5. p. 405. t. 147.

**Pétola Luffa.** Pl. tr.

8 L. **PENTANDRA** (Wall. cat. no. 6751.) leaves cordate, downy, 5-7-lobed, mucronately denticulated; middle lobe the longest; female peduncles 1-flowered, solitary; male ones umbellate? © F. Native of the East Indies, in Rungpur and Mangneri.

**Pentandrous Luffa.** Pl. tr.

9 L. **GRAVEOLENS** (Roxb. ex Wall. cat. no. 6752.) downy; leaves cordate, obsoletely lobed, and mucronately denticulated; flowers axillary, 2-4-together, on very short peduncles; fruit muricated. © F. Native of the East Indies, in Munikapur.

**Strong-scented Luffa.** Pl. tr.

10 L. **AMA-RA** (Wall. cat. no. 6754.) scabrous; leaves cordate, 5-7-lobed, middle lobe the longest, all acute; female peduncles 1-flowered, solitary; male ones racemose; fruit long, downy. © F. Native of the East Indies, in Rungpur and Gualpara.

**Bitter Luffa.** Pl. tr.

11 L. **HEDERAEA** var. (Wall. cat. no. 6755.) leaves cordate, palmately 5-lobed, mucronately denticulated; female peduncles 1-flowered, solitary; male ones racemose; fruit oblong. © F. Native of the Burman Empire, at Amerher, and below Melnoon.

**Ivy-like Luffa.** Pl. tr.

12 L. **ECHINATA** (Roxb. ex Wall. cat. no. 6756.) scabrous; leaves cordate, 5-lobed; lobes rounded, mucronately denticulated; female peduncles 1-flowered, solitary; male ones unumbellately racemose; fruit roundish, echinated by spinous. © F. Native of the East Indies, in Bandil, Deyra, and Dhooon.

**Echinated-fruited Luffa.** Pl. tr.

13 L. **SATPATI** (Hamilt. ex Wall. cat. no. 6757.) scabrous; leaves cordate, angularly toothed; peduncles racemose. © F. Native of the East Indies, in Nathpur, where it is called *Satpatia*.

**Satpatia Luffa.** Pl. tr.

14 L. **PA'VULA** (Hamilt. ex Wall. cat. no. 6758.) roughish; leaves 5-7-lobed; lobes acuminate, mucronately denticulated; female peduncles 1-flowered, solitary; fruit long, downy when young. © H. Native of the East Indies, in Puraniya.

**Small Luffa.** Pl. tr.

Cult. Sow the seeds in a hot-bed, and afterwards treat the plants as recommended for ridging out cucumbers.


**Lin. syst.** Polygámia, Monocéia. Flowers polygamous, monoecious, or solitary, yellow. Segments of the calyx short, broad, with undulated, toothed margins. Stamens in 3 bundles in the male flowers, divaricate. Petals obovate-roundish, curved, and undulated; anthers very irregular, with distant convolutions. Female flowers with the stamens as in the males, but usually nearly abortive. Stigmas very thick and irregular. Seeds with thickish margins.

1 B. cerífera (Savi, l. c.) plant very hairy, with a musky scent; leaves cordate, somewhat 5-lobed; lobes acutish and crenated; tendrils simple; fruit ovate-cylindrical, woolly, pen dulous, green. © F. Native of the East Indies. *Cucúbita cerífera*, Fisch. catt. hort. *Gorenk* ex *Savi*, l. c. B. *cylindrica*, Hortul. *Cumbulam*, Rheed. Mal. 8. p. 5. t. 3. The fruit is either short or long, but always covered with numerous fragrant hairs, and clothed with glaucous, glittering bloom. Flowers sometimes hermaphrodite.


Cult. Sow the seeds on a hot-bed in spring; and afterwards treat the plants as in ridging out cucumbers.

VII. ERYTHRÓPALUM (from *erythros, erythros*, red, and *palos*, palos, a shaking; application not evident). Blum. bijdr. p. 921. D. C. prod. 3. p. 303.

**Lin. syst.** Monocóia, Pentándria. Flowers monoecious, perhaps only from abortion. Limb of calyx obsoletely 5-toothed. Petals 5, ovate, alternating with the teeth of the
CUCURBITACEÆ. VIII. TURIA. IX. BRYONIA.

calyx, bicallous at the base inside. Stamens 5, opposite the petals, borne at the margin of the tube; filaments short; anthers erect, dehiscing at the side. Style short. Fruit clavate, 1-celled, 3-valved; valves fleshy, partition into two. Seed one coated.

1 E. scændens (Blum. bijdr. p. 922.) shrub climbing; leaves stalked, rather peltate, oblong, acuminate, quite entire, glabrous; peduncles branched, axillary; pedicels rather umbellate. Θ. Native of the East India Islands, on the mountains, particularly in Java, where it is called Aroy mut Ban kong by the natives.

Climbing Erythralpum. Shrub cl.

Cult. A mixture of loam, peat, and sand, or vegetable mould, will suit this plant; and cuttings will grow freely in the same kind of soil, if placed in heat.

VIII. TURIA (Arabic name of one of the species). Forsk. fl. egypt. p. 165. no. 35. Lam. dict. 8. p. 139. D. C. prod. 3. p. 303.


1 T. cylindrica (Forsk. l. c.) stems twining, 5-angled, scabrous; leaves palmate; lobes toothed; tendrils trifid; fruit terete, attenuated at both ends, villous, crowned by the style and calyx.—Native of Arabia Felix. Gmel. syst. nat. 1. p. 403. ex Lam. dict. 8. p. 140. Flowers yellow.

Cylindrical-fruited Turia. PIl. tw.

2 T. Lejôa (Forsk. l. c. p. 165.) stem striated, mealy; leaves 3-lobe, cordate at the base; lobes angular, middle one longest, but not lobed; fruit conical, glabrous; seeds size of a small pea. Θ. F. Native of Arabia. Gmel. syst. nat. 1. p. 403. ex Lam. dict. 8. p. 140. Lejôa is the Arabic name of the plant. Flowers green.

Lejôa Turia. Pil. tw.

3 T. Cordà (Lam. dict. 8. p. 140.) leaves cordate, angular, ciliated, 2 inches long.—Native of Arabia Felix. The fruit, when mature, opens at top by a lid, and ejects its seeds with force. Forsk. fl. egypt. p. 166.

Cordate-leaved Turia. Pl. trailing.

4 T. Gîjef (Forsk. l. c. p. 166.) stem 6-angled, scabrous; leaves 3-lobe, denticulated, scabrous on both surfaces; fruit ovate, 10-furrowed, glabrous.—Native of Arabia. Flowers small, green. Fruit smaller than a nut, greyish at maturity, dehiscing, with revolute valves. Gîjef is the Arabic name of the plant.

Gîjef Turia. Pl. trailing.

5 T. Môghadd (Forsk. egypt. l. c.) stem terete, smooth; leaves 3-lobe, quite entire; lateral lobes somewhat 3-lobe; fruit oval-oblong, quite glabrous.—Native of Arabia Felix. Flowers large, white. Immature fruit green, spotted with white, but when mature yellow and edible. Môghadd is the Arabic name of the species.

Môghadd Turia. Pl. trailing.

Cult. See Cucurbita, p. 41. for culture and propagation.


Lin. syst. Monœcia, Polygaládpîpha. Flowers monoecious or dioecious. Petals joined at the base. Male flowers with a 5-toothed calyx. Stamens in 3 bundles; anthers flexuous. Female flowers with a trifid style. Fruit ovate or globose, smooth; perhaps always few-seeded. Seeds ovate, hardly compressed, more or less marginated. Tendrils simple, rarely forked.

* Leaves angular.

1 B. rostráta (Rottl. nov. act. berol. 4. p. 212. and Wild. spec. 4. p. 616.) stem filiform, furrowed; leaves cordate, obtuse, denticulated, scabrous; peduncles axillary, solitary; fruit ovate, angular, acuminate. Ω. F. Native of Tranquebar. Fruit the size of a pea. Plant scabrous, but when cultivated it becomes smooth in every part. The root of this species is prescribed in India internally in electuary, in cases of piles.

Rostrate-fruited Bryonia. Pl. cl.

2 B. Perrotetta (Ser. miss. in D. C. prod. 3. p. 304.) tendrils simple, capillary; leaves broadly cordate, unguulate, sessile, villous, scabrous, with undulated margins; male flowers twin, on pilose peduncles; female flowers sessile; fruit ending in a long taper point, sessile, clothed with very long and very numerous hairs; seeds compressed, bay-coloured, granularly edged, and covered with adpressed hairs. Ω. S. Native of Senegal. Flowers white.

Perrotetis Bryonia. Pl. cl.

3 B. mucronáta (Blume, bijdr. p. 923.) leaves cordate-ovate, mucronate, rather angular, and repandly denticulated, scabrous from dots above, and smooth beneath; flowers in fascicles, dioecious; berry oval. Ω. S. Native of the East Indies, on the mountains, where it is called Parihangie by the natives.

Var. β, denticulata (Ser. in D. C. prod. 3. p. 304.) leaves all undivided, obsoletely denticulated; fruit usually contracted in the middle. Ω. S. Growing among bushes about Buitenzorg in Java.

Mucronate-leavedd Bryonia. Pl. cl.

4 B. scabra (Thunb. prod. 13.) leaves cordate, angular, toothed, beset with callous dots above and with pili beneath, therefore scabrous on both surfaces; flowers umbellate; fruit globose; seeds smooth. Ω. G. Native of the Cape of Good Hope. The tender shoots of this plant are aperient, having been previously roasted.


5 B. verrúcosa (Ait. hort. kew. ed. 1. vol. 3. p. 285. ed. 2. vol. 5. p. 246.) leaves cordate, angular, beset with callous dots above as well as on the veins above; tendrils usually simple; fruit globose, nearly sessile. Ω. G. Native of the Canary Islands. Wild. spec. 4. p. 616. Fruit the size of a sloe.


6 B. scabráta (Blum. bijdr. p. 923.) leaves cordate, cuspidate, undivided, and somewhat angular, denticulated, scabrous above, rough on the veins beneath; flowers monoecious; umbels on short peduncles; fruit globose.—Native of the East Indies, on the mountains, particularly in Java. Cucurbita scabra, Blum. cat. hort. built. no. 105. Aroy korreg hottock of the Javanese. Allied to B. scabra and B. Japonica.

Rough Bryonia. Pl. cl.

7 B. punctáta (Thunb. prod. 13.) leaves cordate, angular, callous above, and pilose beneath; peduncles 1-flowered. Ω. G. Native of the Cape of Good Hope.

Dotted-leaved Bryonia. Pl. cl.

8 B. repanda (Blum. bijdr. p. 923.) leaves cordate, cuspidate, repandly denticulated, scabrous above and puberulous beneath; umbels peduncled; flowers dioecious; berries globose.

Dotted-leaved Bryonia. Pl. cl.
Y. S. Native of Java, in the higher mountain woods of Bureangrang.

Reapand-leaved Bryony. Pl. cl.

9 B. cordata (Thunb. in Hoffm. phyt. blatt. 5. ex Pers. ench. 2. p. 594.) leaves cordate, scabrous, dentilicated; flowers axillary, twin. Y. S. Native country unknown. B. Thunbergiana, Dietr. ex Steud. nom.

Heart-leaved Bryony. Pl. cl.

10 B. angulata (Thunb. prod. 13.) leaves 5-angled, scabrous on both surfaces; flowers umbellate. Y. G. Native of the Cape of Good Hope.

Angular-leaved Bryony. Pl. cl.

11 B. leucocarpa (Blume, bijdr. p. 924.) leaves ovate-oblong, acuminate, deeply cordate at the base, somewhat repandly dentilicated, beset with rough dots above, paler beneath; peduncles usually thin, few-flowered; flowers monocious; berries globose. Y. S. Native of Java, at the foot of Mount Salak.

White-fruited Bryony. Pl. cl.

12 B. acutangula (Thunb. prod. 13.) leaves angular, entire, smooth, glabrous. Y. G. Native of the Cape of Good Hope.

Acute-angled-leaved Bryony. Pl. cl.

13 B. grandis (Lin. mant. p. 126.) leaves cordate, lobed, beset with callous dots above and glandular at the base beneath: terminal lobe obtuse; tendrils simple; fruit oblong, prickly at the base; prickles few, reflexed (ex icon. Burm.) reddish. Y. S. Native of the East Indies. Lour. coch. 595.—Rumph. am. 5. t. 166. f. 1. Peduncles 1-flowered. Flowers large, white, androgynous. Berries red.


14 B. Moimoi (Ser. mss. in D. C. prod. 3. p. 305.) leaves cordate, 5-angled, acutely dentilicated; terminal angle elongated and acute; tendrils simple; fruit prickly at the base; prickles few, reflexed; fruit red. Y. S. Native of Ceylon and of Senegal, in hedges, in which last place it is called Moimoi, according to Adanson. Seneg. p. 159. Burm. zeyl. t. 19. f. 1. Flowers large, white.

Moimoi Bryony. Pl. cl.

15 B. geminata (Blume, bijdr. p. 924.) leaves ovate-cordate, or somewhat hastate, blumish, obsoletely dentilicated, scabrous from dots; flowers pedunculate, twin, monocious; berries oval. Y. S. Native of Java, about Linga-jattie at the foot of Mount Tjiemei, where it is called Wawalalan by the natives.

Twine-flowered Bryony. Pl. cl.

16 B. Cochinchinesis (Lour. coch. 595.) leaves 5-angled, rough; flowers monocious, large, axillary, solitary, on long peduncles; fruit ovate, acutish at both ends, 10-angled, red, smooth; seeds oblong-ovate, compressed, smooth. Y. G. Native of Cochinchina, in hedges. Flowers white.

Cochin-china Bryony. Pl. cl.

17 B. Abyssinica (Lam. dict. 1. p. 497.) stem villous at the apex; tendrils simple; leaves cordate, toothed, large, soft, nearly glabrous; upper ones angurally-lobed; petioles and peduncles very villous; flowers yellow, fruit unknown. Y. G. Native of Abyssinia and neighbouring parts of Africa.

Abyssinian Bryony. Pl. cl.

18 B. Japonica (Thunb. jap. p. 525.) leaves cordate, undivided, and angular, toothed, green above, and beset with very minute hairs; pale beneath, and beset with scaly dots. Y. G. Native of Japan, near Nagasaki.

Japan Bryony. Pl. cl.

19 B. sagittata (Blume, bijdr. p. 925.) leaves on short petioles, sagittate, glaucous beneath; male peduncles subumbellate, female ones 1-flowered. Y. S. Native of Java, about Batavia, in humid bushy places. Allied to B. heterophylla and B. umbellata.

Sagittate-leaved Bryony. Pl. cl.

20 B. Bluemei (Ser. mss. in D. C. prod. 3. p. 305.) leaves ovate-cordate, or cordately-sagittate, acuminate, repandly dentilicated, scabrous; flowers monocious, male ones umbellate, female ones solitary; berries oblong. Y. S. Native of Java, near Batavia, among bushes. B. heterophylla, Blum. bijdr. p. 923., but not of Steud. Allied to B. marginata.

Blume's Bryony. Pl. cl.

21 B. marginata (Blum. bijdr. p. 924.) leaves cordate-ovate, acuminate, rather angular at the base, obsoletely dentilicated, margined, rough; umbels on long peduncles; berries oblong. Y. S. Native of Java, about Rompoin, where it is called Korreronteng Kambyen by the natives.

Margined-leaved Bryony. Pl. cl.

22 B. umbellata (Klein. ex Wildl. spec. 4. p. 618.) leaves oblong-cordate, glabrous on both surfaces, dotted above, remotely dentilicated, rather angular at the base: upper ones hastately 2-lobed; peduncles axillary, umbellate; fruit unknown. Y. S. Native of the East Indies. Flowers white. Berries red.

Umbellate-flowered Bryony. Pl. cl.

23 B. amplexicaulis (Lam. dict. 1. p. 496.) stem angular, glabrous; leaves smooth, cordate, rather angular, stem-clasping, dotted, and glaucous beneath; upper leaves generally narrowly 3-lobed; flowers small, solitary, axillary, pedunculate; fruit solitary, acuminate, smooth. Y. S. Native of the East Indies. Flowers white.

Stem-clasping-leaved Bryony. Pl. cl.

24 B.? heterophylla (Stead. nom. p. 123.) lower leaves cordate, upper ones cordate or dentilicated; tendrils solitary; flowers solitary, pedunculate, hermaphrodite; fruit scarlet; seeds blackish. Y. S. Native of Cochinchina and China. Solena heterophylla, Lour. coch. p. 514. Flowers pale.

Variable-leaved Bryony. Pl. cl.

25 B. pubescens (Poir. dict. suppl. 1. p. 731.) stem pilose; leaves cordate, somewhat 5-lobed; lobes acute, with spiny teeth; petioles villous; tendrils long, much branched; flowers small, white, downy, umbellate. Y. G. Native of the Levant. Flowers whitish.

Downy Bryony. Pl. cl.

26 B. Madaraspatana (Berg. pl. cap. p. 351.) stem angular, cirrhose, glabrous; leaves cordate, oblong, acuminate, toothed, scabrous from small callous dots above, hairy beneath; stipulas awl-shaped, solitary; flowers twin, axillary. Y. S. Native of the East Indies. Cucumis Madaraspatan, Lin. spec. 1438.—Plnt. alm. t. 170. f. 2.

Madras Bryony. Pl. cl.

27 B. hederifolia (Jacq. fragm. 73. no. 230. t. 113.) dioecious; root thick, fleshy; stem terete, glabrous, with the internodes distant; tendrils very long, simple; leaves cordate, somewhat 5-angled, quite entire, rather wrinkled above, and hispid beneath; racemes simple, many-flowered; calyce segments of the male flowers lanceolate and acute; lobes of the corolla ovate, acute, yellowish. Y. S. Native of Tenerife. Flowers yellowish.

Tender-leaved Bryony. Pl. cl.

28 B. Altheoides (Ser. mss. in D. C. prod. 3. p. 306.) stem silifrom, furrowed, rough, with the internodes longer than the leaves; tendrils simple, narrow, and spirally twisted; leaves cordate, lanceolate, on short petioles, somewhat 5-angled, bluntly toothed, clothed with a kind of roughomentum beneath; terminal lobe elongated; fruit thin, glbose, sessile, smooth; seeds wrinkled from dots, girded by a slender zone. Y. S. Native of the island of Timor. Flowers white.

Altheo-like Bryony. Pl. cl.

29 B.? pedunculosa (Ser. mss. in D. C. prod. 3. p. 306.)
CUCURBITACEÆ. IX. Bryonia.

plant pilose; stem filiform, striated, having distant internodes; tendrils bifid; leaves on long petioles, cordate, long-acuminate, crenately toothed, beset with long, distant hairs; flowers large, in loose racemes; peduncles longer than the leaves; pedicels long, pilose; fruit unknown. 2. G. Native of Nipaul.

Long-peduncled Bryonia. Pl. cl.

30 B. Rue'Èdri (Blum. bijdr. p. 925.) leaves on short petioles, oblong, cordate, rather angular at the base, remotely dentilucent, smoothish, dotted above, glaucous beneath; upper leaves hastately 3-lobed; male pedicels disposed in dense racemes, 1-flowered, bearing one bractea in the middle of each, female pedicels solitary, 1-flowered. 2. S. Native of Java and Malabar, on the mountains. Rheed. mal. 8. t. 26. The plant is called Aroy-hui-Walleh by the natives of Java.

Rheedie's Bryonia. Pl. cl.

* * Leaves lobed.

31 B. effige'À (Rottl. in nov. act. berol. 4. p. 223.) stem furrowed, glabrous; leaves coriaceous, somewhat cordately 3-lobed, rather obtusely dentilucent, rough: lateral lobes somewhat 2-lobed, intermediate one elongated, acuminate; flowers monoecious, male ones umbellate, female ones solitary; berries globose. 2. S. Native of Java, about Rimpin, in corn fields. Willd. spec. 4. p. 610.—Blum. bijdr. p. 955. Coro-konloeng of the natives of Java. The root of this species was once supposed to be the famous colomba-root, to which it approaches very nearly in quality.


32 B. scabre'Èll (Lin. suppl. 424.) stem mucrinated, hispid; leaves 3-lobed, toothed, callously hispid on both surfaces: lateral lobes dilated, angular, intermediate one elongated, petiolo hispid; flowers axillary, nearly sessile, numerous; fruit nearly globose, beset with a few obverse stripes; seeds mucrinated. O. F. Native of the East Indies. Willd. spec. 4. p. 619. Baboon tengang of the Hindoos. Flowers yellow. Habit of Melothria.

Var. a. leaves smaller, seeds tuberculated. Blume, l. c.

Var. b. leaves coarsely toothed, as in the preceding variety, and beset with setaceous stripe; berries elliptic-globose. Blume, l. c.


33 B. latebra'sa (Ait. hort. kew. ed. 1. vol. 3. p. 384. ed. 2. vol. 5. p. 347.) leaves somewhat 3-lobed, pilose, attenuated at the base, hardly cordate, running down the petiole on one side only. 2. G. Native of the Canary Islands. Flowers whitish.


34 B. triloba'â (Thunb. prod. 13. but not of Lour.) leaves 3-lobed, smooth above, and scabrous beneath. 2. G. Native of the Cape of Good Hope.

Three-lobed-leaved Bryonia. Pl. cl.

35 B. stipula'ceâ (Wild. spec. 4. p. 630.) stem shrubby? furrowed; tendrils trifid; leaves cordate, 3-lobed, toothed, glabrous, smooth on both surfaces; stipules roundish, concave, serrated; flowers monoecious, solitary; fruit ovate, acutish, glabrous, yellow, 5-celled, many-seeded. 2. G. Native of Cochinchina. B. triloba, Lour. coch. p. 595. but not of Thunb. B. agréatis, Rausch. ex Steud. nom. phan. p. 123. Flowers white.

Var. b. perpusilla (Blum. bijdr. p. 926.) leaves membranous, deeply cordate, 3-lobed, oblong, deeply dentilucent, scabrous from dots above, smooth beneath: lateral lobes rather angular, intermediate one elongated, acuminate; flowers of umbel, monoeocious; fruit pea-formed. 2. S. Cucúrbita perpusilla, Blum. cat. hort. biiit. p. 105. Native of Java, in the shady parts of mountains. The plant is called Hampsru Bogor, and Korres koda by the Javanese.

Large-stippled Bryonia. Pl. cl.

36 B. America'À (Lam. dict. 1. p. 498.) root thick; stem angular; leaves cordate, 3-lobed, angular, wrinkled, with spine-

formed teeth; lobes of corolla narrow, white inside; fruit ovate, red, few-seeded; seeds compressed. 2. S. Native of the Antilles.—Plum. spec. 3. icon. p. 66. ex Willd. spec. 4. p. 629.

American Bryonia. Pl. cl.

37 B. Gine'Èe'ss (Linn. spec. p. 1438.) leaves cordate, obl., 5-lobed, toothed, scabrous, bidentate at the top of the petiole. 2. C. S. Native of Sierra Leone. Flowers red.

Guinea Bryonia. Pl. tw.

38 B. cordifòlia (Lin. spec. p. 1438.) leaves cordate, obl., 5-lobed, toothed, scabrous, bidentate at the top of the petiole. 2. S. Native of Ceylon. Flowers white. The root of this plant is considered cooling, and to possess virtues in complaints requiring expectorants.

Heart-leaved Bryonia. Pl. cl.

39 B. a'Àba (Lin. spec. p. 624.) stem climbing; leaves cordate, 5-lobed, toothed, scabrous from callous dots; terminal lobe hardly longer than the rest; tendrils twin; flowers racemose, monoecious; stamens distinct; fruit globose, black; seeds unknown. 2. H. Native of Europe, in woods and hedges, as in Sweden, Denmark, and Carniola. Lam. ill. t. 769. Fl. dan. t. 813. Flowers whitish or yellowish.


40 B. dio'Èca (Jacq. fl. austr. t. 199.) stem climbing; leaves cordate, palmately 5-lobed, toothed, scabrous from callous points; terminal lobe the longest and very dissimilar, perhaps always; tendrils simple; flowers racemose, dioecious; filaments pilose at the base; fruit globose, red; seeds obovate-globose, rather compressed, grey, variegated with black. 2. H. Native of Europe, in hedges; plentiful in England, particularly in calcareous counties. Smith, engl. bot. t. 439. Mill. fig. t. 71.—Blackw. herb. t. 37. B. alba, Hud. 437. Wood. med. bot. t. 189. Flowers white, with elegant green ribs and veins. The root grows sometimes to an immense size; it is a famous hydrogogue, and highly purgative and acrid, a drachm of it in substance, or half an ounce of it infused in wine, is said to be a full dose; others give 2 draçhms in dropsical cases. As a purgative it has great effect on some, while on others it has hardly any; but it frequently becomes diuretic and diaphoretic. A cold infusion in water is used externally in sciatic pains. A cataplasm of it is a most powerful discutient. The best season to take up the roots for use in is autumn. It is called in English, white wild vine, wild hops, white Bryony, wild nettle, Tetter-berry.

Var. b. fàte (Ser. miss. in D. C. prod. 1.) leaves deeply lobed; lateral lobes nearly linear, terminal one lanceolate, bidentate laterally; fruit and seeds yellow. 2. H. Native of Auvergne, in hedges and woods.


41 B. xifïda (Link. enum. 2. p. 404.) leaves cordate, 5-lobed, apiculated, scabrous from hairs; peduncles umbelliferous. 2. H. Native country unknown.


42 B. Car'Èree (Lin. spec. 1439.) root fleshy; stems climbing; leaves cordate, 5-lobed, quite entire, ciliated, mucrinated on both surfaces; terminal lobe the largest; tendrils simple, spiral; flowers dioecious; female ones axillary, twin; fruit globose, red; seeds smooth, obovate. O. H. Native of Candia. Desf. coroll. p. 91. t. 7. ann. mus. 12. t. 17. Flowers pale.


43 B. quinque'èlora (Thunb. prod. 13.) flowers dioecious; leaves 5-lobed, scabrous above; lobes very blunt, mucronately toothed, auricled behind; tendrils simple; peduncles of male flowers 1-flowered, twin; calyx broadly campanulate, and acutely toothed; corolla campanulate, half 5-cleft; fruit unknown. 2. G. Native of the Cape of Good Hope. Ker, bot. reg. 82. Sims, bot. mag. 1820. Flowers brown.


**C. Sicyos** (from sicyos, sicyos, the Greek name for the cucumber; resemblance and affinity). Lin. gen. no. 1481. Juss. gen. no. 394. Gärn. fruct. 2. p. 45. t. 88. f. 1. Sicyoides, Tourn. inst. 103. t. 28.
CUCURBITACEÆ. X. SCIYOS. XI. ELATERIUM.

LIN. SYST. Monécia, Polyadélphus. Flowers monocious; male ones with a 5-toothed calyx, and a 5-parted corolla; teeth of calyx subulate. Filaments 3? or more probably 5, in 3 bundles. Female flowers with a trifid style, and a thickish trifid stigma. Fruit 1-seeded from abortion, usually beset with spines. Seed obovate. Male and female peduncles many-flowered, usually rising together from the same axil.

1 S. angulatus (Lin. spec. 1438.) leaves cordate, angular, denticulated, scarious; lobes 3-5, acuminate; tendrils umbellate; male flowers in corymbose heads, each head on a long common peduncle; female flowers sessile, in bundles at the tops of the peduncles; fruit ovate, spinaceous, and tomentose; seeds truncate at the base, and very blunt at the apex. O. F. Native of North America. Lam. ill. t. 796. f. 2.—Dill. elth. 58. t. 51. f. 59. P. 1710. Scindia 1832. Pl. tr.

2 S. Bryonyfólia (Moris. hor. taur. sem. 1831.) leaves cordate and angular, denticulated, hispid below; teeth of calyx obsolete; capsule clamy and warted. O. S. Native country unknown. This species differs from S. angulatus and S. parviflorus in the stem being hardly pilose about the joints, the rest smooth; in the peduncles being short, the flowers umbellate; male ones 5-8 pedicellate, female ones almost sessile.


3 S. parviflorus (Wilds. spec. 4. p. 626.) branches glabrous; leaves cordate, rather angular, denticulated, roughish; tendrils triad; male flowers racemose, on long pedicels: female ones in sessile capitule umbels; fruit crowned by the permanent calyx, size of an orange; seeds unknown. O. F. Native in the temperate parts of mountains about Quito, near Chillo, at the height of 4000 feet. Not of Mexico, H. & B. et Kunth, nov. gen. amer. 2. p. 119. Flowers whitish. Fruit rarely solitary.


4 S. Baderóa (Hook. et Arn. in bot. misc. 3. p. 234.) leaves cordate, angular, minutely denticulated, glabrous on both surfaces; angles acuminate; lobes at the base of the leaf lying over each other; tendrils triad; flowers few, capitate in both sexes; female peduncles one-half shorter than the male ones; fruit ovate while young. Y. & G. Native about Valparaíso. Baderón Bryoniéfólia, Bertero.


5 S. Pentanórdus (Wall. cat. no. 6682.) leaves cordate, denticulated; flowers racemose; racemes numerous, sometimes aggregated, and branched. Y. & S. Native of the East Indies.

Pentandrous Single-seeded Cucumber. Shrub cl.

6 S. De'pet; leaves broadly cordate, 5-lobed; lobes acuminate, middle lobe the longest; margins acutely denticulated, rough on both surfaces from conical hairs; male racemes elongated; fruit glomerate, ovate, nearly glabrous, but beset with strong retrograde prickles. O. S. Native of Mexico, near Jalapa. Flowers smaller than those of S. angulatus, but larger than those of S. parviflorus. Sicyos, nov. spec. Schlecht. et Cham. in Linnaea. vol. 5. p. 88. Seeds the size of those of Citrus médica.

Deppe's Single-seeded Cucumber. Fl. tr.

7 S. Acuus (Rafin. fl. lud. p. 113.) climbing; leaves lobed; fruit glomerate, ovate, acute, bristly; bristles echinate, interwoven. O. F. Native of Louisiana.


8 S. Microphyllum (H. B. et Kunth, gen. et spec. amer. 2. p. 119.) branches roughish; leaves sinuately-cordate, 7-lobed, denticulated, roughish; tendrils smoothish, trifid; male flowers on long peduncles and pedicels; female flowers in crowded, nearly sessile heads; fruit echinated from bristle-formed hairs, size of an apple seed; seeds unknown. O. F. Native of Mexico, on the burning Mount Jorullo, at the height of 1620 feet. Small-flowered Single-seeded Cucumber. Fl. July, Sep. Cpt. 1833. Pl. tr.

9 S. Pachyca'rus (Hook. et Arnott, in Beech. bot. p. 83.) branches glabrous; leaves cordate, 5-7 lobed, denticulated, glabrous above and papillosé, scarous beneath; tendrils glabrous, trifid; male flowers in panicles; female ones in crowded heads; fruit ovate, rostrate, unarmored. O. F. Native of the Island of Oahu, on the Diamond Hill among the volcanic rocks. Allied to S. microphylus.

Thick-fruited Single-seeded Cucumber. Fl. prostrate.

10 S. vitifólius (Wild. spec. 4. p. 626.) the whole plant clothed with very fine clanny down; leaves cordate, with a roundish recess, 5-lobed, toothed. O. F. Native country unknown. Flowers yellow, twice the size of those of S. angulatus.


11 S. Lactanótaus (Lin. spec. 1459.) stem glabrous; leaves cordate, palmate, glabrous above, but echinated from stiff hairs beneath; lobes lobulate; petals short; tendrils triad; male flowers somewhat panicked; female ones glomerate, sessile; peduncles short; fruit very spiny. O. F. Native of South America.—Plum. ed. Burm. pl. amer. t. 243. Flowers yellow.


12 S. Triqueter (Moc. et Sesse, fl. mex. ined. ex D. C. prod. 3. p. 309.) stem bluntly furrowed; leaves cordate, 5-lobed; lobes broad, obtuse, somewhat denticulated; tendrils much branched; calycine and corolline lobes 3? male flowers racemose, pedunculate, aggregated subverticillate; female flowers subumbellate;fruit elongated, unarmored, triquetrous; seed oblong-cylindrical. O. F. Native of Mexico, in Chilapp. Flowers yellow. Fruit 6 lines long, acuminate, somewhat 5-winged.


Cul. Sow the seeds in the hot-bed in spring, and treat the plants as directed for Gourds, p. 42. Not worth growing except for curiosity.


LIN. SYST. Monécia, Monádiophës. Flowers monocious, white or yellow; male ones disposed in racemes or corymbs; calyx petaloid, campanulate, with hardly conspicuous teeth, and with the corolla hardly gamopetalous. Female flowers solitary, or rising from the same axis with the males. Calyx elongated, petaloid, echinated at the base, and girding the carpels; neck filiform, more or less elongated, at length dilated, and bearing the corolla and stamens. Style thick; stigma capitate. Capsule coriaceous, reniform, echinated, 1-seeded, 2-3-valved, many-seeded, opening elastically, and ejecting the seeds.

1 S. Geméllum (D. C. prod. 3. p. 310.) leaves cordate narrowly sub-sagittate, somewhat 3-angled, with the middle angle acuminate; tendrils bifid; male flowers in long racemes; neck of calyx long, campanulate; petals ovate, acutish; fruit curved, 3-celled; prickles distant. O. F. Native of Mexico. Moc. et Sess. fl. mex. icon. ined.

Twin-tendrilled Squirtng Cucumber. Pl. cl.

2 E. Carthagéne'sse (Lin. spec. 1375.) leaves cordate, angular, denticulated, petaloid, roughish above; flowers white, sweet-scented; male ones in panicles; female ones solitary; tube of calyx terete above the ovarium, not dilated at the apex; petals linear-lanceolate, acute; fruit kidney-shaped, hispid;
seeds winged? flat, tridentate at the base, ex Kunth. ○ F. Native of South America, in the hot regions of the province of Caracas, on the shore of Lake Tacarigua, in Lagunade Valencia; and in the Island of Cura, at the height of 690 feet. Lam. ill. t. 745. Jacq. amer. 241. t. 154. icon. pict. p. 118. t. 232. Corolla yellow. Fruit size of an olive.


3 E. TANMOIDES (Willd. unnum. p. 950. leaves cordate, acum- 

inated, remotely serrated, smoothish above, and hairy beneath; flowers yellowish; female flowers having the tube of the calyx campanulate above the ovary; petals 4-7, ovate; style very short; stigma large, flat; fruit 2-valved, few-seeded; seeds unknown. ○ F. Native of Mexico. E. hastatum, Brouss. but not of H. B. et Kunth.


4 E. HASTATUM (H. B. et Kunth, nov. gen. amer. 2. p. 120.) leaves cordately sinuate, triangularly hastate, acuminate, den- 

ticulated, rather searous above, and glabrous beneath; tendrils simple or bifid; male flowers racemose, pedicellate, minute; fruit oblong, reniform, muricated, 2-valved, size of an olive; seeds 6, roundish, compressed, tridentate at the base. ○ F. Native of Mexico, on the declivities of the burning Mount Jorullo, and the temperate regions near Patzcuara, at the height of 1620 or 3390 feet. Habit of Melothria pendula, according to Kunth.

Hastate-leaved Squirtin Cucumber. Pl. tr.

5 E. QUADRIFIDUM (D. C. prod. 3. p. 310.) stem, peduncles, petioles, and tendrils downy; leaves cordate, orbicular, 7-angled; tendrils bifid, pilose; male flowers umbellate; calyx long, tubular, articulated towards the base, and dilated at the apex, with the limb hardly evident; petals 4, linear-lanceolate, acute; female flowers hardly pedunculate, like the male ones; style fili- 

corn, crowned by an ovate stigma; fruit very pilose. ○ F. Native of Mexico. Moc. et Sesse, fl. mex. icon. ined. Flowers white.

Quadridid Squirtin Cucumber. Pl. tr.

6 E. BRACHYSTACHYUM (D. C. prod. 3. p. 310.) leaves 3- 

lobed, quite entire, ciliate; middle lobe oblong, acuminate; flowers cream-coloured; male ones in spikes; tube of calyx campanulate at the apex; female flowers with a very gibbous hispid calyx, and a short neck, which is campanulate at the apex; capsule oblique, incurved, echninated with 8-10 long soft prickle, 2-3-valved, larger than those of the other species. ○ F. Native of Mexico.

Short-spiked Squirtin Cucumber. Pl. tr.

7 E. TORSIVATUM (D. C. prod. 3. p. 310.) leaves somewhat peltately cordate, 5-lobed, denticulate; terminal lobe the longest, and acuminate; tendrils trifid; flowers greenish-white; male ones in racemes: female ones solitary, echninated at the base, with the neck long and bell-shaped at the apex; petals oblong, bluntest; capsule oblong, 2-valved, acuminate, echninated, with soft prickles. ○ F. Native of Virginia. Fl. mex. icon. ined.

Collared Squirtin Cucumber. Pl. tr.

8 E. TRIFOLIATUM (Spreng. syst. 3. p. 47.) leaves ternate, cut. ○ F. Native of Virginia.

Trifoliate-leaved Squirtin Cucumber. Pl. tr.

Cult. Sow the seeds in a hot-bed in spring, and put the plants out as directed for Gourds, p. 42.


Lin. syst. Monoc'ia, Polygadélphia. Flowers monoeocious, white or yellow, on filiform unibracteate peduncles, perhaps always. Male flowers with a 5-cleft calyx, and a very short tube. Corolla 5-parted. Stamens in 3 bundles; anthers con- 

nate. Female flowers with 3 sterile filaments, or probably 5, joined in 3 bundles, a trifid style, and a 3-celled ovary. Fruit usu- 

ally muricated, (perhaps always) opening elastically at maturity, and expelling the seeds. Seeds compressed, reticulated, perhaps always.

1 M. BALSA'AMICA (Lin. spec. 1453.) leaves palmately 5-lobed, 

toothed, glabrous, shining; fruit roundish-ovate, attenuated at both ends, angular, tuberculated, orange-coloured, splitting ir- 

regularly and laterally; bracteae cordate, toothed, in the middle of the peduncle; aril red. ○ F. Native of the East Indies. Lam. ill. t. 794. f. 1. Charantia, Lob. pemp. t. 670.—Ludvo. ect. t. 127.—Blackw. herb. 6. t. 539. a. b. Flowers yellow. This plant is famous in Syria for curing wounds. They cut open the unripe fruit, and infuse it in sweet oil, and expose it to the sun for some days until the oil becomes red. It is applied to a fresh wound on cotton. The Syrians esteem this next to balsam of Mecca. The plant is also used to form injuries or plasters.


2 M. MURICA'TA (Willd. spec. 4. p. 602.) leaves somewhat palmately 7-lobed, cordate at the base; lobes remotely toothed, acuminate; tendrils almost simple; fruit ovate, muricated; bracteae cordate, quite entire. ○ F. Native of the East Indies. Pavel, Rhed. mal. 8. t. 10.


3 M. CHARANTIA (Lin. spec. 1438.) leaves somewhat pal- 

mately 7-lobed, dentate, rather hairy; tendrils downy; fruit ob- 

long, acuminate, angular, tuberculated, copper-coloured or red; pulp yellow and soft; bracteae cordate, quite entire, below the middle of the pedicle; seeds oblong, tuberculated (ex Rumph). Arillus of a reddish blood-colour. ○ F. Native of the East Indies. Sims, bot. mag. t. 2455.—Rheed. mal. 8. p. 17. t. 9.

Papareh of the Hindoos. Corolla yellow. Seeds wrinkled very irregularly, yellow bay-coloured, and irregularly tubercu- 

lated towards the margin. Allied to the preceding species, but very distinct.

Var. β, abbreviata (Ser. in D. C. prod. 3. p. 311.) fruit shorter than that of the species, very venticose, beset with acute tubercles. M. Zeylánica, Mill. dict. 3. ex Lam. dict. 4. p. 239.


4 M. ROXBURGH'ANA; downy; leaves cordate, palmately 7-9-lobed, and lobately toothed; tendrils simple; peduncles 1- 


5 M. SENEGAL'ENSIS (Lam. dict. 4. p. 239.) leaves deeply palmate, somewhat serrated, pale and villous beneath; fruit ovate, mucronate, tuberculate, orange-coloured or red. ○ F. Native of Senegal.


6 M. CYLINDRICA (Lin. spec. 1433.) stem 5-angled; leaves cordate, somewhat lobate, angular, toothed; flowers yellow; fruit cylindrical, very long, rather villous, reticulated; bractea quite entire at the base of the pedicle; seeds black. ○ F. Native of Ceylon and China. Willd. spec. 4. p. 605. The fruit of the species, according to Rumphius, does not open elastically, being composed of so many reticulated tough fibres.

Cylindrical-fruitated Momordica. Pl. tr.
7 M. HEYNE'ANA (Wall. cat. no. 6744) leaves 3-lobed, mucronately denticulated; peduncles 1-flowered, solitary, furnished each with a large bractea under the flower, which encloses it before expansion; tendrils simple. ○ F. Native of the East Indies. Flowers large.

Heyne's Momordica. Pl. tr.

8 M. subanu'gula'ta (Blum. bjr. p. 928) leaves deeply cordate, acuminate, rather angular, mucronately denticulated, scabrous above; flowers dioecious; bracteae cordate, quite entire at the top of the peduncle. ○ F. Native of Java, on Mount Salak, where it is called by the natives Aroy Gambas. Allied to M. cylindrica and M. dioica. The inflorescence of this plant agrees with the figure in Rumph. 5. t. 150. ex Blume. Fruit fibrous.

Angular-leaved Momordica. Pl. cl.

9 M. PA'NA (Hamilt. ex Wall. cat. no. 6742) leaves cordate, triangular or hastate, sometimes lobed at the base, acuminate at the apex, coarsely toothed; tendrils simple; female peduncles 1-flowered, solitary; male ones racemose; racemes aggregate; fruit round, beset with a few scattered prickles. ○ F. Native of the East Indies, in Goyalpara.

Paina Momordica. Pl. tr.

10 M. tubi'flowers (Roxb. ex Wall. cat. no. 6749) plant white from down; leaves round, angularly and roundly lobed, cordate at the base; tendrils simple; fruit oblong, acuminated, ribbed; peduncles 1-flowered, solitary, bracteate. ○ F. Native of the East Indies.

Tube-flowered Momordica. Pl. tr.

11 M.PUR'ANS (Mart. reise. bras. ex Linnæa. vol. 5. p. 40) stems angular, climbing, clothed with resinous farina at top; leaves ovate-oblongular, acuminated, with a roundish recess, cordate, oblongely 5-lobed, denticulated; male corymbs erect, axillary; female flowers solitary, axillary, drooping; fruit oblong, crested longitudinally from warts. ○ F. Native of Brazil.

Purging Momordica. Pl. cl.

12 M. operculata (Lin. spec. 1433) leaves 5-lobed, toothed; fruit elliptic, angular, tuberculated, operculared by a deciduous bead. ○ F. Native of America. Comm. rar. 22. t. 32, ex Lin. and Willd. spec. 4. p. 603. This plant is probably referable to the genus Luffa. The top falling off from the fruit when it is green.


13 M. elate'rium (Lin. spec. 1434) plant scabrous, hispid, and glaucensed; stems dwarf, without tendrils; leaves cordate, somewhat lobed, crenate-toothed, very rugged, on long petioles; fruit ovate, obtuse, hispid, and scabrous, on long peduncles; seeds bay-coloured. 2 F. or O. H. Native of the south of Europe. Sims, bot. mag. t. 1914.—Blackw. herb. t. 108. Woodv. med. bot. t. 43. Elatérium cordifólium, Mœnch. meth. p. 563. Ecballium L. C. Rich. Root thick. Flowers yellow. Fruit green, expelling the seeds when ripe. Perhaps a proper genus. Dr. Clutterbuck has lately ascertained that the active principle of wild cucumber is contained almost exclusively in the juice around the seeds, and that genuine elaterium is the matter which subsides spontaneously from the juice obtained without pressure. He found that the eighth part of a grain thus prepared seldom failed to purge violently, and of this according to Dr. Barry, from 55 to 64 per cent., only were soluble in alcohol of 0809. The bitter principle found in it is not in itself purgative, but quickens the action of elatin when combined with it. Elatin is a new principle obtained by Dr. Barry of a green colour; it is purgative in very minute quantities. In medicine a few grains of elatérium operates as a drastic purgative, and was sometimes used in dropsies. It is high priced, and seldom used, though recommended by Dr. Ferriar.


14 M. lamberti'ana (Ser. in D. C. prod. 3. p. 311) hispid; stems prostrate, flexuous; tendrils nearly simple; leaves cordate-roundish, 5-lobed, denticulated, scabrous; petioles short; flowers? fruit solitary, elliptic, pilose; peduncles short, hispid. ○ F. Native of the East Indies. Ecballium L. C. Rich. Allied to M. elatérium, but distinct.

Lambert's Momordica. Pl. tr.

15 M. echina'ta (Muhl. ex Willd. spec. 4. p. 605) leaves cordate, with 5 lobed angles; lobes acuminated, quite entire, glabrous; tendrils multifid; fruit roundish, 4-seeded, eellinated by bristles. ○ H. Native of the western parts of Pennsylvania, near the river Ohio. Siccyos lobatá, Michx. amer. 2. p. 217. Fruit roundish, size of a gooseberry, beset with long subulate bristles, very like those of Sicius, but 4-seeded. Flowers yellow.

Echinated-fruited Momordica. Pl. tr.

16 M. dioica (Roxb. ex Willd. spec. 4. p. 605) stems angular, climbing; leaves cordate, acuminated, toothed, glabrous on both surfaces; tendrils filiform; flowers dioecious; female ones solitary; fruit elliptic, muricarated. ○ F. Native of the East Indies.

Dioecious-flowered Momordica. Pl. tr.

17 M. renigera (Wall. cat. no. 6743) leaves cordate, dentate or distantly and mucronately denticulated; peduncles long, 1-flowered, solitary, furnished each with a kidney-shaped hooded bractea, just below the flower; tendrils simple. 2 H. Native of the Burman Empire, about Prome.

Kidney-bearing Momordica. Pl. cl.

18 M. Hamiltoniana (Wall. cat. no. 6748) leaves cordate, toothed, crenated, acuminated; bractea toothed; peduncles 1-flowered, solitary; tendrils simple; fruit hispid. 2 F. Native of the East Indies, in Goyapara and Gongachora. Flowers large.

Hamilton's Momordica. Pl. cl.

19 M. bicolor (Blum. bjr. p. 928) leaves deeply cordate, somewhat 5-angled, bluntish, glabrous, mucronately denticulated, with rather strigose margins (when dry dotted above), glandular beneath; flowers dioecious, pedunculate, axillary, usually 3-together; fruit oblong, glabrous, variegated with red. ○ F. Native of Java, in calcareous soil near Kuripan, where it is called Aroy Pupassang by the natives. Nearly allied to M. dioica.

Var. a; base of leaves deeply cordate. Native of the Moluccas.

Var. β; leaves cordately 3-lobed; lateral lobes angular. Native of Java, on Mount Parang.

Two-coloured-fruited Momordica. Pl. tr. or cl.

20 M. acquile'ata (Poir. dict. suppl. 3. p. 723.) stem slender, climbing; leaves palmately pedate, with 5-7 dentately lobed segments, having white scattered dots above, but with the nerves and petioles beset with short prickles beneath; petioles and middle nerves clothed with rough reflexed hairs; male flowers racemose, on long peduncles; female flowers solitary, hardly pedunculate; fruit subglobose, glabrous, size of a pea. ○ F. Native country unknown.

Prickly Momordica. Pl. cl.

21 M. my'strix (Gill. mss. ex Hook. et Arn. in bot. misc. 3. p. 234.) leaves 5-lobed, glabrous, smooth, somewhat cuneated at the base; lobes mucronate, denticulated, middle lobe the longest; tendrils simple; male and female flowers rising from the same axis: male ones disposed in racemes: female ones solitary, pedunculate; fruit oblique, ovate, echinated with strong bristles. ○ F. Native of Buenos Ayres.

Porcupine Momordica. Pl. tr.

CUCURBITACEE. XII. Momordica.
22. M. Lava'ta (Thunb. prod. 13.) leaves ternately pinna-
tat'd, scabrous; fruit woolly. O. F. Native of the Cape of
Good Hope.

Woolly-fruit'd Momordica. Pl. cl.

23. M. 5. syicoides (Ser. in D. C. prod. 3. p. 312.) stems twining,
tere; tendril's simple; leaves triangularly cordate, some-
what 5-lobed, serrulat'd; female flowers pedunculate, solitary;
calyx ovate, pilose, with narrow linear segments; fruit ovate
mature, very pilose, of a yellowish orange-colour at matur-
ity; seeds subglobose. O. F. Native of China —Braam. icon.
chin. t. 12.

Sicyos-like Momordica. Pl. tw.

24. M. spicata (Lin. ms. ex Smith in Rees' cyci. vol. 23.)
 stems furrowed, rugged; leaves cordate, 3-5-lobed, undulated,
rugged from tubercles; male flowers racemose; racemes on long
peduncles; tube of calyx very long; bracteas dilated, toothed,
scabrous; female flowers solitary, on short peduncles; seeds
elliptic, furrowed, hispid. O. F. Native country unknown.

Sicyos-flowered Momordica. Pl. cl.

Cult. M. Elatium and M. Lambertiata being hardy, their
seeds should be sown in the open border. The seeds of the
rest of the species should be sown on a hot bed in spring, and
the plants planted out afterwards as directed for Gourds, p. 42.

XIII. NEUROPSERMA (from νευρος, neuron, a nerve, and
σπερμα, sperma, a seed; in reference to the seeds, which are
reticulated with anastomosing nerves). Rafin. in Journ. phys.
prod. 3. p. 312.

Lin. syst. Mono'c'ia, Monadoph'la. Flowers monoeocious.
Male flowers with a 5-parted calyx; and a 5-parted corolla,
having an undulated erose margin. Stamens 5, diadephous,
having a gland alternating with each fascicle; one of the fas-
cicles bearing 2 anthers, the other trigonal, and bearing 3 an-
thers. Anthers sessile, stellate. Female flowers with a parted
ovary and calyx. Ovarium inferior, beset with 8 series of warts.
Style trifid, girded by 3 glands at the base; stigmas 2-lobed.
Fruit fleshy, 3-celled, but when mature 1-celled, 3-9-seeded.
Seeds girded by mucilaginous red aril, flat, nerv'd, with anasto-
mosing veins, and a rugged edge. Perhaps a proper genus.

1 N. Cuspi'data (Rafin. l. c.) Native of Kentucky, North
America. Perhaps the same as Monória'd balsàmen?

Cuspidate Neuroserma. Pl. tr.

Cult. See Sicyos p. 34. for culture and propagation.

XIV. S'ECHIU'M (from στεκτος, sokiso, to fatten; given to

Lin. syst. Mono'c'ia, Monadoph'la. Flowers monoeocious,
yellow. Male flowers with a somewhat 5-toothed calyx, exca-
vated into 10 hollows, and with the corolla joined on the calyx.
Stamens 4-5, monadephous, free at the apex, diverging; anthers
cordate, distant. Female flowers with a calyx and corolla, as
in the male, but without stamens. Style thick; stigma sub-
capitate, 3-5-cleft. Fruit obcordate, 1-seeded. Seed ovate,
flat, compressed.

1 S. edule (Swartz, fl. ind. occid. 2. p. 1150.) stems terete,
striated, smooth; leaves cordate, angular, rugged beneath; lobes
conning at the base, tooth'd; terminal angle long and acut-
ated; tendrils 4-5 cleft; male flowers racemose; female
flowers solitary, rising from the same axils as the males; fruit
large, obovate, 5-furrowed, gibbous at the apex, echinated by
stiff hairs. O. F. Native of the West Indies, common.
amer. p. 258. t. 163. Chayota edulis, Jacc. amer. 2. t. 245.
This plant is known in South America under the name of cho'ko
and cha'tote. The fruit is green, shining on the outside, whitish,
and fleshy within, differing in size and singular in structure,
containing one seed each, which is sometimes an inch long, and placed
at the very top of the fruit; when it is ripe it protrudes itself a
little, and puts forth many fibres at its extremity. In many of the
West Indies the inhabitants put the fruit into soups or puddings,
or boil it and eat it with their meat as a substitute for turnips
or greens, in which state it is generally looked upon as wholesome
and refreshing, but it is too insipid to be much liked. The
fruit serves to fatten hogs in the mountains and inland parts of
Jamaica, where the plant is much cultivated. The natives of
Cuba notice this variety; one which is most common they
call simply chayote: it is best with harmless pickles, some-
times in great abundance, and sometimes with very few, and
is about 4 inches in length; the other, less frequent, called chayote
francis, is for the most part entirely destitute of pickles, and is
about the size of a hen's egg.


2 S. America'num (Lam. dict. 7. p. 50.) leaves cordate,
angular; flowers racemose; fruit glabrous, a little compressed,
size of a pigeon's egg; seed oval-elliptic. O. F. Native of
Jamaica. Fruit edible like the last. This is perhaps the
chayote francis mentioned above.

American Choko. Pl. cl.

3 S. Palma'tum (Ser. in D. C. prod. 3. p. 313.) stems terete,
bluntly furrowed; tendril's umbellate; leaves palmately lobed,
scabrous; stipula or bractea sessile, cordate, deeply 3-lobed;
males flowers racemose; common peduncle short, many-flowered;
filaments monadephous at the base, and divericate towards the
 apex; female flowers twin, nearly sessile; fruit prickly, green,
size of a fift. O. F. Native of Mexico, in Acahualtempa.
S. palmátum, Moc. et Sesse, fl. mex. icon. ined.

Palmate-leaved Choko. Pl. cl.

Cult. See Cucúribita, p. 42. for culture and propagation.

XV. MELO'OTRIA (μελος of Theophrastus, supposed to be
3. p. 313.—Trichosanthes species of Jacq.

Lin. syst. Mono'c'ia, Polyda'phla. Flowers monoeocious.
Male flowers with a 5-toothed calyx and a campanulate corolla;
petals ciliated or tooth'd, not fringed. Filaments 5, in 3 parcels.
Female flowers. Style 1; stigmas 3, fringed. Fruit 3-celled,
many-seeded. Seeds unknown.

1 M. pendula (Lin. spec. p. 49.) leaves cordate, 5-lobed,
tooth'd; tendril's simple; female flowers solitary, on long ped-
duncles; corolla rather pilose, dentilicate; fruit ovate, nearly
globose, pendulou. 4. S. Native of South America, and the
southern parts of North America. Lam. ill. t. 28. f. 3.—Pluk.
alm. t. 85. f. 5.—Sloan. junc. t. 272. f. 142; f. 2. Plum. spec.
t. 66. f. 2. Stems rooting at every joint. Flowers small,
pale yellow. Fruit about the size of a pea, changing to black
when ripe. In the West Indies these are pickled when green by
the inhabitants.


2 M. fré'tida (Desr. in Lam. dict. 4. p. 87.) root fleshy,
turn'ip-formed; leaves cordate, a little tooth'd, pilose, almost sessi-
el; tendril's simple; male flowers racemose; peduncles short,
short-flowered; female flowers solitary, sessile along the males;
fruit ovate, mariculated, mucronate, pilose, of a dirty yellow-
colour; seeds obovate, compressed. 4. S. Native of Guinée.

Trichosánthes forútsianna, Jacq. coll. 2. p. 341. icon. rar. 3. t.
624. Flowers yellow. Herb fedid when bruised.


3 M. ? Indica (Lour. coch. p. 35.) stems angular; leaves
triangular, denticulated, rough, small, on long pedioles; flowers
usually solitary, pedunculate, white; fruit ovate-oblung, smooth,
small, whitish green. 2. S. Native of Cochín-china. In hedges.
—Rumph. amb. 5. t. 171. f. 2. ex Lour. l. c. Flowers white.
Indian Melothria. Pl. tr.

Cult. See Sieyos, p. 34 for culture and propagation. The plants will exist through winter if kept in a stove.


Lin. syst. Monoc'cia, Monodelphia. Flowers monoeious, white. Male flowers. Calyx rather club-shaped, 5-parted; lobes appendiculated, furnished with 5 teeth on the outside, which alternate with the lobes. Corolla 5-parted, ciliated; filaments 5, but probably 5, joined by twos; anthers joined, with very flexuous cells. Female flowers. Calyx 5-toothed. Corolla 5-parted (f. 2. a.), ciliately jagged. Style trifid (f. 2. d.). Stigmas oblongly subulate. Fruit oblong, 1? or 3-9-celled (f. 2. c.). Seeds compressed, tunicated, blunt, very much deformed?

1. T. ANGUINA (Lin. spec. 1482.) stem pentagonal; leaves cordate, 3-lobed, rarely toothed, ciliate, puberulous; tendrils trifid, very long; male flowers race-mose; racemes on long peduncles; calyces lobes very short, tooth-formed; lobes of corolla ovate, ciliately jagged; fruit terete-oblong, ending in a long beak, hispid, splitting. O. F. Native of China. Lam. ill. t. 794. Sims, bot. mag. 472.—Mills. fig. t. 32.—Mich. gen. 12. t. 9. Cucumis anguinaus, Lin. spec. 1487. ex Lam. dict. 2. p. 75.—Rumph. emb. 5, t. 407. t. 135. Kukubjangan of the Hindoos. Flowers white. Fruit near a foot long.


2. T. COSTATA (Blum. bijdr. p. 933.) leaves cordate, 3-lobed, denticulated, scabrous; lateral lobes somewhat 2-lobed; male flowers race-mose, bracteate; female ones solitary; fruit ovate, oblong-ribbed. O. F. Native of Java, about Batavia and the western provinces, on the margins of rivers, where it is called lopan by the natives.

Ribbed-fruited Snake-Gourd. Pl. tr.

3. T. CULUBRINA (Jacq. fil. eclog. t. 128.) stems furrowed, thickish; tendrils bifid; leaves roundish, cordate, 3-5-lobed; lobes short, broad, toothed; male flowers in panicles; common peduncles very long; female flowers sessile, solitary or in the same axis with the males; calyx very long, with a reflexed limb; fruit nearly terete, very long, lined; seeds ovobovate, red. O. F. Native country unknown.

Fiper Snake-Gourd. Pl. tr.

4. T. SERRVIDOLA (Lin. spec. 1439.) stem slender; leaves cordate, 3-nerved, toothed; petiole short; tendrils bifid; male flowers race-mose; racemes on long peduncles; lobes of corolla oblong, ciliately jagged; female flowers solitary; fruit ovate, acutish, green, lined with white, about the size of a hen's egg. O. F. Native of the East Indies. Rheed. hort. mal. 8. t. 17. Nerve-leaved Snake-Gourd. Pl. tr.

5. T. OFFICINALIS (Hamilt. ex Wall. cat. no. 6694, scabrous; leaves cordate, denticulated; petioles hispid; female peduncles 1-flowered, solitary; fruit round, smooth. O. F. Native of the East Indies, in Chilnari.


6. T. SCABRA (Lour. coch. p. 589.) branches woody, furrowed; leaves cordate, roundish, wrinkled, scabrous; tendrils bifid; flowers monoeious; corolla shortly ciliated; fruit roundish, red, 10-angled, 5-celled; seeds flat, oblong. h. G. Native of Cochin-China. Flowers white. Fruit small. Scabrous Snake-Gourd. Shrub cl.

7. T. cuspidata (Lam. dict. 1. p. 188.) stem twining; leaves cordate, oblong, acute, toothed; tendrils simple; male flowers unknown; female flowers nearly sessile, on short peduncles; calyx long, tubular, with nearly linear, acute, stalked, ciliately fringed segments; fruit ovate, ending in a long point. O. F. Native of the East Indies.—Rheed. mal. 8. t. 16. T. coudata, Wilds. spec. 4. p. 600.

Cuspidate-fruited Snake-Gourd. Pl. tw.

8. T. angulata (Lam. dict. 1. p. 190.) stems angular, very slender, villous; leaves cordate, roundish, small, angular; tendrils forked, longer than the leaves; male flowers panicked; common peduncles much longer than the leaves; female flowers solitary, pedunculate. O. F. Native of the East Indies. Petals fringed.

Angular-stemmed Snake-Gourd. Pl. tr.

9. T. villosa (Blum. bijdr. p. 934.) leaves cordate, tricuspidate, obsoletely denticulated, villous; peduncles 1-flowered; fruit nearly globose, striated with white. O. F. Native of Java, about Rompient and Buitenzorg, where it is called Badujut by the natives. Fruit indehiscent.

Villous Snake-Gourd. Pl. tr.

10. T. ovigera (Blume, l. c.) leaves deeply cordate, mucronate, sometimes sinuated, mucronately denticulated, shining above, and rough beneath: female peduncles 1-flowered; fruit ovate, vittate. O. F. Native of Java, on Mount Salak, where the plant is called Twuk by the natives.

Egg-bearing Snake-Gourd. Pl. tr.

11. T. grandiflora (Blum. l. c. p. 935.) leaves large, quintuple-nerved, ovate, sometimes tricuspidate, quite entire, coriaceous, quite glabrous; flowers bracteate, disposed in dense spikes. O. F. Native of Java, in humid places on the mountains, where the plant is called by the inhabitants Kalayor Badak.

Great-flowered Snake-Gourd. Pl. tr.

12. T. coriacea (Blum. l. c. p. 935.) leaves somewhat quintuple-nerved, cordate, acuminate, quite entire, coriaceous, reticulated above and glabrous, but paler and rough beneath; male flowers bracteolate, in loose racemes, on elongated peduncles. O. F. Native of Java, on Mount Salak, where the plant is called by the inhabitants Piet-tjum-tjelling. Allied to T. grandiflora.

Coriaceous-leaved Snake-Gourd. Pl. tr.

13. T. heteroblasta (Roxb. ex Wall. cat. 6684.) leaves smooth, coriaceous, 3-lobed, seldom 5-lobed; lobes acuminate, entire; peduncles racemose; tube of calyx long. h. G. S. Native of the East Indies, in Goyalpara.

Variable-hollowed Snake-Gourd. Shrub cl.

14. T. cucumisina (Lin. spec. 1432.) fetid; stems tetragonal, rather pilose; leaves cordate, angular, rather villous, petiolate, with white nerves, and muricated petioles; tendrils bifurcate; male flowers disposed in something like umbels; female flowers solitary, on short peduncles; calyces lobes ovate; petals fringed at the apex; fruit ovate, mucronate, smooth, green, lined with white, but at last becoming orange-coloured; seeds with sinuated margins. O. F. Native of Java, in the province of Bantam. Blum. bijdr. p. 934.—Rheed. mal. 8. t. 15. Flowers white. The seeds are sometimes used in disorders of the stomach and bowels, and the plant is celebrated for its virtues in Hortus Malabaricus.


15. T. amaeba (Lin. spec. 1432.) stems terete, glabrous; tendrils simple; leaves cordate, triangular, sinuated, scabrous from dots, stalked; female flowers solitary; peduncles longer than the leaves; calyx long, tubular, with lanceolate, acute segments; petals roundish-ovate, fringed; fruit obovate-oblung, 9-celled, green, striped with longitudinal white lines; flesh white and
bitter; seeds oblong, narrow. O. F. Native of St. Domingo.

—Plum. descr. pl. amer. t. 100.

Bitter-fruited Snake-Gourd. Pl. tr.

16 T. hexasperma (Blum. bijdr. p. 935) leaves 3-nerved, ovate, tricuspidate, quite entire, coriaceous, glabrous; male flowers bracteate, disposed in racemes: female flowers solitary; fruit globose, 6-seeded. O.? F. Native of Java, at the foot of Mount Salak, where it is called Arroy-pitjung-Tjelleng by the natives.

Six-seeded Snake-Gourd. Pl. tr.

17 T. Russelliana (Wall. cat. no. 6696.) smoothish; leaves cordate, hastily 3-lobed, nearly entire; tendrils simple; peduncles 1-flowered. O. & S. Native of the East Indies.

Russell’s Snake-Gourd. Shrub cl.

18 T. macrocarpa (Blum. l. c.) leaves cordate, orbicular, 5-lobed, but sometimes 3-lobed, coriaceous, glabrous; lobes ovate, acuminate, quite entire: lateral lobes rather bifid; fruit large, globose; stem suffruticos. O. & S. Native of Java, on the mountains.

Long-fruited Snake-Gourd. Shrub cl.

19 T. triuspidata (Lour. coch. 589.) stems shrubby; tendrils trifid; leaves cordate, tricuspidate, denticulated, glabrous, many-nerved; stipulas roundish, thick, crenated; flowers spicate, or perhaps panicked; bracteas large, toothed; fruit yellow, small, ovate, 2-celled, 2-seeded. O. F. Native of Cochín-china; and among bushes and on the margins of rivers in Java. Flowers white.

Tricuspidate-leaved Snake-Gourd. Pl. cl.

20 T. filosus (Lour. coch. p. 588.) stems suffruticos, very long, furrowed; bifid leaves; large cordate, denticulated, pilose on the veins, lower ones palmate, upper ones 3-lobed; male flowers? in spikes; bracteas large, lanceolate, ciliated; fruit ovate, acute, scarlet, 1-celled; seeds rhomboid, compressed, lobed, brown. O. & S. Native of Cochín-china. Flowers white as in the rest of the species, fringed with curling hairs.

Pilo-se Snake-Gourd. Shrub cl.

21 T. laciniosa (Klein, ex Willd. spec. 4. p. 601.) stems filiform, angular, glabrous; leaves deeply cordate, palmately 5-7-lobed, remotely toothed, glabrous on both surfaces; male flowers disposed 4 or 6 in a corymb: petals ovate, toothed; female flowers solitary: petals ciliately fringed. O.? F. Native of the East Indies.

Jagged-leaved Snake-Gourd. Pl. tr.


23 T. Chikènes (Ser. in D. C. prod. 3. p. 315.) leaves cordate, triangular, bluntish, rather angular; petioles short; tendrils simple; male flowers solitary; calyx long, elate, rather pilose; petals obovate, with fringed margins; female flowers solitary, almost sessile; tube of calyx ovate, acuminate, pilose: petals not fringed; fruit ovate, striated, ending in a long point.


China Snake-Gourd. Pl. tr.

24 T. tambinioia (Poir. dict. suppl. l. p. 386.) stems glabrous, striated; tendrils simple; leaves ovate-roundish, rather lobed, or entire, scabrous above; male flowers small, in loose racemes; petals villous? reflexed; fruit ovate, mucronate, glabrous.—Native of Porto Rico.

Tamus-leaved Snake-Gourd. Pl. tr.

25 T. fubera (Blum. bijdr. p. 936.) leaves deeply cordate, tricuspidate, denticulated, rather tomentose beneath; female flowers solitary: fruit ovate, acute.—Native of Java, on the mountains, where the plant is called by the natives Arroy-kalayar-burrum.

Downy Snake-Gourd. Pl. tr.

26 T. globosa (Blum. bijdr. p. 936.) leaves palmately 3 or 5-lobed, quite entire, glabrous; lobes linear, acute; male flowers bracteate, disposed in dense spikes, on thick peduncles; female flowers solitary; fruit globose.—Native of Java, on Mount Salak, where the plant is called Arroy-jantang by the natives.

Globose-fruited Snake-Gourd. Pl. cl.

27 T. palmata (Roxb. ex Wall. cat. 6688.) puberulous; leaves cordate, 5-lobed; lobes denticulated; peduncles racemose; corolla fringed. O. & S. Native of the East Indies. Bracteas toothed.

Palmate-leaved Snake-Gourd. Shrub cl.

28 T. trifoliata (Blum. l. c.) leaves ternate; leaflets denti
culated, scabrous: lateral ones gibbous at the base; male flowers bracteate, disposed in something like racemes; female flowers solitary; fruit ovate, muciracet (ex Rumphi); seeds complanate, denticulated?—Native of Java, in the province of Krawang, near Tjiradjas. Mammórica trifiliata, Lin. spec. 1434. Amara sylvestris, Rump. amb. t. 152. f. 2.

Trifoliolate-leaved Snake-Gourd. Pl. cl.

Cult. Sow the seeds in a hot-bed in spring, and afterwards treat the plants as if they were cucumbers. The shrubby and perennial species should be cold from the frost and cold by placing them in the stove in winter: cuttings will root readily.

XVII. AMPELOSICYOS (from ampleros, ampeles, a vine, and sygos, sigos, a cucumber; intermediate habit.) Pet. Th. veg. d’Afr. p. 68. t. 22.—Telafairia, Hook, bot. mag. no. 2751. and 2752. (July 1827.) Feuillae’s, spec. Smith, in bot. mag. t. 2681. Jollifica, Bojer in litt. (1826.) and Delill. mem. soc. hist. par. vol. 3. p. 314. (July 1827.)

LIN. SYST. Diocèsa, Monadelphia. Flowers dioecious. Male flowers. Calyx turbinate (f. 3. a.), 5-cleft; segments acutely denticulated (f. 3. b.). Corolla 5-petalled (f. 3. c.); petals oblong, fringed. Stamens 5, disposed in 3 bundles. Female flowers. Limb of calyx almost wanting, 5-toothed (ex Smith). Corolla as in the male. Stigma capitate, 3-lobed (ex Bojer), 5-lobed (ex Smith). Fruit fleshy (f. 3. c.), 2-3 feet long, and 8 inches thick, elongated and furrowed, divided into 3 twin cells (ex Bojer), into 5 (ex Smith). Seeds compressed, nearly orbicular, reticulated on the outside. Cotyledons thick, oily. A climbing plant, with pedate leaves and showy purple flowers.

1 A. scandens (Pet. Th. l. c.) 4. S. Native of the southeastern coast of Africa, on the shores of Zanzibar. It has also been gathered in the Mauritius, where it is called by the negroes Koumé. Feuillae’s pedata, Smith, l. c. t. 2681. a female plant. Telafairia pedata, Hook, bot. mag. t. 2751 and 2752. with male flowers and fruit. Jol-
CUCURBITACEÆ.

Cucurbita maxima (Duch. in Lam. Dict. 2. p. 151.) seeds cardate, very rugged; petioles hispid; tube of calyx obovate, ending in a short neck; fruit globose, somewhat depressed, yellow, red, or green. ♀ ♂ Native country unknown. Tourn. Inst. p. 106. no. 2. t. 34. Lob. Icon. 641. f. 2. Cucurbita Potiro, Pers. ench. 2. p. 593.

Var. α, Potiro (Ser in D. C. Prod. 3. p. 316.) stems very long, climbing; tendrils strong; fruit large, yellow, or orange-coloured, hollow at maturity. Common yellow gourd, potiron jaune commun, gourge de the French. The shells of the fruits are generally used for holding water.

Var. β, viridis (Ser. in D. C. Prod. 3. p. 316.) stems very long, climbing; fruit green, large, hollow at maturity. Large green gourd. Gros potiron vert of the French. The shells of the fruit of this sort are also used as calabashes.

Var. γ, Goiterro (Ser. diss. in mem. soc. gen. vol. 3. pt. 2. t. 1.) stems assurgent, dwarf; nodes close; tendrils abortive; leaves ovate, cordate, 3-lobed, somewhat coarctate; lobes narrow; fruit small, green, or yellow, full at maturity. Gourgeron or petit potiron vert.

Large Hollow Gourd. Fl. Jul. Aug. Clt.? Pl. cl. or tr. 2 C. melopepo (Lin. spec. 1435.) leaves cardate, obtuse, somewhat 5-lobed, denticulate; tendrils usually transformed into very imperfect leaves; calyx hemispherically campanulate, short, having the throat much dilated; fruit depressed; carpels irregular, rising beyond the throat of the calyx; flesh dry, spongy, white; cells 4-5. ♀ ♂ Native country unknown. Wild. spec. 4. p. 610. C. polymorpha Melopepo, Duch. in Lam. Dict. 1. p. 157.—Bauh. Hist. 2. p. 254. with a figure. Pêpo maximus clypeatus, Mor. Hist. 1. sect. 1. t. 8. Fruit flattened at both ends. It is of great use in long voyages, for it can be kept several months in a fresh state, and is commonly made into pies, like the pumpkin, or boiled and eaten with meat instead of turnips or potatoes. Bonnet d'electeur, bonnet de prétre, and pâtissé of the French.


XVIII. Cucurbita.

Musky Gourd. Fl. June, Aug. Clt.? Pl. tr. 4 C. cerásteeæ (Mart. reas. in bras. ex Linnæa. 5. p. 39.) leaves cardate, nearly orbicular, blantly somewhat 5-lobed, denticulate; fruit large, oblong-pear-shaped, or cylindrical, lined longitudinally, glabrous; flesh subgranular. ♂ ♂ Native of Brazil.

Horned-fruited Cucurbita. Pl. tr. 5 C. villôsa (Blume. bidgr. p. 931.) leaves roundish, cardate, 5-lobed, sabellous; lobes acute, minutely denticulate; peduncles 1-flowered, of the male longer than those of the female flowers; fruit oblong, villous. ♂ ♂ Gathered in the gardens in the East Indies. By the Javanese it is called Baligo.

Villous Gourd. Pl. tr. 6 C. pefo (Lin. spec. 1435.) leaves cardate, obtuse, somewhat 5-lobed, denticulate; calyx ending in a neck beneath the limb; fruit roundish or oblong, smooth. ♂ ♂ Native of the Levant. C. polymorpha oblonga, Duch. in Lam. Dict. 2. p. 155. This species is called Pumpkin and pomion, in English; Giramou, Citrouille trougasse, gourge de Saint Jean in French; Popone in Italian. There are several varieties of pomion, but the most striking are the two following:

Var. a, subrotundâ, (Wildl. spec. 4. p. 609.) fruit roundish. C. major subrotundâ, &c. Bauh. pin. 213.

Var. b, oblonga, (Wildl. l. c.) fruit oblongus. Pêpo oblongus, Bauh. pin. 311.

The pumpkin is the melon or millon of our early horticulturists, the true melon being formerly distinguished by the name of musk melon. Though commonly cultivated in gardens for curiosity, yet in some country villages in England, the inhabitants grow it on dunghills, and train the shoots to a great length on the grass. When the fruit is ripe, they cut a hole on one side, and having taken out the seeds, fill the void space with sliced apples, adding a little sugar and spice, and then have baked the whole, eat it with butter. On the Continent, as well as in many other parts of the world, the fruit is a good deal used in soups, and also stewed or fried in oil or butter. Pumpkin-pie is also very common in many parts of the world.

Modes of dressing some varieties of the gourd.—Mr. Crichton (Cal. mem. vol. 4.) prefers the cheese-gourd, some of which have weighed with him 1 cwt., and the vegetable marrow; but he very judiciously attaches much more importance to the kind of cooking than to the variety cultivated. He therefore subjoins two receipts for the use of the cheese-gourd, and one for vegetable marrow.

To make soup of cheese-gourd.—Take the fleshy part of the gourd when ripe, and cut it into small pieces; put it into a pan with a small bit of butter, set upon a slow fire until it melt down to a purée; then add milk, in the proportion of half a gallon to 4 lbs. of gourd, let it boil a short time with a little salt and sugar, enough to make it taste a little sweet; then cut some slices of bread very thin, toast them very well, and cut them into small dice, put them in a dish, and pour the purée over them, and serve it up.

Cheese-gourd dressed in the Spanish way.—When ripe cut the fleshy part into slices about half an inch, score it across into small dice about half an inch through on one side of the slices; scrape a little of the fat of bacon, and put it into a saucepan, with a little parsley, shallots, and mushrooms chopped very small, adding a little salt and pepper; put them on a slow fire to fry a little, and place this seasoning upon the cut sides of the gourd slices. Put the whole into a quick oven, with a little butter or olive oil, and when baked a little serve up in a dish.

Pumpkin or Pomion. Fl. June, Aug. Clt. 1570. Pl. tr. 7 C. farinosa (Blume, bidgr. p. 931.) leaves roundish, cardate, rather angularly 7-lobed, a little stigmatic; lobes acuminate, toothed; peduncles 1-flowered; fruit oblong, large, covered with a kind of glaucous mealliness. ♂ ♂ Native of Java, in
fields and in gardens, where the plant is called *Dahigo* by the natives. Allied to *C. Pêpo*. Compare Rumph. amb. 6. t. 143.

Mealy-fruit led Gourd. Pl. tr.

8 C. verrucósa (Lin. spec. 1435.) leaves cordate, deeply 5-loved, denticulated; middle lobe narrow at the base; fruit roundish-elliptic, warty. O. F. Native country unknown.—Bauh. hist. 2. p. 222. with a figure. C. polymôphra verrucósa, Duch. in Lam. dict. 2. p. 155. The plant, flowers, and seed &e. are like those of *C. Pêpo*, but the fruit is smaller, with a harder, almost woody rind. Called *Barbarine*, and *Barberisque* in French. The warted gourd is common in most parts of America, where it is cultivated as a culinary fruit. It varies in form and size, being round, flat, shaped like a bottle, or oblong; the rind is white when the fruit is ripe, and covered with large protuberances or warts. It is commonly gathered when half grown, and boiled by the inhabitants of America, to eat as a sauce to their meat. In England it is only cultivated as a curiosity.


9 C. subverrucósa (Willd. spec. 4. p. 609.) leaves cordate, deeply 5-loved, denticulated; middle lobe narrow at the base; fruit clavately-elliptic, rather warty. O. F. Native country unknown. Perhaps a hybrid from *C. verrucósa*, but the fruit is very different.


10 C. aurasécia (Willd. l. c. p. 667.) plant very scabrous; leaves subcordate, 3-loved, cuspidate, sharply denticulated; fruit globose, smooth, having the appearance and colour of an orange. O. F. Native country unknown. The orange-gourd is rather more tender than the other sorts. It has been hitherto chiefly cultivated for curiosity, and when trained spirally round a pole, or against a wall, and loaded with its yellow fruit, it is very ornamental. The fruit should be used like those of other sorts of pumpkin or gourd.

*Var. a, orándìna* (Ser. in D. C. prod. 3. p. 317.) fruit globose, 3-celled; pulp fibry, yellow, nearly dry, with a solid dark green rind, which at length becomes orange-coloured.—*Orangina* or *Fausse orange in French*; *orange-gourd* in English.

*Var. β, cloëjecthoïdes* (Ser. in D. C. prod. 3. p. 317.) rind of fruit thinner and variegated; pulp dry. Called *Coloquinelle* or *Fausse coqouine* in French, and *False cloquing* in English.


11 C. cocíiscëa; fruit round, scarlet, about the size of an orange. O. F. Native of Sierra Leone.

Scarlet-fruitled Gourd. Pl. tr.

12 C. ovépera (Lin. mant. p. 126.) leaves cordate, angular, 5-loved, denticulated, pubescent; calyx obovate, ending in a short neck, and cut round after flowering to the neck. O. F. Native of Astrakan. C. polymôphra pyriûdâris, Duch. in Lam. dict. 2. p. 134.—J. Bauh. hist. 2. p. 222 and 223. f. 1. C. sylvestris, Dod. pempt. 670. f. 1. C. pyrïmôris, Lob. hist. 367. f. 2. Herb and flowers very like those of *C. Pêpo*, but less scabrous. Fruit obovate or ovate, smooth, greenish or yellow, figure of an egg. Called in French *Gingourdette*, and *Vegetable marrow*, in English.

*Var. a, pyrïmôris* (Ser. diss. l. c. t. 1.) leaves 5-loved with undulated margins; lobes oblong-obovate, denticulated, rarely lobulate; fruit pear-shaped, green, or yellow, lined longitudinally with white.

*Var. β, subglomerà* (Ser. in D. C. prod. 3. p. 318.) leaves bluntly lobed; lobes broad, short; fruit obovate, globose, green lined with white; flesh red.

*Var. γ, grîsica* (Ser. l. c.) leaves 3-5-loved, narrow; middle lobe trapeziform, usually lobulate; fruit larger, greenish grey, spotted with white, hardly lined.

*Var. č, ovîàta*; fruit large, ova&ate, whitish when ripe.

The first kind of vegetable marrow was introduced to Britain from Persia within the last few years, where it is called *Cicader*. The fruit of this sort is of a uniform pale yellow or light sulphur colour: when full grown it is about 9 inches in length, 4 inches in diameter, of an elliptic shape, the surface being rendered slightly uneven by irregular longitudinal ribs, the terminations of which uniting form a projecting apex at the end of the fruit, which is very unusual in the gourd or pompon tribe. It is useful for culinary purposes in every stage of its growth; when very young, it is good if fried with butter; when large, or about half grown, it is excellent either plain boiled or stewed with rich sauce; for either of these purposes it should be cut in slices. The flesh has a peculiar tenderness or softness, from which circumstance it has received its name, much resembling the buttery quality of the *bouurre-pear*, and this property remains with it until it is full grown, when it is used for pies. It is, however, in its intermediate state of growth that it is likely to be most approved. There are now several kinds of vegetable marrow in cultivation.

To dress vegetable marrow.—Take the fruit when about half grown; cut it lengthwise through the middle (if large cut it into 3 or 4 slices); take off the outer skin, cut it into small dice, about half through one side of the slices, then scrape a little of the fat of bacon, and put it into a saucepan, with a little parsley, shallots, and mushrooms, chopped very small, and let them fry a little; then add about a table spoonful of flour, with a little salt and pepper, mixed all together; then put the slices of the vegetable marrow into a stewpan with a cover, and put the fried seasoning over the slices, and let them stew a little on a slow fire, with a little fire on the cover. When enough done, serve up.*—Crichton, Cal. mem. vol. 4. The Caledonian Horticultural Society's silver medal was given to Mr. Chrichton for this receipt, and the other two upon the cheese-gourd. We think it ought to have been given to the cook.


13 C. fedìedissima (H. B. et Kunth. nov. gen. amer. 2. p. 125.) leaves deeply cordate, ova&ate, sinutately angular, narrowed above, toothed, strigose above, but white and villous beneath; female flowers axillary, solitary, pedunculate; calyx campanulate, funnel-shaped below, with ova&ate-oblong, acute segments. O. F. Native of Mexico, near Guanaxuato, at the height of 3400 feet.

Very fedìed Gourd. Pl. cl. or tr.

14 C. ûmbellàta (Klein, ex Willd. spec. p. 608.) stem furrowed, glabrous; leaves cordate, with 5 narrow, denticulated scarous lobes; male flowers in umbels, female ones solitary, pedunculate; fruit elliptic, tomentose. O. F. Native of the East Indies.

Umbelate-flowered Gourd. Pl. tr.

15 C. asperàta (Gill. mss. ex Hook et Arn. in bot. misc. 3. p. 234.) flowers dioecious; stems glabrous; leaves palmately 5-parted, rough from calous dots on both surfaces, which are more numerous beneath; segments sinutately pinnatifid; tendrils simple; male flowers in capitate racemes, on short peduncles, female ones pedunculate, solitary; fruit nearly globose, few-seeded. O. F. Native of Chili, in the province of Mendóza, in uncultivated places, where it is called by the natives *Sandillo del campos*. This plant agrees in many respects with the *C. mammeàta*, Mol. but that species is from Chili.

Rough Gourd. Pl. tr.

16 C. cixèrâria (Molina, Chili ed germ. p. 316.) leaves roundish, angular, tomentose; fruit woody, globose. O. F. Native of Chili.

CUCURBITACEÆ. XVIII. Cucurbita. XIX. Involucraria. XX. Muricia. XXI. Anguria.

17 C. mammea'ta (Molina, l. c.) leaves many-parted; fruit spherical, beset with protuberances. O. F. Native of Chili.

*Teated Gourd. Pl. tr.*

18 C. lion'sa (Mill. dict.) leaves rough, lobed; fruit woody. O. F. Native of South America. This is a large gourd, and is cultivated for the sake of the shell of the fruit, which will frequently contain between 2 and 3 quarts. Where aloes is manufactured in any quantity, it is commonly preserved in these shells; but in Jamaica they are used to hold water, and small grain.


19 C. multiflora (Forst. ex Spreng. syst. 5. p. 45.) leaves broadly cordate, 3-lobed, acute, denticulated, glabrous; flowers minute, crowded in cymes. O. F. Native of the Society Islands.

*Many-flowered Gourd. Pl. tr.*

*Cult.* The species of Cucurbita are propagated from seeds, which are large, and require to be covered nearly an inch. Sow in April in a hot-bed, under a frame or hand-glass, to raise plants for transferring to the open garden at the end of May, under a warm aspect, or for planting out in the middle of May on a trench of hot dung under a hand-glass or half shelter; otherwise sow at the beginning of May, under a hand-glass, without bottom heat, for transplanting into a favorable situation; or sow 3 weeks later (after the 20th) at once in the open garden, under a south wall, for the plants to remain. The smaller fruited kinds do best trained to an upright pole or trellis. From time to time earth up the stems of the plants. As the shoots extend 5 feet or more, peg down at a joint, and they will take root. Water copiously whenever warm weather without showers makes the ground arid. Mr. Gray (Gard. mag. vol. 1. p. 150.) plants in paths between asparagus beds, and lets the vines of the gourds run over them; and he considers that their large leaves do good to the asparagus roots, by protecting them from the sun, while the tall stems of the asparagus afford a shelter to the leaves of the gourds. In very dry seasons they are an excellent substitute for cabbages and turnips, when the drought is apt to burn up these vegetables. Mr. Gray therefore recommends, especially where the soil is liable to be burnt up in summer, planting the vegetable marrow and other cucurbitaceous plants as a reserve crop. The tender tops of all the edible species of Cucurbitaceæ, boiled as greens or spinach, are a fully more delicate vegetable than the fruit. It must be worth something to gardeners and cooks to know that either or both may be used for this purpose when scarcely any thing else can be got.


1 A. integrifolia (Nees et Mart. in nov. act. bonn. 12. p. 9.) leaves ovate, denticulated, 3-nerved, glabrous; peduncles 4-6-flowered, bracteal; female flowers unknown.—Native of Brazil, at the river Ilheos. Flowers red.

Intire-leaved Anguria. Pl. cl.

2 A. triloba (Lin. spec. 1376.) root bitter; stems slender; leaves deeply 3-lobed, or somewhat 5-lobed, veiny; lobes a little toothed; tendrils simple; male flowers large, in racemes, female ones solitary, almost sessile; fruit ovate-oblong, umbilicate green, spotted with white; seeds oblong, fulvous. 2, 3. S. Native of Martinico.—Plum. ed. Burm. pl. amer. t. 22. Jacq. amer. p. 243. t. 156. ed. pict. p. 119. t. 234. Flowers vermilion coloured.


3 A. pedate'sta (Nees et Mart. in nov. act. bonn. 12. p. 10.) leaves pedately 5-parted; lobes quite entire; tendril subumbellate; corymbs many-flowered; flowers triandrous? fruit oblong, striated, attenuated both at the base and apex; pulp white, spongy, rather acid: aril black. O. ?. Native of Peru. Momordica pedisecta, Lin. spec. 1434. Lam. dict. 4. p. 241.—Feuell. per. 1. p. 754. t. 41. Flowers white. Two outer segments of leaves lobed. The Peruvians use the fruit in soups.

Pedate-cut-leaved Anguria. Pl. cl.


A. Rôséa (H. B. et Kunth, nov. gener. amer. 2, p. 122.) branches glabrous; leaves truncate ciliate at the base, quite entire, 3-lobed at the apex, glabrous, membranous; tendrils undivided, glabrous; male flowers disposed in racemes; calyx cylindrically campanulate, ventricose at the base, with a 5-parted rose-coloured limb, having the segments roundish and longer than the tube; stamens 2, sessile. **Z.** Native of New Granada, in temperate places near Turbaco, at the height of 6000 feet. Flowers rose-coloured.

**Rose-coloured-flowered Anguria.** Pl. cl. 

6 A. Úmbrosa (H. B. et Kunth, l. c. p. 121.) leaves pedately 5-parted, sinuate ciliate; lobes quite entire, ovate-lanceolate, outer ones much the shortest and divergicate; flowers panicked; peduncles very long; calyx roughish, having the tube ventricose at the base, of a vermilion colour; stamens 2, free; anthers linear; female flowers unknown. **Z.** Native of the temperate provinces of New Andalusia, near Bordones and Cumanacoa.


7 A. *Trifoliata* (Lin. spec. 1576.) stems thickish, terete, rugged; tendrils simple; leaves palmately ternate; leaflets entire: lateral ones unequal-sided; male flowers in racemes purple; tube of calyx long and ventricose; peduncles short; fruit irregularly ovate-oblong, bluntly mucronate, 4-celled, green, lined with white; flesh of fruit red, and sweet. **Z.** Native of St. Domingo.—Plum. Amer. t. 99. 

**Trifoliate Anguria.** Fl. June, July. Pl. cl.

Cult. The species of this genus delight in a light rich soil, and may be propagated either from seeds or cuttings.

† *Genera allied to Cucurbitaceae, but are not sufficiently known.*


**Lin. syst.** unknown. Flowers solitary, axillary. Bractea large, concave, involving a large, coloured, 5-sepal'd calyx, and girded by 5 scales at the base. Stamens 5.—A doubtful genus, said to be related to the order *Passifloraceae*; but according to St. Hilaire (mem. mus. 9. p. 190) it belongs to *Cucurbitaceae*, from the lateral situation of the tendrils.

1 Z. *Commerstonia* (Ser. in D. C. prod. 3. p. 319.) Native country unknown. 

**Commerstonia's Zucca.** Pl. cl. 

Cult. See Anguria for culture and propagation.


**Lin. syst.** *Tetradnia*, Monogynia. Flowers hermaphrodite. Calyx gamosepalous, girded by a short involucreum; segments 5, acutish, hairy. Corolla 4-petalled; petals roundish, very hairy, small. Stamens 4 or perhaps 8 joined by two; anthers 2-lobed? Style subulate; stigma acute. Berry fleshy, large, oblong, obtuse, pendulous, 1-celled. Seeds imbedded in the pulp, ovate, compressed, turned. 

1 A. *Papo's* (Lour. l. c.) a tree, with spreading unarmed branches; opposite digitate leaves; the lobes 5, oval, quite entire and pilose; flowers nearly terminal, pale; peduncles many-flowered. **S.** Native of the eastern coast of Africa, on the shores of Mozambique. *Jaraçá* Brasiliána, Pison, bras. p. 160. ex Lour. l. c. Flowers pale. Fruit brownish-red. 

**Papo's Allasia.** Tree.

Cult. A light rich soil will suit this tree, and cuttings will strike root in the same kind of soil under a hand-glass in heat.


**Lin. syst.** Pentandria, Monogynia. Flowers hermaphrodite. Calyx funnel-shaped, 5-parted, coloured. Scales 5, linear, petal-formed, pellucid, alternating with the calyxine segments. Stamens 5, free, alternating with the scales. Ovarium inferior. Style 1, crowned by a subcapitate stigma. Berry dry, nearly globose, 1-seeded, crowned by the dry permanent calyx.—Climbing herbs, adhering by tendrils, with leaves like those of *Bryonia*. Peduncules opposite, rather umbellate. Flowers disposed in unilateral spikes, cymose, sessile, bracteate.


Cult. Being a tender annual plant, the seeds of it require to be sown on a hot-bed; and after the plants have grown a sufficient size in the seed-pot, they should be potted off singly into other pots, and after a time placed in the stove, and trained upon sticks.

**XXV. Kolibia** (this genus is dedicated to Peter Kolbe or Kolben, a German traveller, who published a description of the Cape of Good Hope). Beav. fl. d'ou. 2. p. 91 t. 120. D. C. prod. 3. p. 320.

**Lin. syst.** Dioica, Monophylla. Flowers dioecious. Male flowers with a gamosepalous calyx, composed of 5 joined sepals, having a crenulated margin; the corolla is gamopetalous, and 5-lobed; lobes lanceolate, with glandular edges. Nectarium? 5-leaved, having lanceolate lobes, which taper to the base, with their edges plumously ciliated. Stamens 5, monadelphous; filaments short; anthers long, conniving. Pistillum unknown.

1 K. *Elegans* (Beauv. l. c.) stem sarmentose, bearing tendrils; leaves glabrous, petiolate, cordate; peduncles 4-flowered. **S.** Native of the western coast of Africa, in the kingdom of Benin. Flowers red. Nectarium blue.

**Elegant Kolibia.** Pl. cl.

Cult. A light rich soil will suit this elegant plant, and cuttings will root in the same kind of mould under a hand-glass in heat.

**ORDER CIV. Papayaæ.** (this order contains only the Papaw trees). Martius, 1829.—Papaya, Agardh. 1824.—Caricée, Turp. in atl. du dict. des se. nat.

Flowers unisexual. Calyx inferior, minute, 5-toothed. Corolla monopetalous; in the male tubular, with 5 lobes and 10 stamens, all arising from the same line, and of those that are opposite the lobes are sessile, the others on short filaments; anthers adnate, 2-celled, bursting longitudinally; in the female divided nearly to the base into 5 segments. Ovarium superior, 1-celled, with 5 parietal polyspermy placenta. Stigma sessile, 5-lobed, lacerated. Fruit succulent, indehiscent, 1-celled, with 5 polyspermy parietal placenta. Seeds enveloped in a loose mucous coat, with a brittle pitted testa. Embryo in the axis of the fleshy albumen, with flat cotyledons, and a terete radicle, turned towards the hilum.—Trees, without branches, yielding an acid milky juice. Leaves alternate, palmately lobed, standing on long terete petioles.

It was the opinion of Jussieu that the genus upon which this
order is founded, held a sort of middle station between Urticaceae and Cucurbitaceae. Augustine St. Hilaire has, however, well remarked upon this subject, that the only relation that it has with Urticaceae consists in the separation of the sexes, its milky juice, its habit, which is like that of some species of Ficus or Fig, its foliage, which is not very different from the Cecropia, and the position of its stigma; and to these he wisely attaches very little importance. Its fruit brings it near Cucurbitaceae; but its true place is probably nearer to Passifloraceae, with which it altogether agrees in the appearance of its tests, in its unilocular fruit, with parietal polyspermous placentas, and its having a calyx and corolla present, differing, however, widely in its habit, and monopetalous flowers.

The fruit of the Papaw is eaten when cooked, and is esteemed by some persons; but it appears to have little to recommend it. Its great peculiarities are, that the juice of the unripe fruit is a most powerful and most efficient vermifuge; the powder of the seed even answers the same purpose; and that a principal constituent of this juice is febrine, a principle otherwise supposed peculiar to the animal kingdom, and to fungi. The tree has moreover, the singular property of rendering the toughest animal substances tender, by causing a separation of the muscular fibre; its very vapour even does this.

I. CA'RICA. (erroneously supposed to be a native of Caria). Lin. gen. no. 1157. Schreb. 1536.—Papayá, Tourn. 441. Juss. 399.

LIN. SYST. Dia'c'ia, Decândria. Character the same as the order.

1. C. PAPA'YA (Lin. spec. 1466.) leaves palmately 7-lobed; segments deeply lobed, oblong, acute; male flowers corymbose. Ñ.S. Native of both Indies.—Rumph. amb. t. 1. t. 50, 51.—Merian, Surin. t. 40. Rhed. mal. t. 1. t. 15. f. 1. Hook. bot. mag. 2898. Ker. bot. reg. 459. The papaw tree is a native of South America and the West Indies, whence it was brought by the Spaniards and Portuguese to the Philippines and the Moluccas; and from these Islands, it being of very quick growth, it spread to all the other countries of India. In three years from seed a papaw tree will be 20 feet high, and loaded with flowers and fruit; and for the sake of this fruit the plant is generally cultivated; it has a pleasant sweetish taste, and is much liked by many people; when young it is generally used for sauce; and when boiled and mixed with lime-juice and sugar, is not unlike, or much inferior to, that made of real apples, for which it is commonly substituted. But Sloane says, the fruit is not in general gathered before it is ripe; cut into slices, soaked in water till the milky juice is out, and then boiled and eaten as turnips, or baked as apples. The juice of the pulp, according to Descourtis, in the "Flore Medicale des Antilles," is used as a cosmetic to remove freckles on the skin, caused by the sun; and the negroes in the French colonies employ the leaves to wash their linen instead of soap. As a medicinal plant the papaw tree is particularly deserving of notice. Hernandez long ago spoke of the milky juice of the unripe fruit as a powerful vermifuge; which has been confirmed by M. Charpentier-Cossigny, as mentioned in the Asiatic Researches by Dr. Heming (vol. 2. p. 162.). A single dose, that gentleman says, is sufficient to cure the disease, however abundant the worms may be. Another writer (Poupee Desports) recommends the use of the powder of the seed instead of the juice. But the most extraordinary property of the papaw tree, is that which is related first, I believe by Browne, in his natural history of Jamaica, namely, that "water impregnated with the milky juice of this tree is thought to make all sorts of meat washed in it tender: but 8 or 10 minutes' steeping, it is said, will make it so soft that it will drop in pieces from the spit before it is well roasted, or turn soon to rags in the boiling." This circumstance has been repeatedly confirmed, and moreover, that old hogs and old poultry which are fed upon the leaves and fruit, however tough the meat they afford might otherwise be, is thus rendered perfectly tender, and good if eaten as soon as killed, but that the flesh passes very soon into a state of putridity. In the third volume of the Wernerian Society's Memoirs there is a highly interesting paper on the properties of the juice of the papaw tree, by Dr. Holder, who has witnessed its effects in the Island of Barbadoes, and speaks of them as known to all the inhabitants. The juice causes a separation of the muscular fibres. Nay, the very vapour of the tree serves this purpose; hence many people suspend the joints of meat, fowls, &c. in the upper part of the tree in order to prepare them for the table. Such is the effect upon hogs that feed upon the fruit, that the good housewives reject the flesh of such it be destined for salting, well knowing that it is not sufficiently firm for the purpose. It is not known whether the power of hastening the decay of meat be attributable to the animal matter or febrine contained in the juice of the Papaw. Two specimens of the juice were brought from the Isle of France; in the one the juice had been evaporated to dryness, and in the other the juice was preserved by being mixed with equal bulk of rum. "Both were subjected to analysis by Vauquelin. The first was of a yellowish white-colour, and semitransparent; its taste was sweetish, and it had no smell, and was pretty solid; but attracted moisture when kept in a damp place. The second was reddish brown, and had the smell and taste of boiled beef. When the first specimen was macerated in water, the greatest part of it dissolved; the solution frothed with soap. The addition of nitric acid coagulated it, and rendered it white; and when boiled, it threw down abundance of white flakes. When the juice of the papaw tree is heated with water, the greatest part dissolves; but there remains a substance insoluble, which has a greasy appearance. It softens in the air, and becomes viscous, brown, and semitransparent. When thrown on burning coals it melted, let drops of grease exude, emitted the noise of meat roasting, and produced a smoke which had the odour of fat volatilized. It left behind it no residue. The substance was febrine. The resemblance between the juice of the papaw tree and animal matter is so close, that one would be tempted to suspect some imposition, were not the evidence that it is really the juice of the tree quite unquestionable. Thomson's System of Chemistry, extracted from the Annales de Chimie, vol. 43. p. 267. Febrine had been previously supposed to belong exclusively to the animal kingdom; but it has since been found in other vegetables, especially in Fieschi. The name papaw is abridged from papua-marum, its name in Mabulbar.


2. C. corymbo'us (Jacq. fil. ex Spreng. syst. 8. p. 905.) leaves palmately 7-cleft; segments oblong, acute, middle one trifid; fruit oval, smooth. Ñ.S. Native of Peru, about Lima. Flowers yellow. Fruit the shape and size of an orange, edible like the rest.

Citron-formed Papaw. Ct. 1820. Tree 10 to 20 feet.

3. C. pyriformis (Willd. spec. 4. p. 815.) leaves cordate, 3-lobed; lobes angular; angles acute; flowers corymbose; fruit pear-shaped. Ñ.S. Native of Peru, and Chili, on rocky cliffs along the shore of Valparaíso. Feuille, per. 2. p. 52. t. 39. f. 1. C. Prosopósa, Lin. spec. 1466. ? Flowers rose-coloured. Fruit
yellow, pear-shaped. A doubtful species of the genus, from its small size and branched stem.

**Pear-shaped Papaw.** Clt. 1823. Shrub 3 to 6 feet.

4. **C. caulisflora** (Jacq. schenbr. 3. p. 33. t. 311.) leaves palmately 5-lobed; intermediate lobe sinate; segments lanceolate, acuminate; male peduncles usually 5-flowered, rising from tubercles on the trunk. ≠. S. Native of South America, in the province of Caraccas and of Trinidad. Flowers yellowish.

**Stem-flowered Papaw.** Clt. 1806. Tree 10 to 20 feet.

5. **C. microcarpa** (Jacq. schenbr. 3. p. 32. t. 309 and 310.) leaves 3 or 5-lobed; intermediate lobe 3-lobed; male flowers corymbose. ≠. S. Native of Caraccas and Chili. Flowers yellowish. Fruit the size of a cherry.

**Var. b. monoleca** (Desf. in Ann. Mus. 1. p. 273.) lower leaves entire (smaller), caudine ones 3-lobed, upper ones 5-lobed; lobes somewhat pinnatifid; flowers monocious, subracemose, erect. ≠. S. Native country unknown. Petioles channelled.

**Small-flowered Papaw.** Tree 10 to 12 feet.


**Spiny Papaw.** Clt. 1821. Tree 20 to 30 feet.

**Cult.** These trees grow well in any light rich soil. They may be brought into a fruit bearing state in our stoves, by planting them in large pots, or in tubs made for the purpose.


**Calyx** of 5 (f. 5. a.) or 10 sepals (f. 4. a. f. 6. a. f. 7. a.), combined into a short or elongated tube (f. 7. c.), free at the apex, disposed in 1 or 2 series; outer lobes large, foliaceous; inner ones alternating with the outer ones, and more petal-like than them, sometimes these last are wanting altogether; the sides or throat are lined by filamentous (f. 4. a.) or annular (f. 5. b. f. 6. c.) or membranous coloured processes, which are disposed in one or more series, having the bottom usually closed by a lid-formed appendage. Petals 5 in the tribe Paropsisææ, but wanting altogether in the tribe Passifloreæ. Stamens 5 (f. 4. b. f. 5. d. f. 7. c.), but indefinite in the genus *Smaethannia*. Filaments opposite the exterior lobes of the calyx, joined into a long tube which sheaths the stipe of the ovarium; anthers fixed by the back, peltate (f. 4. b. f. 5. c.), reflexed, turned outwards, but reversed they are turned inwards, 2-celled, bursting lengthwise. Torus elongated into a long cylindrical stipe. Ovary seated on the stipe, ovate, free. Styles 3, rising from the same point (f. 6. c. f. 5. d. f. 4. d.), crowned by a stigma each, which is somewhat 2-lobed. Fruit naked (f. 7. g.), or surrounded by the calyx (f. 8. a.), stalked, 1-celled, 3-valved, having a polyspermy parietal placenta in the middle of each valve; the valves sometimes dry and dehiscing, sometimes fleshy and indehiscent. Seeds attached in several rows to the placentas, usually clothed with a large pulpy aril, compressed, and generally scrobiculate. Embryo straight, in the centre of the fleshy thin albumen, having a terete radicle, which is turned towards the hylum; cotyledons flat and foliaceous.—Herbs or shrubs for the most part climbing. Leaves of many forms, alternate, stipulate, usually bearing glands on the limb or petiole. Peduncles axillary, some of which are changed into tendrils from abortion, others are simple, and bear 1 flower each, very rarely branched and many-flowered; however, all the peduncles are florisiferous in the upright species, or those that do not climb: always articulated under the flower, and generally furnished with a 3-leaved involucrum at the articulation.

The real nature of the floral envelopes of this remarkable order, is a question upon which botanists entertain very different opinions, and their ideas of its affinities are consequently much at variance. According to Jussieu (Dict. scienc. vol. 38. p. 49.) the "parts taken for petals are nothing but inner divisions of the calyx, usually in a coloured state, and wanting in several species;" and therefore, in the judgment of this venerable botanist, the order is apetalous, or monochlamydeous. De Candolle adopts the same view of the nature of the floral envelopes as Jussieu; but he nevertheless considers, we think with propriety, the order polypetalous. Other botanists consider the outer series of the floral envelopes as the calyx, and the inner as the corolla; the one is green and the other coloured. The nature of the filamentous appendages, or rays as they are called, which proceed from the orifice of the tube, and of the membranous or fleshy, entire or lobed, flat or plaited annular processes, which lie between the petals and the stamens, are ambiguous, but are probably abortive stamens. With regard to the affinity of *Passiflora*, Jussieu, swayed by the opinion he entertains of their being apetalous, and De Candolle, who partly agrees and partly disagrees with Jussieu in his view of their structure, both assign the order a place near *Cucurbitaceæ*; but when we consider the stipitate fruit, occasionally valvular, the parietal placentas, the sometimes irregular flowers, the stipulate leaves, and the climbing habit of these plants, it is not difficult to admit their affinity with *Capparidææ* and *Violaridææ*, the dilated disk of the former of which is probably analogous to the innermost of the annular processes of *Passifloreæ*.

The plants composing the *Passiflora*, are the produce of South America and the West Indies, where the woods are filled with their species, which climb about from tree to tree, bearing at one time flowers of the most striking beauty, and of so singular an appearance, that the zealous Catholics who discovered them adapted Christian traditions to these inhabitants of the South American wildernesses, and at other times fruit tempting to the eye and refreshing to the palate. Several are found in Africa, and a few in the East Indies, of which the greater part belong to the genus *Modæcæ*.

Nothing is known of the properties of this order, further than that the succulent fruit and pulp that surround the seeds are fragrant, juicy, cooling, and pleasant in several species.

**Synopsis of the genera.**

**Tribe I.**

**Paropsisææ.** Petals 5. Ovarium sessile. Upright shrubs without tendrils.

1. **Smaethannia.** Nectarium 1-leaved, urceolate, surrounding the base of the stamens. Stamens indefinite; anthers incumbent. Stigmas 5, peltate. Capsule inflated, papery, 4-5-valved.
2 Paropsis. Capillary threads simple, disposed in 5 bundles, rising from the base of the calyx. Stamens 5; anthers erect. Capsule bladdery, 3-valved.

Tribe II.


3 Passiflora. Tube of calyx very short, having the throat ornamented with a filamentous crown (f. 4. a.). Berry usually pulpy, rarely membranous.

I. Dise'mma. Tube of calyx short, furrowed below, having a double crown in the throat; the outer crown composed of distinct threads, the inner one with the threads joined into an entire or toothed membrane. The rest as in Passiflora.

5 Tac'sonia. Tube of calyx long (f. 7. c.); limb 5-lobed. Petals 5. Throat of calyx furnished with a scaly membrane.

6 Murucu'ia. Tube of calyx furrowed below; crown of throat simple, erect, tubular, truncate (f. 5. b. f. 6. c.). Habit of Passiflora.


9 Deid'amia. Calyx 5-8-parted; lobes petaloid; filamentous crown simple, rising from the outer part of the calyx. Stamens the same number as the lobes of the calyx; filaments joined into a column at the base. Styles 3-4. Capsule pedicellate, 3-4-valved.

10 Vare'ca. Flowers unknown. Berry 1-celled; pulp divided for the seeds in many partial cells. Placentas 3, parietal, polyspermous.

Tribe I.


1 S. Fure'scens (Sol. in herb. Bank. ex R. Br. in Lin. trans. vol. 13. p. 221.) branches downy; leaves oblong-ovate; top of nectarium bearded. f. S. Native of Sierra Leone, in the low lands.

Downy Smeathmannia. Fl. Mar. Shrub 6 to 8 feet.

2 S. Leviga'ta (Sol. l. c. ex R. Br. l. c.) branches glabrous; leaves oblong, acute at the base, shining; nectarium cut, beardless. f. S. Native of Sierra Leone, in the mountains, where we have seen it growing in great plenty, and where it forms beautiful upright bushes, loaded with delicate white flowers.


3 S. Me'dia (R. Br. in Lin. trans. 13. p. 221.) branches glabrous; leaves obovate-oblong, obtuse at the base, glabrous, rather opaque. f. S. Native of Sierra Leone. Flowers white. Intermediate Smeathmannia. Shrub 6 to 8 feet.

Cult. These elegant shrubs grow best in a mixture of loam, peat, and sand; and young cuttings of them strike root freely in the same kind of soil under a bell-glass, in heat.

II. Parop'sia (from paropsis, paropsis, a dish of meat; the seeds are inclosed in a fleshy arillus, of an agreeable sweet taste, much esteemed by the natives of Madagascar, as well as by Europeans). Du Pet. Th. pl. afr. 2. p. 59. t. 19. D. C. prod. 3. p. 322.


Edible Paropsis. Shrub 5 to 6 feet.

Cult. For culture and propagation see Smeathmannia.

Tribe II.

Passiflo'ree-veriæ (true passion-flowers). Calyx with a 5-parted limb. Petals 5 or wanting. Stamens 5 in all, except one plant, which has only 4. Ovarium pedicellate. Some of the pedicels changed into tendrils. Stems generally climbing.


Linn. syst. Monadelphia, Pentandria. Tube of calyx very short, having the throat ornamented with a multiple filamentous crown (f. 4. a.). Berry generally pulpy, rarely somewhat membranous.


1 P. Glau'ca (Humb. et Bonpl. pl. equin. l. t. 22.) arboreous; leaves obovate-oblong, glaucous beneath, and bearing glands in the axis of the veins; petioles glandless; peduncles dichotomous, 3-5-flowered. f. S. Native of South America, on Mount Quindiu. P. amethystina, Mikan. P. arborea, Spreng. syst. 3. p. 42. Flowers white. Crown tipped with yellow.

Glaucous Passion-flower. Tree 20 to 30 feet.

2 P. Emarginata (Humb. et Bonpl. l. c. t. 23.) arborescent; leaves obovate-lanceolate, acuminated, or emarginate, pubescent, and biglandular at the base; petioles glandless; peduncles dichotomous, 3-5-flowered. f. S. Native of Peru, on the Andes. Flowers white?

Emarginate-leaved Passion-flower. Shrub 10 to 16 feet.

3 P. Ovata (Martin. ined. D. C. prod. l. c.) arborescent; leaves oval, obtuse at both ends, somewhat cuneated at the base, glabrous, glandless beneath; petioles biglandular at the apex; peduncles 2-flowered. f. S. Native of French Guiana.

Ovate-leaved Passion-flower. Shrub.
Sect. II. Polyantēma (from τον, many, and ἀνϑος, a flower; in reference to the peduncles bearing many flowers). D. C. mem. soc. gen. 1. pt. 2. p. 455. prod. 3. p. 322. Peduncles many-flowered, sometimes twin, with a tendril in the middle, sometimes solitary, and branched, the middle ending in a tendril. Involucrum wanting or very small. Limb of calyx 5-lobed. Petals 5. Stems climbing.

4 P. cripitifīla (Juss. in ann. mus. 6. t. 41. f. 1.) leaves pedate; glandular; petiole branched, biglandular above the base; leaflets 7, ovate, with 1 tooth on each side at the base; peduncles bearing flowers and tendrils. h. S. Native of French Guiana, in woods. Form of leaves like those of P. pedata. Crown variegated with white, yellow, and red.

Tendril-flowered Passion-flower. Shrub cl. 5 P. septera'da (D. C. prod. 3. p. 322.) leaves pedate; petioles branched, glandless; leaflets oblong, having 1 tooth on each side at the base; tendrils simple, distinct from the peduncles. h. S. Native country as well as the flowers unknown.

Septenata-leaved Passion-flower. Shrub cl. 6 P. holoserica (Lin. amèn. 1. p. 226. f. 15.) clothed with soft velvety down; leaves ovate, somewhat 3-lobed, arisately toothed at the base; petioles biglandular. h. S. Native of Vera Cruz. Sims, bot. mag. t. 2015. Ker. bot. reg. t. 59. Flowers white, spotted with red. Rays variegated with purple and white.

Whole-silky Passion-flower. Fl. May, Aug. Clt. 1733. Sh. cl. 7 P. sexflora (Juss. l. c. t. 87. f. 1.) clothed with soft velvety down; leaves at the base, very broad, truncate at the apex, 3-lobed; petioles glandless. h. S. Native of St. Domingo and Jamaica.

Six-flowered Passion-flower. Shrub cl. 8 P. geminiflora (D. C. prod. 3. p. 322.) pubescent; leaves cuneated at the base, very broad, truncate, sinuateally 3-lobed at the apex, glandular beneath and shining above; petioles glandless. h. S. Native of Brazil.

Twin-flowered Passion-flower. Shrub cl. 9 P. Molluc'ca (Reinw. in Blum. bijdr. p. 938.) leaves oblong, mucronate, somewhat emarginate at the base, quite entire; petioles biglandular; cymes bifid, many-flowered. h. S. Native of the Moluccas.

Mollucca Passion-flower. Shrub cl.


10 P. tetrandra (Banks, herb. ex D. C. prod. 3. p. 323.) glabrous; leaves oval-oblong, acuminate, quite entire, glansless. h. S. Native of New Zealand. Flowers small, greenish.

Tetrandrous Passion-flower. Shrub cl.


11 P. pa'lida (Lin. amèn. 1. p. 218. t. 10. f. 2. exclusive of the synonyms) leaves glabrous, ovate, acuminate, 3-nerved; petioles biglandular above the middle; pedicels 1-3 together. h. S. Native of St. Domingo and Brazil.—Plum. amer. p. 73. t. 83. Ker. bot. mag. t. 660. Flowers small, yellowish-green.

Pale-flowered Passion-flower. Fl. Aug. Sept. Clt. ? Sh. cl. 12 P. c'u'pra (Lin. amèn. 1. p. 219. t. 10. f. 3.) leaves glabrous, ovate, glandular beneath, between the axes; petals glandless; pedicels solitary. h. S. Native of the islands of Providence and Bahama, Jacq. ian. rar. 3. t. 606. Flowers blood-coloured, an inch and a half in diameter. Berries purplish.


Cavanilles's Passion-flower. Clt. 1822. Shrub cl. 14 P. Multifi'ora (Lin. amèn. 1. p. 221. t. 10. f. 7.) leaves ovate-oblong, entire, clothed with velvety down beneath; petals very short, biglandular at the apex; pedicels numerous in the axils of the leaves. h. S. Native of St. Domingo, Cav. diss. 10. t. 272. There are varieties with the leaves either glandular or downy above. Plum. amer. t. 90. Flowers greenish. Style purplish.

Many-flowered Passion-flower. Fl. June, Sept. Clt. 1731. Shrub cl. 15 P. auriculatu'a (H. B. et Kunth, nov. genera. 2. p. 131.) leaves glabrous, ovate, rounded at the base, glandular beneath; pedicels auricled by 2 glands beneath the middle; pedicels 1 or 2 together. h. S. Native of the banks of the Orinoco, in shady places, at the cataract of Maypure. Flowers whitish, but the calyx is greenish on the outside.

Auricled-leaved Passion-flower. Fl. June, Aug. Clt. 1820. Shrub cl. 16 P. Nipa'ul'ensis (Wall. tent. t. 11.) smooth; leaves coriaceo-acute, quite entire, 3-nerved, glandular beneath and on the petals; pedicules bracteate, aggregate; crown triple, exceeding the calyx. h. S. Native of Nipaul, on woody hills in the great valley. Leaves glaucous, furnished with 2 glands underneath at the insertion of the nerves, and 2 in the middle of the petals. Peduncles 2-3-flowered. Flowers small, white, with an greenish crown. Berry yellow, about the size of a small cherry.

Nipaul Passion-flower. Shrub cl. 17 P. littora'alis (H. B. et Kunth, l. c. p. 138.) leaves beset with silky hairs on both surfaces, hastately 3-lobed, and nearly entire; petals bearing 2 stipitate glands above; pedicels 2-3 together. h. S. Native of Peru, on the sea-shore near Patibela, and in the valley of Lima. Flowers with a green calyx.

Sea-shore Passion-flower. Shrub cl. 18 P. glab'ra (H. B. et Kunth, l. c. p. 135.) leaves glabrous, shining, glandular beneath, half orbicular, truncate 2-lobed; lobes very short, spreading; pedicels glandless; pedicels solitary, or twin. h. S. Native of New Granada, near Turbaco. Related to Murucija accellati. Flowers small, white; crown yellow.

Smooth Passion-flower. Shrub cl. 19 P. rude'scens (H. B. et Kunth, l. c. p. 132.) leaves semi-ornicular at the base, lunately 2-lobed; lobes ovate-oblong, acute, divaricate, with an awn in the recess between the lobes, and are as well as the petals downy and glandless; pedicels solitary. h. S. Native of South America, in shady places of the province of Caraccas. P. Lockhartsii, G. Don, in Loud. hort. brtt. p. 269. Flowers small, greenish white.

Downy Passion-flower. Shrub cl. 20 P. biloba (Juss. ann. mus. 6. p. 107. t. 37. f. 2.) leaves smooth, 2-lobed, rounded at the base, 3-nerved, glandless; lobes
obtuse, emarginate, rather diverging; pedioles short, glandless; pedicels twin. 3. S. Native of St. Domingo. Taezonia biloba, Spreng. syn. 3. p. 44. Flowers very small, greenish?

**Two-lobed-leaved Passion-flower.** Shrub cl.

21. **P. Mexicana** (Juss. l. c. p. 108. t. 38. f. 2.) leaves glabrous, 2-lobed, rounded at the base, 3-nerved; lobes oblong, diverging a little, glabrous beneath; pedioles short, glandless; pedicels twin. 3. S. Native of Mexico, about Acapulco. Flowers small, whitish.

**Mexican Passion-flower.** Clt. 1820. Shrub cl.

22. **P. Dictaemo** (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 3. p. 324.) leaves glabrous, 2-lobed, somewhat emarginate at the base, 3-nerved, glandless beneath; lobes oblong, divericate; pedioles glandless; pedicels twin. 3. S. Native of New Spain, where it is called Dictamo.

** Dictamo Passion-flower.** Shrub cl.

23. **P. Normaiis** (Lin. amen. 5. p. 408.) leaves glabrous, 3-nerved at the base, somewhat cordate, glandular beneath, somewhat 3-lobed; middle lobe small; lateral ones so much divericate as to form a straight angle; pedioles very short, glandless. 3. S. Native of Jamaica. Brown, jam. 3. p. 328. Flowers small, pale colored. Fruit purple, downy.

**Normal Passion-flower.** Fl. May, June. Clt. 1771. Sh. cl.

24. **P. Bauhinifolia** (H. B. et Kunth. l. c. p. 132.) leaves downy beneath, and rather glandular, elliptic, rounded at the base, 2-lobed at the apex; lobes obtuse; pedioles glandless, downy; pedicels solitary or twin, downy. 3. S. Native of Quito, in temperate places. Flowers small, whitish.

**Bauhni-leaved Passion-flower.** Shrub cl.

25. **P. Triesthoma** (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 3. p. 324.) leaves glabrous, glandular beneath, ovate, 3-nerved, equally 3-lobed at the apex; lobes mucronated by a bristle each; pedioles glandless; pedicels twin. 3. S. Native of Mexico.

**Three-bristled Passion-flower.** Shrub cl.

26. **P. Miserum** (H. B. et Kunth. nov. gen. amer. 2. p. 136.) leaves glabrous, reticulately 3-nerved, cordate, 3-lobed; lobes obtuse, emarginate, and are, as well as the pedioles, glandless; pedicels solitary. 3. S. Native of South America, between Turbaco and Carthagena, in very hot places. Flowers small, with a greenish calyx, and violaceous crown.

**Miserable Passion-flower.** Shrub cl.

27. **P. Coricine** (Juss. in ann. mus. 6. p. 109. t. 39. f. 2.) leaves smooth, coriaceous, glandular beneath, peltate, 3-lobed; middle lobe obtuse; lateral ones acuminate, 2-nerved; pedioles biglandular in the middle; pedicels twin. 3. S. Native of South America, near Hodua; and perhaps also in Mexico, according to icon. fl. mex. ined. Flowers small, greenish.

**Coricaceous-leaved Passion-flower.** Shrub cl.

28. **P. Diffrigurum** (H. B. et Kunth. l. c. p. 136.) leaves glabrous, coriaceous, glandular beneath, peltate, somewhat 3-lobed, transversely lanceolate; pedioles biglandular in the middle; pedicels solitary. 3. S. Native of New Granada, in temperate places on the Andes. Allied to *P. coricine*.

Perhaps the same as the figure in Herrn. mex. p. 455. upper figure. Flowers with a greenish calyx, and violaceous crown tipped with yellow.

**Deformed Passion-flower.** Shrub cl.

29. **P. Augustifolia** (Swartz. prod. p. 97.) leaves glabrous, glandless, somewhat peltate; lower ones ovate, the rest lanceolate, 2 or 3-lobed; pedioles short, biglandular above the middle; pedicels solitary or twin. 3. S. Native of the Caribbean Islands. Ker. bot. reg. t. 180. P. heterophylla, Jacq. hort. schaenbr. t. 181. Cièca heterophylla, Mænch. P. longifolia, Lam. dict. 3. p. 40. Flowers yellowish, with the rays purple at the base.


30. **P. Maculata** (Scan. cat. hort. bon. et Coll. hort. rip. p. 101.) leaves glabrous, deeply 3-lobed, painted with white on the upper surface; lobes nearly equal, oblong, acute; upper ones bluntly trifid, intermediate one rather larger than the others; pedioles glandless; pedicels solitary or twin, rather pilose. 3. S. Native of Curassao. Pluk. t. 210. f. 3. Perhaps the same as P. minima of Lin. Flowers greenish.


31. **P. Graecis** (Link, enum. hort. berol. 2. p. 182.) leaves subcordate, glabrous, 3-lobed; lobes roundish, beset with 2-4 glands; pedioles biglandular; peduncles axillary, solitary; fruit egg-shaped. 3. S. Native country unknown. Lindl. bot. reg. t. 870. Flowers whitish. Rays blue and white.


32. **P. Lupea** (Lin. amen. 1. p. 224. t. no. 13.) leaves almost glabrous, cordate, trifid; lobes ovate, mucronate by a bristle, and are, as well as the pedioles, glandless; pedicels twin. 3. S. Native of Virginia and Florida, and of the West Indies. Jacq. icon. rar. 3. t. 607. Ker. bot. reg. t. 79. Flowers pale yellow.


33. **P. Minima** (Jacq. hort. vind. t. 20.) leaves glabrous, glandless, 5-nerved, trifid; lobes ovate, middle one drawn out most; pedioles biglandular at the apex; pedicels twin. 3. S. Native of South America. Sowerby in Lin. trans. 2. p. 27. t. 5. f. 6. Ker. bot. reg. t. 144. P. hederaeace, Lam. Flowers greenish yellow, with white rays. Nectarium fourfold, inner one with an entire brown rim, the outer plaited, of a dusky purple colour, the other ciliated, with capillary black hairs, with yellow tips; outlet one having the filamentous appendices twice as long as the others, dark purple at the base, and yellow from the middle to the tip.


34. **P. Hirsuta** (Lin. amen. 1. p. 227. t. 10. f. 16. exclusive of the synonyms of Herrn. and Pluk.) leaves rather hairy beneath, glandless, somewhat 5-nerved, 3 cleft; lobes ovate, middle one much the largest; pedioles biglandular above the middle; pedicels twin. 3. S. Native of the West Indies. Plum. amer. t. 88. A.-B. P. parvifolia, Swartz. prod. p. 97. Flowers whitish.


35. **P. Suberosea** (Lin. l. c. p. 226. t. 10. f. 14.) leaves glabrous, somewhat ciliated, 5-nerved at the base, ovate, somewhat cordate, usually 3-lobed; lobes ovate, acute; middle one larger than the rest; pedioles biglandular above the middle; pedicels twin. 3. S. Native of the West Indies and South America. Smith, exot. bot. 1. t. 28. Plum. amer. t. 84. Jacq. schaenbr. 2. t. 163. Flowers of a greenish yellow colour; crown purple at the bottom. Fruit purple when ripe.


36. **P. Pelta** (Cay. diss. 10. p. 447. t. 275.) leaves pubescent above, glandless, 3-nerved, rather peltate, 3-lobed beyond the middle; lobes lanceolate, divaricate; pedioles biglandular in the middle; pedicels solitary. 3. S. Native of the Antilles, in hedges, as well as in Virginia. Ker. bot. reg. 505. —Plum. amer. t. 85. Flowers greenish.


37. **P. Hederaecea** (Jacq. l. c. p. 448.) leaves somewhat puberulous, glandless, 3-nerved, trifid; lobes ovate, obtuse; pedioles biglandular in the middle; pedicels solitary. 3. S.
Native of the Antilles, in hedges. Plum. amer. t. 54. Flowers whitish?


37 P. fannos (Smith in Rees' cyclo. no. 28.) leaves clothed with velvety hairs on both surfaces, glandless, cordate, unequally 3-lobed, rarely 2-lobed; lobes obtuse; petioles velvety; pedicels bearing 3 bracteoles each. h. S. Native of the West Indies. Allied to P. rubra. Flowers small, greenish.

Cloth-leaved Passion-flower. Shrub cl.

39 P. Berti eriana (Balb. in litt. ex D. C. prod. 3. p. 325.) leaves glabrous, glandless, divided into 3 parts even to the base; leaflets petiole, trifid, attenuated at the base, and very blunt at the apex; pedicels solitary or twin. h. S. Native of St. Domingo.

Berti eria's Passion-flower. Shrub cl.

50 P. perfoliata (Linn. l. c. p. 222. t. 10. f. 8.) leaves glabrous, cordate at the base, glandular beneath, somewhat 3-lobed; middle lobe very short; petiole glandless, very short; petioles solitary or twin, rather downy. h. S. Native of Jamaica, in hedges on the mountains. Ker. bot. reg. t. 78. Murucoucha perfoliata, Spreng. syst. 3. p. 43.—Sloan, jam. 1. p. 230. t. 142. f. 3. 4. Flowers crimson or scarlet; rays fleshy, green, with blunt scarlet tips.


41 P. xeront (Linn. acmen. 1. p. 222. t. 10. f. 9.) leaves velvety, cordate at the base, 2-lobed, with an awn in the recess between the lobes, glandless beneath, and on the petioles; pedicels solitary; ovary hairy, subglobose. h. S. Native of the West Indies and the adjacent continent. Plum. americ. t. 55. Ker. bot. reg. t. 95. Stem reddish, hairy. Flowers of a greenish yellow colour; crown red. Berry red.


42 P. capsularis (Linn. l. c. p. 234.) leaves downy, cordate at the base, 2-lobed, with an awn in the recess between the lobes, and are, as well as the petioles, glandless; pedicels solitary; ovary elliptic-oblong, and is, as well as the fruit, acutely hexagonal, glabrous. h. S. Native of the West Indies. Plum. icon. amer. t. 138. f. 2. The flowers are reddish according to Plummer, but according to other authors they are whitish. Fruit small, purple when ripe.

Var. ß, acutiloba (D. C. prod. 3. p. 325.) leaves deeply 2-lobed, hardly pubescent above, painted with white. h. S. Native of Brazil.

Var. γ, geminifolia (D. C. l. c. 1.) leaves glabrous, hardly cordate at the base; branches triangular; pedicels twin. h. S. Native of Jamaica. P. capsularis, Smith in Rees' cyclo. no. 22.


43 P. bi flora (Lam. dict. 1. no. 56.) leaves glabrous, glandular beneath, cordate at the base, 3-nerve, truncate, somewhat 2 or 3-lobed; petioles short, glandless; pedicels twin. h. S. Native of the West Indies and South America. P. lumata, Smith, icon. pict. t. 1. Ker. bot. reg. 577. P. Vesperil, Lowr. pass. t. 8. Flowers white; rays of crown yellow. The Mexican plant differs in the leaves being roundly euneate at the base, not cordate, and in the lobes being less divaricate.

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44 P. Leschenaulti (D. C. prod. 3. p. 326.) leaves semi-orbicular at the base, somewhat truncate at the apex, tricuspidate, pubescent on the nerves beneath, glandless; petioles biglandular in the middle; peduncles twin, 1-flowered. h. S. Native of the East Indies, among the Neegishee Mountains, where it is called by the inhabitants coxamkou. Bryonia tricuspidata, Lesch. Herb. Flowers unknown.

Leschenault's Passion-flower. Shrub cl.

45 P. Andersonii (D. C. l. c.) leaves glabrous, glandular beneath, cuneately-rounded at the base, 3-nerve, truncate at the base; subulate; petioles long, glandless; pedicels twin, hardly longer than the pedicels. h. S. Native of the Island of St. Lucia. Flowers party-coloured.


46 P. Rojhui (D. C. l. c.) leaves nearly glabrous, ovate, somewhat truncate at the base, 3-nerve, blunt and somewhat 3-lobed at the apex; petioles biglandular, rather velvety; pedicels solitary. h. S. Native of Cayenne, or Barbadoes. Rohr's Passion-flower. Shrub cl.

47 P. penduliflora (Bert. in herb. Balb. ex D. C. l. c.) leaves glabrous, roundly obovate, 3-nerve, glandular beneath; nerves extending beyond the border of the leaf; petioles glandless; pedicels solitary or twin, much longer than the pedicels, pendulous, bracteolate beneath the middle. h. S. Native of Jamaica, on the mountains. Flowers pale; threads of crown few and glabular.

Pendulous-flowered Passion-flower. Shrub cl.

48 P. hemicyclia (Meyer, prim. esseq. p. 225.) leaves glabrous, glaucous and glandular beneath, 3-nerve, cuneate, somewhat 3-lobed at the apex; petioles pubescent, glandless; pedicels twin, shorter than the pedicels. h. S. Native of Guiana, about Essequibo; and of Trinidad. Flowers white.


49 P. vespertilio (Linn. amen. 1. p. 223. t. 10. f. 11.) leaves glabrous, glandular beneath, 1-nerve, cuneate at the base, roundly 2-lobed, rarely somewhat 3-lobed; petioles very short, glandless; pedicels solitary. h. S. Native of South America.—Dill. hort. elth. t. 137. f. 164. Flowers white, small.


50 P. retusa (Hook. et Arnott, in bot. misc. 3. p. 235.) leaves smoothish, biglandular beneath, cuneate at the base, or rounded, 3-nerved, 3-lobed; lobes mucronulate, middle one truncate, lateral ones divaricate, prolonged; petioles glandless; peduncles solitary, exceeding the pedicels. h. S. Native of Brazil, on the banks of the Uruguay; and at Santa Bora. Closely allied to P. vespertilio.

Retuse-leaved Passion-flower. Shrub cl.

51 P. Maximiliana (Bory, ann. gen. 1819. vol. 2. p. 149. t. 24.) leaves glabrous, divergently 2-lobed, drawn out a little in the middle, somewhat cordate at the base, red and biglandular beneath; petioles glandless; pedicels solitary or twin, longer than the pedicels. h. S. Native of Brazil. P. discolor, Link et Otto, abh. 1. p. 13. t. 5. Lodg. bot. cab. t. 565. P. vespertilio, Ker, bot. reg. t. 597. This plant differs from P. vespertilio in the leaves being cordate at the base, not cuneate, blood-coloured beneath; and in the pedicels being three or four times longer. Flowers greenish; crown white.


52 P. Artabrous (H. B. et Kunth, nov. gen. amer. 2. p. 133.) leaves glabrous, glandular beneath, semi-orbicular at the base, 3-nerve, truncate at the apex, 2-lobed; petioles puberu-
ous and glandless; pedicels twin.  h.  w.  S. Native of Mexico, on the burning Mount Jurullo. Flowers greenish?

_Jorullo_ Passion-flower. Shrub cl.

53 P. _sicyoides_ (Schlecht. et Cham. in Linnae. vol. 5, p. 88,) leaves cordate, 3-lobed, sharply subdentate or quite entire, glaucous beneath, hairy, biglandular in the recesses, smoothest above; lobes triangularly acuminate, middle lobe the longest; petioles hairy, biglandular in the middle; glands large, elevate; stipules half ovate, cuspidately acuminate; peduncles twin; bracteas filiform, small, approximating the flower.  h.  w.  S. Native of Mexico, in woods near Jalapa. Flowers pale. Habit of _Bryonia._

_Sicyos-like_ Passion-flower. Shrub cl.

54 P. _elongata_ (Swartz. prod. p. 97,) leaves glabrous, glandular beneath, oblong, rounded at the base, 3-nerved, 3-lobed at the apex; petioles glandless; pedicels solitary.  h.  w.  S. Native of Jamaica, among bushes. _P. elongata_, Poir. suppl. 2. p. 839.


55 P. _lycrefolia_ (Tuss. ant. t. 4,) leaves glabrous, glandular beneath, ovate at the base, 3-nerved, 3-lobed at the apex; lobes straight, acuminate, middle lobe small; petioles glandless; pedicels solitary or twin.  h.  w.  S. Native of Jamaica, on Mount St. George. Probably sufficiently distinct from the preceding and following species.


56 P. _tuberosa_ (Jacq. hort. schembr. t. 496,) leaves glabrous, glandular beneath, rounded at the base, 3-nerved, 3-lobed at the apex; lobes oblong, acute, middle lobe very small; petioles glandless; pedicels twin; branches of root tuberous.  h.  w.  S. Native of South America. Ker. bot. reg. t. 492. _P. punctata_, Lodd. bot. cab. t. 110. Lower leaves usually painted with white on the upper surface. Flowers greenish white; outer crown green at the base, tipped with purple and white. Style purple.


Shrub cl.

57 P. _rotundifolia_ (Lin. l. c. p. 235,) leaves rather glandular, velvety beneath, nearly orbicular, 3-nerved, 3-lobed; pedioles glandless; pedicels twin; berries globose, hairy.  h.  w.  S. Native of the Antilles. Plam. icon. amer. t. 138. f. 1. Cav. diss. t. 290. Flowers whitish.

_Var. β, Jacquinii_ (D. C. l. c,) leaves glabrous beneath; pedicels solitary; leaflets of involucrum ovate.  h.  w.  S. Native of Carthagena, in the woods. _P. rotundifolia_, Jacq. obs. t. 46. f. 1. Petals whitish; rays of crown yellow.

_Var. γ, Swartzii_ (D. C. prod. 3. p. 327,) leaves glabrous beneath; berry ovate, glabrous.  h.  w.  S. Native of the south of Jamaica. _P. rotundifolia_, Swartz, obs. p. 337. Flowers greenish.


58 P. _alnifolia_ (H. B. et Kunth, nov. gen. amer. 2. p. 136,) leaves puberulous beneath, glandular, ovate, rounded truncate at the base, 3-nerved, roundly 3-lobed at the apex; middle lobe emarginate; petioles glandless, and are, as well as the pedicels, downy, and twin; berries spherical, glabrous.  h.  w.  S. Native of South America, on Mount Quindiu, at the river Cuello. Flowers large.

_Alder-leaved_ Passion-flower. Shrub cl.

59 P. _obscura_; leaves 3-lobed, somewhat cordate, truncate, velvety: lateral lobes divaricate; intermediate one obsolete, emarginate; petals emarginate, shorter than the calyx; tube of calyx rotate, depressed; inner crown pubescent, plicate, lying on the base of the stipe, in the disc, outer crown radiate; ovary vil-

ous.  h.  w.  S. Native of the north-eastern coast of South America, but in what place we gathered it is now forgotten. Flowers small, pale green, with a downy pedicel: the inner crown is downy and purple: the outer crown has its lower half purple, and its upper white. This species seems to come nearest to _P. alnifolia_ of Bonpland.


60 P. _moellis_ (H. B. et Kunth, 1. c. p. 127,) leaves canescent beneath, glandular, ovate-cordate at the base, 3-nerved, 3-lobed at the apex: lateral lobes very small; petioles glandless, and are, as well as the pedicels, pubescent; pedicels twin; berries glabrous, puberulous.  h.  w.  S. Native of South America, on Mount Quindiu. Flowers not seen.

_Soft_ Passion-flower. Shrub cl.

61 P. _punctata_ (Lin. amoen. 1. p. 224. t. 10. f. 12,) leaves glabrous, transversely oval, glandular beneath, 3-nerved at the base, and emarginately cordate, very bluntly 3-lobed at the apex; petioles glandless; pedicels solitary, longer than the petiole.  h.  w.  G. Native of Peru. Feuill. per. 2. t. 11. Flowers with whitish petals: and violet rays, tipped with yellow.

_Dotted-leaved_ Passion-flower. Shrub cl.

62 P. _bryonyoides_ (H. B. et Kunth, l. c. p. 140,) leaves hispid, cordate at the base, 5-nerved, palmately 5-lobed, sharply-toothed; pedioles biglandular at the apex, hairy; pedicels hairy, twin; berries ellipitic, glabrous.  h.  w.  S. Native of Mexico, near Santa Rosa. Flowers greenish.

_Bryony-like_ Passion-flower. Shrub cl.

_SECT. VI. GRANADILLA_ (Granadilla or Granadille is the French name of some Passion-flowers, so called from the resemblance of the fruit, in size and colour, to a pomegranate, with this difference, that it is not crowned by the calyx.) D. C. in mem. soc. gen. 1. pt. 2. p. 405. prod. 3. p. 327. — Anthactinia, Bory, ann. gen. 2. p. 138. Involucrum 3-lobed under the flower; leaflets entire or toothed, never jagged. Calyx 10-lobed; the 5 inner lobes are probably petals. Pedicels 1-flowered, rising from the same axis as the tendrils, which are simple.

* Leaves entire.*

63 P. _serratifolia_ (Lin. amoen. 1. p. 217. t. 10. f. 1,) leaves pubescent beneath, ovate-lanceolate, acute, serrated, feather-nerved; petioles bearing 4 glands, and are, as well as the pedicels, pubescent.  h.  w.  S. Native of South America. Cav. diss. t. 279. Sims. bot. mag. t. 63. Jacq. hort. schembr. 1. p. 4. t. 10. Mart. dec. 4. t. 36. Flowers with purple petals, and the filaments of the crown pale purple at the base, and from thence bluish.


64 P. _niftida_ (H. B. et Kunth, l. c. p. 130,) leaves glabrous, oblong-elliptic, acuminate, serrated, feather-nerved; pedioles biglandular.  h.  w.  S. Native in woods about the Orinoco. Very nearly allied to the preceding species. Flowers about the size of those of _P. corideae_, with a reddish calyx: crown with blue filaments, ringed with white.

_Shining-leaved_ Passion-flower. Shrub cl.

65 P. _guazumefolia_ (Juss. ann. mus. 6. t. 39. f. 1,) leaves glabrous, ovate-oblong, acuminate, denticated; pedioles biglandular; crown one-half shorter than the calycine lobes.  h.  w.  S. Native of New Granada, in very hot places. Flowers large, with a whitish calyx.


66 P. _ceci'nea_ (Aubl. guian. 2. t. 324,) leaves glabrous, ovate, coarsely toothed, acutish; petioles bearing 4-6 glands; bracteas ovate, sub serrated, velvety.  h.  w.  S. Native of Guiana, where it is also cultivated; and Maranham, in Brazil. Cav. diss. t. 280. Flowers scarlet, with orange-coloured rays. Fruit full of juicy sweet edible pulp.
Scarlet-flowered Passion-flower or Granadilla. Fl. June, Nov. 
Clt. 1820. Shrub cl. 
67 P. Volutina (D. C. prod. 3. p. 327.) young leaves pubescent, at length glabrous, cordate, acutish, sinuately lobed, serrated; petioles biglandular; bracteas glandularly serrated. h. c. S. Native of Brazil. Allied to P. coccinea. Flowers perhaps red or scarlet. 

Velvet Passion-flower. Shrub cl. 
68 P. Glândulosa (Cav. diss. t. 281.) leaves glabrous, ovate, coarsely toothed, acutish; petioles biglandular; bracteas entire, biglandulosa at the base. h. c. S. Native of Cayenne. Tacsonia glandulosa, Spreng. syst. 3. p. 43. Fruit the size of a hen's egg. 

Glandular Passion-flower. Shrub cl. 
69 P. Macronata (Lam. dict. 3. p. 33.) leaves glabrous, ovate-cordate, obtuse, entire; petioles biglandular; stipulas broad-ovate, awned; bracteas oblong, serrate-crenated. h. c. S. Native of Brazil, at Rio Janeiro. Cav. diss. t. 288. 

70 P. Maliformis (Linn. amem. 1. p. 220. t. 10. f. 5.) leaves glabrous, ovate, somewhat cordate at the base, acuminate, entire; petioles biglandular; bracteas ovate, acute, joined at the base, larger than the flower. h. c. S. Native of St. Domingo, Porto-Rico, &c. Plum. icon. amer. t. 82. Ker, bot. reg. t. 94. Leaves long and broad. Flowers large, sweet-scented, and beautiful, of various shades; the petals white, and the rays blue; the outer divisions of flowers are red. This species is called the apple-fruited Granadilla or sweet calabash. The fruit round, smooth, about 2 inches in diameter, of a dingy yellow-colour when ripe; the coat is hard and stringy, nearly a quarter of an inch in thickness, full of very agreeable gelatinous pale yellow pulp, which is eaten with wine and sugar. 

71 P. Tillefolia (Linn. amem. 1. p. 219. t. 10. f. 4.) leaves glabrous, cordate, entire, acute; petioles glandless; stipulas and bracteas entire, ovate, acuminate. h. c. G. Native of Peru. Freuil. per. 2. t. 12. Flowers red; rays crimson, with a white line. Fruit globose, variegated with red and yellow, containing a sweet watery pulp. (f. 4.) 

72 P. Serratistipula (Moc. et Sesse, fl. mex. icon. med. ex D. C. prod. 3. p. 328.) leaves glabrous, cordate, acute, entire; petioles bearing 4 glands; stipulas and bracteas ovate, acute, serrated. h. c. S. Native of Mexico. Fruit edible. 

Serratistipula-leaved Passion-flower. Shrub cl. 
73 P. Ligulata (Juss. ann. mus. 6. t. 40.) leaves glabrous, cordate, acuminate, entire; petioles bearing 4-6 cylindrical glands; stipulas ovate-lanceolate, acuminate; bracteas ovate, entire. h. c. S. Native of Peru. Flowers party-coloured. 


74 P. Quadrangularis (Linn. spec. 1356.) leaves glabrous, cordate at the base, ovate, acuminate; petioles bearing 4-6 glands; stipulas ovate, and are, as well as the bracteas, entire; branches tetragonally winged. h. c. S. Native of Jamaica and South America. Ker, bot. reg. t. 14.—Jacq. amer. t. 143. pict. 218. Flowers highly odoriferous; calyceae lobes white within; petals of the same shape, red within, and white outside. Crown 5-fold; outer rays in a double row, longer than the petals, round, white, and variegated with violet. The common granadilla or granadilla vine bears large fruit, of an oblong shape, about 6 inches in diameter, and 15 inches in circumference. It is externally of a greenish yellow, when ripe soft and leathery to the touch, and quite smooth; the rind is very thick, and contains a succulent pulp of a purple colour, which is the edible part. Wine and sugar are commonly added to it. The flavour is sweet and slightly acid, and is very grateful to the taste, and cooling in a hot climate. It has been successfully cultivated for its fruit in a few places in this country. 

Var. &. sulcata (D. C. prod. 3. p. 328.) fruit furrowed transversely. 

Cultivation of Granadilla (P. quadrangularis). Mr. Mitchel 

son keeps a plant in a box 18 inches square, fixed on a level 

with the curb in one corner of a tan-pit. The sides of the 

box are perforated, to admit the roots to run among the 

and the shoots are trained like vines, under the rafters. 

In autumn the shoots are pruned back to within two or three 

of the old wood; and in March following, or just before the 

plant begins to break, it is taken out of the box, the root 

and ball reduced, and repotted in fresh compost. 

Abundance of water in the flowering season enables the 

plant to set its fruit without artificial impregnation. A 

strong plant will produce 40 fruits in a season in regular 

succession, from the end of June till Christmas. Half that 

number will grow to a larger size. Gard. mag. 2. p. 203. 

The Pass. laurifolia and Pass. edulis may be cultivated 

in the same way for their fruit. 

Quadrantral-stemmed Passion-flower or Granadilla. Fl. 
75 P. Mauritiana (Pet. Th. ann. mus. 6. p. 65.) leaves glabrous, cordate at the base, ovate, acuminate; petioles bearing 4-6 glands; bracteas lanceolate, acuminate, denticulated. h. c. S. Native of the Mauritius. 

Mauritian Passion-flower. Shrub cl. 
76 P. Alata (Ait. Hort. kew. 3. p. 306.) leaves glabrous, somewhat cordate, ovate, acute; petioles bearing 4 glands; stipulas lanceolate, falcate, somewhat serrated; pedicels terete; branches tetragonally winged; bracteas a little toothed. h. c. S. Native of Peru. Sims. bot. mag. t. 66. Sowerby in Lin.TRANS. 2. p. 23. t. 3. f. 6. Flowers very sweet-scented, the upper side of the calyx and petals deep crimson; rays variegated with purple, white, and crimson. 


Shrub cl. 
77 P. Latifolia (D. C. prod. 5. p. 328.) leaves glabrous, broadly cordate, acuminate; lateral nerves approximate at the middle of the base; petiolis glandular; stipulas and bracteas oval-oblong, entire; branches terete. h. c. S. Native of Peru. Flowers pale red. 

Broad-leaved Passion-flower. Shrub cl. 
78 P. Albeida (Ker, bot. reg. 677.) leaves glabrous, roundish-cordate, entire; petioles biglandular in the middle; stipulas ovate-lanceolate, setosely apiculate; bracteas approximating the flowers, soon falling off; pedicels twice the length of the leaves. h. c. S. Native of Brazil, near Rio Janeiro. Flowers white, not pale red as in the preceding. Column inclined. Stamina secund. Crown yellowish. 


Shrub cl. 
79 P. Orna (H. B. et Kunth, nov. gen. amer. 2. p. 129.) leaves glabrous, ovate-elliptic, acute, crenulato; petioles bi-
glandular; axils glandular; bracteas ovate, large, entire.  

Native of New Granada, in temperate places. Flowers white, with blue rays mingled with white.

Plumed Passion-flower. Shrub cl.

80. P. longipes (Juss. ann. mus. 6. t. 33. f. 1.) leaves glabrous, oval-lanceolate, somewhat cordate at the base, entire; pedicels biglandular at the apex; stipulas biglandular; calyx glandular, petals twice the length of the leaves.  

Native of New Granada, on Mount Quindin. Flowers about the size of those of P. coriacea, pale red.

Long-stalked Passion-flower. Shrub cl.

81. P. laurifolia (Lin. l. c. p. 220. t. 10. f. 6.) leaves glabrous, ovate-oblong, entire; pedicels biglandular at the apex; stipulas setaceous, length of pedicles; bracteas obovate, glandularly serrated at the apex.  

Native of the West Indies and South America. 

Long-stalked Passion-flower. Shrub cl.

82. P. Tinifolia (Juss. l. c. p. 41. f. 2.) leaves glabrous, oval-oblong, entire; pedicels biglandular in the middle; stipulas setaceous; bracteas oblong, hardly crenated.  

Native of Cayenne, and about Essequibo. Very like P. laurifolia.


83. P. acuminata (D. C. prod. 3. p. 328.) leaves glabrous, ovate-lanceolate, acuminate, entire; pedicels biglandular at the apex; bracteas oblong, obtuse, entire.  

Native of Brazil.

Acuminated-leaved Passion-flower. Shrub cl.

** Leaves lobed, parted, or cut to the base.

84. P. indecora (H. B. et Kunth, l. c. p. 131.) leaves puberulous beneath, rather glandular, semi-orbicular, lunate, subcordate; lobes ovate, divaricate; petioles glandless, pubescent; stipulas linear, pubescent; bracteas ovate.  

Native of New Granada, in temperate places. Perhaps belonging to the section Decaloba.

Indecorous Passion-flower. Shrub cl.

85. P. fulchellula (H. B. et Kunth, l. c.) leaves glabrous, somewhat glandular, semi-orbicular, truncate 2 or 3-lobed; petioles glandless; stipulas linear-subulate; bracteas oblong, large, entire.  

Native of South America, in the province of Caraccas. Flowers white, with yellow rays mingled with blue.

Neat Passion-flower. Shrub cl.

86. P. racemososa (Brot. in Lin. trans. 12. t. 6.) leaves quite glabrous, rather peltate, glaucous beneath, for the most part 3-lobed; petioles usually bearing 4 glands; pedicels twin, forming terminal racemes, in consequence of the upper leaves being abrortive.  

Native of Brazil. Sims, bot. mag. 2001. P. princeps, Lodd. bot. cab. t. 84. Flowers of a deep red or scarlet colour. Racemes pendulous. There is a variety having the outer ray of the crown white.


87. P. sangiinea (Colla. mem. acad. taur. ined. hort. ripul. append. t. 6.) leaves glabrous, cordate, glaucous beneath, 3-5-parted; oblong, entire; petals bearing 5 glands; stipulas auriculately falcate, apiculated, somewhat serrated; pedicels axillary, solitary, 1-flowered.  

Native country unknown. Probably a hybrid between P. racemososa and P. alata. Flowers large, of a deep scarlet or blood-red colour.


88. P. cereum—racemosora (Sabin. in hort. trans. 4. p. 758. t. 9.) leaves quite glabrous, rather coriaceous, 3-5 lobed; lobes undulated, somewhat toothed at the base; petals bearing 4 glands; pedicels axillary, solitary, 1-flowered.  

A hybrid raised from the seed of P. racemosora, impregnated by the pollen of P. coriacea. Like the male parent, it will live throughout the winter in the open ground, with a little protection in severe weather. Lodd. bot. cab. t. 573. Flowers purple.


89. P. alato—coriacea (Lindl. bot. reg. t. 848.) leaves glabrous, oval, 3-lobed; petals quite entire, ovate-lanceolate; petals bearing 4 glands; pedicels axillary, solitary, 1-flowered.  

Native of California, and about Essequibo. Very like P. laurifolia.


90. P. stipulata (Aubl. guian. 2. p. 325.) leaves glabrous, ovate-oblong, entire; pedicels biglandular in the middle; stipulas ovate-oblong, somewhat auricled, mucronate, and are as well as the bracteas entire; pedicels about equal in length to the peduncles.  

Native of Cayenne and Brazil; and of Mexico, near Jalapa. P. glauca, Ker. bot. reg. t. 88, but not of Humb. Flowers white; crown variegated with purple and white.


91. P. raddiiana (D. C. prod. 3. p. 329.) leaves glabrous, somewhat cordate at the base, 5-nerved, trident; lobes ovate, glandularly serrated at the base; petals bearing 2 glands in the middle; stipulas ovate, dimidiate, awned; pedicels 4 times longer than the petals.  

Native of Brazil, where it was detected by Raddi.

Raddi's Passion-flower. Shrub cl.

92. P. atra (Link et Otto. abh. t. 33.) leaves glabrous, glaucous beneath, somewhat cordate at the base, 5-nerved, 3-lobed; lobes ovate, somewhat glandularly serrated at the base; petals biglandular in the middle; stipulas cordate; superior pedicels longer than the petals.  

Native of Brazil. Flowers white. Very nearly allied to P. Raddiiana.

White-flowered Passion-flower. Shrub cl.

93. P. setacea (D. C. l. c.) leaves velvety beneath, 3-nerved at the base, somewhat cordate, trident; lobes ovate-oblong, acute, serrulated; pedicels velvety, biglandular at the base; bracteas ovate, acuminate, ciliately serrated.  

Native of Brazil, near Rio Janeiro.

Velvety-bracteal Passion-flower. Shrub cl.

94. P. menispermifolia (H. B. et Kunth, nov. gen. amer. 2. p. 137.) leaves hairy beneath, pubescent above, roundish-cordate, angularly 3-lobed, sharply toothed; petals hairy, usually bearing 4 glands; stipulas large, dimidiate subcordate, awned,
hence toothed on one side. 97. S. Native of South America, near Jan de Bracamoras. Flowers unknown.

**Moon-seed-leaved Passion-flower.** Shrub cl. 95 P. suspetta (Burt. dec. 6. p. 78.) leaves glabrous, cor- date, 3-lobed; lobes serrated; middle lobe more extended than the side ones; petioles bearing 2-4 glands in the middle; sti- pulas semi-cordate, mucronate; bracteas cordate. 97. S. Native of New Spain.

**Subpetalate-leaved Passion-flower.** Shrub cl. 96 P. fusica (Ruiz et Pav. ined. ex D. C. prod. 3. p. 329.) leaves velvety beneath, rather scabrous above, 5-nerved, broadly subcordate, trifid; lobes sharply serrated, acute; petioles velvety, glandless; stipulas setaceous; bracteas oval, serrated. 97. S. Native of South America, probably of Peru. Flowers scarlet. Agreeing in habit with *Tasconia.*

**Scarlet-leaved Passion-flower.** Shrub cl. 97 P. incarnata (Lin. amoen. 1. p. 230. t. 10. f. 19. a. c.) leaves glabrous, somewhat cuneate at the base, 5-nerved, deeply trifid; lobes lanceolate, serrated; petioles biglandular at the apex; stipulas small; bracteas glandularly serrated; ovumil brillious. 97. S. Native of South America and Virginia. Ald. hort. farn. t. 50. 52. 58. Morr. ox. 2. p. 6. sect. 1. t. 1. f. 9. Calyceis lobes pale green. Petals white; crown with a double circle of purple rays. The *Flows-coloured Granadilla, or May-apple,* is a perennial, sending up annually a number of herbaceous shoots. The flowers are sweet-scented, variegated with purple. The fruit, when ripe, is about the size of an apple, orange-coloured, with a sweetish yellow pulp.


**Flesh-coloured-flowered Passion-flower or Granadilla.** Fl. July, Aug. Clt. 1629. Pl. cl. 98 P. edulis (Sims, bot. mag. t. 1989.) leaves glabrous, 3-lobed, serrated; petioles biglandular at the apex; bracteas glandularly serrated; crown about equal in length to the calyx lobes; ovumil brillious. 97. S. Native of Brazil. Flowers white. Fruit purple, edible. *Purple-fruited Passion-flower;* Shrub cl. 100 P. cuneifolia (Cav. diss. 10. t. 292.) leaves glabrous, 3-lobed, serrated; lobes ovate, acuminate; petioles biglandular; bracteas large, ovate, entire; crown 3 times longer than the calyx. 97. S. Native of South America.

**Serrulate-leaved Passion-flower.** Shrub cl. 102 P. vitifolia (H. B. et Kunth, nov. amer. 2. p. 138.) leaves downy beneath, cordinate, deeply 3-lobed; lobes ovate, acuminate, sharply toothed, with the sinuses biglandular; petioles biglandular at the base, pubescent; bracteas glandularly toothed. 97. S. Native of South America, on the banks of the rivers Magdalena and Casiquiare. Flowers yellowish; outer crown orange-coloured; inner crown white.

**Fine-leaved Passion-flower.** Clt. 1823. Shrub cl. 103 P. pitosa (Ruiz et Pav. ined. ex D. C. prod. 5. p. 330.) plant hispid from rigid hairs; leaves cuneate at the base and cordinate, 3-lobed; lobes coarsely toothed, ovate-lanceolate; petioles biglandular; stipulas ovate-cordate; bracteas oblong, ciliate. 97. S. Native of Mexico. (V. s. in herb. Lamb.)

**Pilose Passion-flower.** Shrub cl. 104 P. adesmoboda (Moc. et Sesse, fl. Mex. Icon. ined. ex D. C. prod. 3. p. 330.) leaves glabrous, cordinate at the base, 5- nerved, 5-lobed; lobes ovate, acuminate, somewhat serrated; petioles bearing 2 pedicellate glands; bracteas deeply serrated. 97. S. Native of Mexico.

**Stalked-glanded Passion-flower.** Shrub cl. 105 P. filamentosa (Cav. diss. 10. t. 294.) leaves glabrous, 5-parted; serrated; petioles biglandular in the middle; bracteas serrated; crown longer than the calyx or nearly equal to it. 97. S. Native of South America. Sims, bot. mag. 2023. Flowers with whitish petals and blue crown, coloured very like those of *P. coriacea.*

**Filamentous Passion-flower.** Fl. Ju. Oct. Clt. 1817. Sh. cl. 106 P. palmata (Lod. bot. cab. no. 37. Link, enum. 2. p. 133.) leaves glabrous, palmately 5-parted, somewhat serru- rated; serratures glandular; crown a little shorter than the calyx. 97. S. Native of Brazil. P. filamentosa, Ker. bot. reg. 584. Flowers the size of those of the following species, bluish; crown variegated with blue, purple, and white.

**Palmate-leaved Passion-flower.** Fl. Ju. Oct. Clt. 1817. Sh. cl. 107 P. cordifolia (Lin. amoen. 1. p. 231. t. 10. f. 20.) leaves glabrous, 5-parted; lobes oblong, quite entire; petioles bearing 4 glands at the apex; stipulas falcate; bracteas ovate, entire; crown shorter than the calyx. 97. S. Native of Brazil and Peru. Curt. bot. mag. t. 28. Herb. amat. t. 102. Sow- erby in Lin. trans. 2. p. 25. t. 4. f. 4. Calyceis segments pal- greenish white; the petals are nearly of the same shape and size. Styles purplish. Rays of the crown in two circles, pur- ple at bottom, white in the middle, and blue at the ends. Fruit egg-shaped, size of a Mogul plum, yellow when ripe. The flowers have a faint scent, and continue but one day, like many other species of this genus. This is the only kind which can be considered truly hardy.

**Var. *augustinifolia*;** leaves of leaves narrow; plant flowering later than the species. A hybrid.

**Var. *glaucophylla;* leaves glaucous beneath.**

**Var. c. Coleillei (Sweet, fl. gard. t. 152.) leaves of leaves ob- long-lanceolate, serrulated; petioles biglandular at the apex; stipulas rather lunate, serrately ciliated; bracteas ovate, ob- tuse, serrulated; threads of crown rather shorter than the corolla. 97. H. A hybrid. Flowers whitish; petals tinged with blue; outer crown variegated with purple, white, and blue.


109 P. LOURENÇI; leaves glabrous, 5-parted; lobes quite entire; petioles biglandular.  h. w. F. Native of China and Cochín-china. P. cãerülea, Lour. coch. p. 527. but not of Lin. P. Chémenis, Sweet? Flowers greenish yellow, with a blue crown.


110 P. PEDATA (Linn. amoen. 1. p. 233. t. 10. f. 22.) leaves pedate, in consequence of the petiole being branched at the top; petiole biglandular; segments of leaves ovate, acuminated, serrated; bracteas dentately fringed. t. w. S. Native of St. Domingo and Trinidad. Plum. amer. t. 81. Calycine segments pale green, with abundance of little red spots on the upper surface. Petals or inner calycine segments blue. The rays of the crown are very close, deep red, with 2 or 3 white rings, very slender, violet at the ends; they are twisted so as to resemble the serpents about Medusa's head. Fruit the size of a middling apple, green, and dotted.


Sect. VII. TACSONIIODIES (plants resembling Tascónia in habit). D.C. prod. 3. p. 330. Tube of calyx rather elongated, nevertheless much shorter than the limb. The rest as in section Granadilla. Leaves 3-lobed, with the recesses and petioles glandular. An intermediate section between the genus Papi-flora and Tascónia.

111 P. REFLEXIFLORA (Cav. icon. 5. t. 425.) glabrous; leaves subpetiulate, 3-lobed; lobes obtuse, quite entire, recesses and petioles bearing 6 glands; calycine lobes reflexed; crown very short or almost wanting. t. w. S. Native of Paumâmaide, and near Bodega, in South America. Tascónia reflexiflora, Juss. ann. mus. 6. p. 593. Flowers scarlet.

Reflexed-leaved Passion-flower. Shrub cl.

112 P. PICTURATA (Ker. bot. reg. t. 673.) glabrous; leaves subpetiulate, reddish beneath, 3-lobed; lobes quite entire, mucronate by a bristle; recesses and petioles bearing 4 glands; calycine lobes reflexed, twice the length of the filamentous crown. t. w. S. Native of Brazil. P. picturata, Lodd. bot. cab. t. 1050. differs in the lobes of the leaves being glandless. Flowers red; outer crown beautifully variegated with blue and white.


Sect. VIII. Dysómia (from δυσόμια, dysodes, fled, and ομέ, osme, a smell; the species contained in this section have a bad smell). D. C. in mem. soc. gen. 1. pt. 2. p. 436. prod. 3. p. 331. Involucrum 3-leaved, under the flower; leaflets divided into many setaceous lobes, which are tipped with glands. Calyx 10-lobed, or the 5 inner ones are petals. Pedicels solitary. Fruit subcapsular.—Perhaps this section will form a proper genus.

113 P. HIBISCIFOLIA (Lam. dict. 3. p. 39.) stem, petioles, and leaves clothed with soft velvety down on both surfaces; leaves truncate at the base, 5-nerved, trifid; lobes ovato-acuminated, somewhat dentate. t. w. S. Native of the West India Islands. P. fe'ída, var. a, Linn. amoen. 1. p. 228. t. 10. f. 17. Plum. amer. t. 86. P. gossypifólia, Desv. in Ham. prod. p. 48. t.—Giseck, icon. fasc. 1. t. 20. Flowers whitish. Plant petid when bruised.


114 P. PUI'TIDA (Cav. diss. 10. t. 289.) stems and petioles hispid; leaves villous on both surfaces, 5-nerved, cordate at the base, 5-lobed; lobes nearly entire, lateral ones very short, middle one acuminated. t. or w. w. S. Native of the Caribbee Islands and South America. Sims, bot. mag. 2619. Ker. bot. reg. 321. P. fe'ída, var. β, Linn. amoen. P. variegáta, Mill. P. hierüta, Lodd. bot. cab. 138. P. hierina, Sweet. hort. brit. Flowers whitish; crown variegated with purple and blue. Plant petid when bruised.


115 P. ACRIFOLIA (Schlecht. et Cham. in Linneza. 5. p. 89.) the whole plant scabrous from hairs; leaves deeply cordate, pedately 5-7-nerved, cuneated within the recesses, 5 and sometimes 7-lobed; paler and glandless beneath; lobes acuminated, sub serrated; teeth mucronate; petioles biglandular at the apex; glands stipitmate, recurved at the apex; stipulas semicircular, sinutately toothed; teeth subulate; peduncules twin, involucrated in the middle; involucrum multifidly jagged, hardly glandular. t. w. S. Native of Mexico, in woods near Jalapa. Flowers a little larger than those of P. fe'ída.

Sycomore-leaved Passion-flower. Shrub cl.

116 P. CILLATA (Alt. hort. kew. 3. p. 310.) stem glabrous; petioles rather pilose; leaves glabrous, somewhat 5-nerved, cordate at the base, trifid; lobes acuminated, ciliated. t. w. S. Native of Jamaica. Curr. bot. mag. t. 288. Petals greenish on the outside and red within. Rays of crown variegated with white and purple. Stipe of ovarium deep purple, with darker spots.


† Species not sufficiently known.

* Leaves entire.

117 P. APPENDICULATA (Meyer, esseq. p. 223.) leaves glabrous, glandular beneath, 3-nerved, rounded from the base, oblong, mucronate; petioles biglandular, puberulous; pedicels twin, shorter than the petioles; involucrum wanting. t. w. S. Native of Guiana, in shady sandy places. Perhaps belonging to either section Cieca or Decaloba. Flowers yellow.

Appendiculated Passion-flower. Shrub cl.

118 P. CYATHÓPHORA (Desv. in Ham. prod. p. 48.) leaves oblong-lanceolate, undivided, undulated and narrowed in the middle, mucrunolate, 3-nerved, subcordate at the base, quite glabrous above and nerved, glaucencescent beneath; petioles biglandular; glands large, lateral, hollow, cup-shaped, usually twin; involucrum wanting. t. w. S. Native of Guiana. Perhaps belonging to section Cieca or Decaloba.

Cup-bearing Passion-flower. Shrub cl.

119 P. PERIFÓRMIS (D.C. prod. 3. p. 331.) leaves glabrous, ovato-acuminated, feather-nerved; petals biglandular; pedicels solitary; fruit pear-shaped. t. w. S. Native of Brazil.

Pear-shaped-fruited Passion-flower. Shrub cl.

120 P. LANCEOLATA (Desv. 1. c.) branches compressed, angular, ciliated with down; leaves lanceolate, acute, mucrunolate, rounded at the base, with the sides subauricled, pilose on both surfaces, quite entire; petioles biglandular; pedicels twin, capitellate; fruit on a long pedicel. t. w. S. Native of the Antilles. Flowers scarlet. The rest unknown.

Lanceolate-leaved Passion-flower. Shrub cl.

121 P. TETRÁDE'NA (D.C. prod. 3. p. 331.) leaves ovate, quite entire; petioles bearing 4 glands; bracteas toothed; stem tetragonal; membranous. t. w. S. Native of Brazil. Vand. fl. lus. et bras. in Röm. script. 148. Perhaps P. alata or P. quadrangularis.

Four-glanded Passion-flower. Shrub cl.

122 P. THEOBROMOFÓRIA (D.C. prod. 4. p. 331.) stems erect; leaves cordate, ovate, acuminated, unequally serrated, rather puberulous; calyx double; petals spatulate. t. w. S. Native country unknown. Flowers in the Botanical Garden at Schönbrun. P. guazumafolía, Jacq. fragm. p. 18. but not of Juss. This plant perhaps belongs to a different genus, not belonging to this order.
Cacao-leaved Passion-flower. Shrub 4 to 6 feet.

123 P. Cochín-chí'na's (Spreng. syst. app. p. 346.) leaves opposite, glabrous, ovate, undivided, quite entire; petioles biglandular; flowers axillary, twin, 5-cleft; berry ovate. ♀. S. Native of Cochín-china, among bushes. P. pálida, Lour. coch. p. 527. This species differs from all the other Passiflora in the opposite leaves; it is perhaps therefore a species of *Mal-pigia*. Flowers large, pale.

Cochín-chína Passion-flower. Shrub cl.

124 P. Síngapö'ra'na (Wall. cat. no. 1232.) leaves glabrous, oblong; the rest of the plant unknown. ♀. S. Native of Singapore, in the East Indies. Like *P. laurifolia*.

Singapore Passion-flower. Shrub cl.

125 P. Penang'á'na (Wall. cat. no. 1233.) leaves ovate-oblong, long, entire, acuminate; tendrils trifid. ♀. S. Native of Penang. Flowers unknown.

Penang Passion-flower. Shrub cl.

** ♀ Leaves 2-lobed.

126 P. Luná'ta (Juss. herb. ex D.C. prod. 3. p. 331.) leaves rather dwny beneath, glandular, 3-nerved, ovate at the base, lunately truncate at the apex; nerves ending each in a bristle; petioles glandless; pedicels twin; bracteae linear. ♀. S. Native of Peru. Perhaps belonging to the section *Cicca* or *Decóloa*.

Moon-shaped-leaved Passion-flower. Shrub cl.

127 P. Contraye'ra (Smith, in Rees' cyclo. no. 23.) leaves glabrous, deeply 2-lobed; lobes oblong, obtuse, hardly diverging; calyx multifid. ♀. S. Native of Mexico.—Hern. mex. p. 301. lower figure. Allied to *P. Mexicana* and *P. Dic-támo*, but differs from them in the flowers being multifid, not 5-cleft. The root is famous for its medicinal virtues, being sweetish with some pungency and fragrance, and is considered a powerful counterpoison, deobstruent, cordial, &c.

Contraye'ra Passion-flower. Shrub cl.

128 P. Cunae'á (Wild. enum. p. 606.) leaves glabrous, glandular beneath, cuneated at the base, somewhat 2-lobed at the apex, with a mucrone between the lobes; petioles glandless; pedicels twin; calyx 10-cleft, the 5 inner divisions are called petals. ♀. S. Native of Caraccas. Perhaps belonging to the section *Decóloa* or section *Granadilla*.


129 P. Beló'nis (Mill. dict. no. 13.) leaves glabrous, stiff, 2-lobed; pedicels long, horizontal; fruit oval. ♀. S. Native of South America, at Carthagena. Flowers small, white.

Two-lobed-leaved Passion-flower. Shrub cl.

130 P. Clypea'á (Smith, in Rees' cyclo. no. 20.) leaves petate, glandular beneath, 5-7-nerved, reticulately veined, 2-lobed, furnished with a mucrone between the lobes; petioles bearing 2 or 4 glands. ♀. S. Native of New Granada. Flowers unknown.

Buckled-leaved Passion-flower. Shrub cl.

** ♀ Leaves 3-lobed.

131 P. Cephal'éma (Bory, ann. gen. 2. p. 152. t. 22. f. 2.) leaves glabrous, rather glandular beneath, somewhat 3-lobed, emarginate at the base; lobes disarticulate, linear, obtuse, rounded; petioles very short, biglandular beneath the middle. ♀. S. Native country unknown, and has never flowered in the gardens of Europe.


132 P. Multítrósmis (Jacq. fragm. no. 169. t. 67. f. 1.) leaves glabrous, wrinkled beneath, cordate at the base, simple, 2 or 3-lobed, acuminate, very minutely serrated; petioles biglandular. ♀. S. Native of South America, at Caraccas. Wild. enum. 697. Flowers unknown. The plant agrees with *P. in-carnáta* in the shape of the leaves.


133 P. Heterophý'lla (Lam. dict. 3. p. 41.) leaves glabrous, acute, lower ones lanceolate, nearly sessile: middle ones on short petioles, 3-parted: upper ones pedate, in consequence of the petiole being branched at the apex; tendrils wanting; pedicels solitary, without an involucrum; calyx 10-lobed, or the 5 inner lobes, so called, are petals. ♀. S. Native of St. Domingo. Plum. ed. Burm. t. 139. f. 1. Perhaps belonging to section *Decóloa* or section *Astrophí'a*? Flowers yellowish.


134 P. Herma'ní (D. C. prod. 3. p. 332.) leaves velvety, 3-lobed; involucrum small, of 3 entire leaflets; calyx 10-parted. ♀. S. Native of Curassao. Flowers whitish. Allied on one hand to *P. híbris*úta and on the other to *P. híbis-cífolia*.

Herrmann's Passion-flower. Shrub cl.

135 P. ? Túshfóra (H. B. et Kunth, nov. gen. amer. 2. p. 139.) leaves glabrous, coriaceous, rounded at the base, 3-lobed; lobes oblong-lanceolate, equal, entire; petioles biglandular in the middle; pedicels twin; tube of calyx about equal in length to the 5 lobes of the limb. ♀. S. Native of Mexico, in arid places near Acapulco and Etambo del Egido. Probably a species of *Tucáonia*. Flowers with a greenish calyx.

Tube-flowered Passion-flower. Shrub cl.

Cult. All the species of this elegant and curious genus are well suited for planters in conservatories and stoves, being free growers and of easy culture. They thrive well in very light rich soil, and the more room they are allowed, both for roots and stems, the freer they will grow and flower. They are all easily raised from cuttings planted in sand or mould, placed in heat; and the younger the cuttings are, the sooner they will strike root. Most of the species ripen fruit in our stoves, and consequently many fine varieties have been raised by impregnating the stigmas of one with the pollen of another. Several hybrids, raised from seeds set by the pollen of *P. coréidea* are nearly hardy. Several of the species are marked greenhouse, in which they will grow and flower freely. *Passiflora coréidea* is the only species that can be considered quite hardy, and it requires a sheltered situation; it is therefore safest to plant against a wall, that it may be protected by a mat in severe weather: it thrives well in any soil, and cuttings of it are readily rooted, under a hand-glass.

Culture of the edible species of *Granadilla*.—All the species will fruit even in large pots; but it is best to plant them in an angle of a stove, which has been partitioned off, either by boards or brick-work, as low as the pit goes. At the bottom of the cavity formed by this division, should be laid some brick rubbish, over which may be thrown a little dead tan, and the whole be then filled with equal parts of very old tan, and a compost of leaf-mould and rotten dung; therein the roots will strike freely, and will even spread through the partition into the pit. They do not require the full heat of a pine-stove, for they flourish best in a temperature of from 65° to 70°; but they will not bring their fruit to perfection if kept in a common greenhouse or conservatory, though they will grow and flower in it. The shoots as they advance may be trained near to and under the inclined glass of the stove; the first flowers will appear in May, and the blooming will continue until September, the fruit setting the whole time; but if it does not set well it will be advisable to impregnate the stigmas, by applying the pollen with a feather. As they grow, the very strong shoots should be cut out from their origin; for these do not bear fruit so abundantly as those which are less vigorous; but the fruiting-branches must not be shortened on any account. The temperature must be kept up equally during the time of flowering and fruiting; the crop will begin to come in August, and will continue until January, but the earlier produce is the best. When the crop is all off, which will be early in January,
the heat must be reduced to about 50°, so as to check and stop the growth. This being effected, the shoots must be well cut in. As little old wood as possible, besides the main stem, which rises from the pit to the glass, and a few pieces (about 2 or 3 feet of each) of the old branches should be retained; for all that is to be trained under the glass to bear in each year, ought to be the growth of the same season. It is found that the shoots break better and in greater quantity from the older wood than from that of two years’ standing. In this dormant and reduced state it is to be kept during January and February, after which the necessary heat may be applied to cause it to resume its functions for the ensuing season.

IV. DISE'MMA (from κεκ βίως, δίς, two, and στεμμα, stemma, a crown; in reference to the crown of the flower being double, or in two). Lab. sect. calea. p. 78. D. C. prod. 3. p. 332.

Lin. syst. Monadelphus, Pentandria. Tube of calyx short, furrowed below. Crown of throat double; outer one composed of distinct filamentous threads; inner one tubular, with an entire or toothed border. The rest as in Passiflora. All the species are either natives of New Holland or New Caledonia.

* Petioles biglandular at the apex.

1 D. aurantia (Labill. calea. t. 79.) leaves glabrous, ovate at the base, broadly 3-lobed; lobes obtuse, middle lobe the longest: lateral ones furnished with a kind of appendage each on the outside; bracteas bristle-formed, glandular at the apex, rather remote from the flower; petioles biglandular at the apex; threads of outer crown about equal in length to the inner lobes of the calyx or petals. \( h \). G. Native of New Caledonia. Passiflora aurantia. Forst. prod. p. 326. Cav. diss. 10. p. 457. Murucejia aurantia, Pers. ench. 2. p. 222. Flowers orange-coloured, with the tube of the inner crown green, longer than the simple upright rays that surround it.

Orange-flowered Dismema. Shrub cl.

2 D. Herbertiana (D. C. prod. 3. p. 332.) leaves pubescent, cordate at the base, broadly 3-lobed; lobes ovate, acutish; petioles biglandular at the apex; pedicels twin, 1-flowered; bracteas bristle-formed, very remote from the flower; threads of outer crown 3 or 4-times shorter than the inner calyceine lobes or petals. \( h \). G. Native of New Holland, in the interior. Passiflora Herbertiana, Ker. bot. reg. 757. Murucejia Herbertiana, Sweet. Flowers white and greenish, with the crown yellow.

Var. \( \beta \). Calejana (D. C. prod. 3. p. 333.) leaves semiobicular at the base, hardly subcordate; bracteae situated in the middle of the pedicel. \( h \). G. Native of New Holland. Passiflora biglandulosa, Caley. in herb. Lamb. Perhaps a proper species.


3 D. Baueri; leaves 3-lobed, sparingly glandular beneath; lobes oblong, retuse, middle one more prolonged; bracteas and stipulas setaceous; rays filiform, longer than the corolla, which is plicate; disk 5-lobed. \( h \). G. Native of Norfolk Island. Fruit oval, blood-coloured. Flowers at first pale yellow, but at length orange-coloured, with the segments keeled and rather undulated, green on the outside. Murucejia Baueri, Lindl. coll. t. 36.

Bauer’s Dismema. Shrub cl.

4 D. cocceea (D. C. prod. 3. p. 333.) leaves glabrous, glandular beneath, cuneate at the base, 3-nerved, bluntly 3-lobed; petioles biglandular at the apex, longer than the pedicels; bracteas subulate, scattered, remote from the flower. \( h \). S. Native of New Holland. Passiflora cocceea, Banks, but not of Aubl. Flowers scarlet. Crown short, double. Fruit globose. Scarlet-flowered Dismema. Shrub cl.

** Petioles glandless.

5 D. adiantifolia (D. C. l. c.) leaves glabrous, glandular beneath, truncate at the base, 3-5-lobed; lobes obtuse, somewhat 3-lobed; petioles glandless, a little longer than the pedicels; bracteas subulate, scattered. \( h \). G. Native of Norfolk Island. Passiflora adiantifolia, Ker. bot. reg. 233. Passiflora aurantia, Andr. bot. rep. t. 295. but not of Forst. Passiflora glabra, Wendl. coll. 1. t. 17. Passiflora Adiantum, Willd. Enum. 698. Murucejia adiantifolia, Sweet. Flowers yellow first, fading to an orange, with the inner crown green, longer than the purple rays that surround it.


Cult. See Passiflora, p. 55. for culture and propagation. Splendid and curious climbing shrubs.


Lin. syst. Monadelphus, Pentandria. Tube of calyx furrowed below. Crown of throat simple, erect, tubularly-conical, truncate (c. 5. b. f. 6. c.); threads of crown not free, but joined together into a tube.—Habit of Passiflora. Petioles glandless. *Species all natives of the West Indies.*

Sect. I. Pentaria (from πέντε, pente, five; calyx 5-lobed). D. C. prod. 3. p. 333. Calyx 5-lobed (f. 5. a.).

1 M. orbiculata (Pers. ench. 2. p. 222.) leaves glabrous, glandular beneath, 3-nerved, orbicular, somewhat 3-lobed; petioles glandless, twisted; tendrils few; bracteoles narrow, very acute. \( h \). S. Native of St. Domingo. Passiflora orbiculata, Cav. diss. 10. t. 286. Flowers crimson.

Orbicular-leaved Murucuja. Shrub cl.

Sect. II. Decaria (from δεκα, deka, ten; in reference to the calyx being 10-lobed). D. C. prod. 3. p. 333. Calyx 10-lobed (f. 9. a.); the 5 inner lobes probably petals.

2 M. Vcella (Pers. l. c.) leaves glabrous, glandular beneath, emarginate at the base, truncate-2-lobed at the apex; lobes obtuse, divaricate; petioles glandless, shorter than the pedicels; bracteae narrow, very acute. \( h \). S. Native of the Antilles, in woods. Passiflora Murucuja, Lin. amen. 1. t. 10. f. 10. Cav. diss. 10. t. 287. Ker. bot. reg. t. 574. — Plum. amer. t. 87. Flowers deep red. Berry size of a pigeon’s egg, flesh-coloured when ripe. Both the syrup and decoction of the plant is much used in the leeward parts of Jamaica, where it is frequent; and it is said to answer effectually all the purposes for which syrup of poppies and liquid laudanum are generally administered. The flowers are most in use; they are commonly infused in, or powdered and mixed immediately with
wine or spirits; and the composition is generally thought to be very effective and easy narcotic. Browne names it bull-hoof or Dutchman's laudanum, which are probably the vulgar names of the plant in Jamaica.

Var. β; leaves rounded at the base, somewhat 3-lobed. Cav. l.c.


Cult. Climbing shrubs, with the habit of Passiflora, bearing beautiful flowers. Their culture and propagation are as that recommended for that genus, see p. 56.

VI. TACSONÍA (Tacson, the name of one of the species in Peru). Juss. gen. p. 398. ann. mus. 6. p. 388. D. C. prod. 3. p. 333.

LIN. syst. Monadelphía, Pentándria. Tube of calyx long (f. 7. c), with a 10-cleft limb (f. 7. a.); the 5 inner lobes probably petals; throat furnished with a scaly membrane. Habit of Passiflora.

SECT. I. EUTACSONÍA (eu, well or good, and Tacsonia; this section contains the genuine species of the genus). D. C. prod. 3. p. 333. Involucrum large, 3-leaved (f. 6. f.); bracteas sometimes free, sometimes joined together.

* Leaves undivided.


2 T. lana (Juss. ann. mus. 6. t. 59. f. 1.) leaves woolly beneath, glabrous above, ovate-cordate, entire, with somewhat revolute edges; petioles glandless; stipulas narrow, hidden among the tomentum of the stem. h. c. S. Native of the Andes, about Quindiu. H. B. et Kunth, nov. gen. amer. 2. p. 141. Flowers white?

Woolly Tacsonia. Shrub cl.

Blood-coloured-flowered Tacsonia. Shrub cl.

3 T. trifoliata (Juss. l. c. p. 393.), whole plant white from silky tomentum; leaves trifoliolate; leaflets ovate-oblanceolate, quite entire; petioles glandless; stipulas half stem-clasp, ciliated with glands. h. c. S. Native of Peru, in the valley of Canta. Trifoliata Tacsonia. Shrub cl.

4 T. sanguinea (D. C. prod. 3. p. 334.) leaves tomentose beneath, reticulately veined, smooth above, deeply 3-lobed; lobes acute, serrated; petioles glandless; bracteas glandularly-toothed. h. c. S. Native of the West Indies. Passiflora sanguinea, Smith, in Rees' cycl. no. 45. Flowers deep red.

Blood-coloured-flowered Tacsonia. Shrub cl.

5 T. pinnastrifida (Juss. l. c. p. 334.) leaves white from velvety down beneath, trifid beyond the middle; lobes serrated; stipulas pinnate; petioles with 4-8 glands. h. c. S. Native of Chili. Sweet, fl. gard. new. ser. 2. t. 156. Passiflora pinnastrifida, Cav. icon. 5. t. 428. Flowers rose-coloured or purplish; crown deep blue.

Var. β, pennisetipes (Smith, in Rees' cycl. no. 48. under Passiflora) stipulas palmately parted into subulate lobes, one of which is pinnate at the apex.

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Var. β, longiflora (D. C. prod. 3. p. 335.) leaves pubescent beneath; lateral lobes sometimes 2-lobed. ʰ. ʷ. S. Native of Peru. T. longiflora and T. Táspo, Pers. ench. 2. p. 223. Flowers rose-coloured or purplish.

**Mixed Tacsonia.** Shrub cl.

14 T. speciosa (H. B. et Kunth, nov. gen. amer. 2. p. 143.) leaves glabrous, corrodate at the base, reticulately 5-nerved, deeply 3-lobed; lobes ovate-oblong, sharply serrated; petals bearing 6-8 pedicellate glands; stipulas suborbicular, awned, dentilucated. ʰ. ʷ. S. Native of Santa Fe de Bogota. Murucutia speciosa, Spreh, synst. 3. p. 43. Flowers rose-coloured.

**Showy Tacsonia.** Shrub cl.

15 T. glaberrima (Juss. ann. mus. 6. p. 394.) leaves glabrous, coriaceous, 3-lobed; lobes ovate-lanceolate, stiffly serrated; petals bigalldular at the apex; stipulas glove-formed, dentately crested. ʰ. ʷ. S. Native of Peru, on the Andes in shady places. Flowers purple.

**Quite-glabrous Tacsonia.** Shrub cl.

16 T. anastomosans (Lamb. herb. ex D. C. prod. 3. p. 335.) leaves glabrous, coriaceous, cuneate at the base, 3-nerved, trifid; lobes ovate-lanceolate, callously serrated; petals bearing 4 glands; stipulas ovate, awned, callously serrated. ʰ. ʷ. S. Native of Peru.

**Anastomosing-veined Tacsonia.** Shrub cl.

17 T. xerifolia (D. C. prod. 3. p. 335.) leaves glabrous, glandless beneath, 3-5-nerved, trifid; lobes ovate-lanceolate, acutely serrated; petals bearing 4 glands; stipula semi-elliptic, acuminated, nearly entire. ʰ. ʷ. S. Native of Peru. Ruiz et Pav. (v. s. in herb. Lamb.)

**Small-leaved Tacsonia.** Shrub cl.

**SECT. III.** Distephæ'na (from ἐκ, dis, double, and στέφανος, stephanos, a crown; in reference to the double crown in the throat). Juss. l. c. D. C. prod. 3. p. 335.—Distepha, Salisb. in litt. Involucrum small, 3-leafed; leaflets free, bigalldular in the axils. Throat of calyx bearing a membranous tube, and a series of ligules.

18 T. glandulosa (Juss. l. c. p. 391.) leaves glabrous, coriaceous, ovate, acuminate, quite entire, feather-nerved; petals bigalldular at the base, about equal in length to the pedicels; bracteas subulate near the flowe. ʰ. ʷ. S. Native of Cayenne. Passiflora glandulosa, Cav. diss. 10. t. 281.

Var. β, canaliculata (D. C. l. c.) petals thicker, and channelled at the base.

**Glandular Tacsonia.** Shrub cl.

19 T. Rohriana (D. C. prod. 3. p. 335.) leaves glabrous, coriaceous, ovate-oblong, acuminate, quite entire, feather-nerved; petals bigalldular at the base, one-half shorter than the pedicels; bracteas subulate, remote from the flowe. ʰ. ʷ. S. Native of Cayenne.

**Rohr's Tacsonia.** Shrub cl.

20 T. Stoupyana (D. C. l. c.) leaves glabrous, coriaceous, ovate, acuminate, quite entire, feather-nerved; petals bigalldular at the base; bracteas oval, obtuse, foliaceous. ʰ. ʷ. S. Native of Cayenne. Cav. diss. 10. t. 281. lit. x.

**Stoupy's Tacsonia.** Shrub cl.

21 T. citrifolia (Juss. l. c. p. 392. in a note.) leaves oval, coriaceous, quite entire, feather-nerved; petals bigalldular at the apex. ʰ. ʷ. S. Native of Cayenne. (v. s. herb. Juss.)

**Citron-leaved Tacsonia.** Shrub cl.

† *Species belonging to section Distephæna, but doubtful.*

22 T. quadriloculandulosa (D. C. l. c.) leaves glabrous, obtuse at the base, unequally serrated: superior ones oblong; inferior ones 3-lobed; recesses of the lobes of the leaves, petals, and bracteas bearing 4 glands each. ʰ. ʷ. S. Native of Guiana, in woods, in the Island of Arowabish. Passiflora quadriloculandulosa, Meyer, eseq. p. 226.

**Four-glanded Tacsonia.** Shrub cl.

23 T. quadridentata (D. C. l. c.) leaves glabrous, ovate-lanceolate, feather-nerved, with a few coarse acute teeth; petals bigalldular at the base; bracteas oblong, bigalldular. ʰ. ʷ. S. Native of the West Indies.

**Four-toothed-leaved Tacsonia.** Shrub cl.

24 T. pubescens (D. C. l. c.) leaves pubescent, ovate, lanceolate; petals bigalldular at the base; bracteas ovate-lanceolate, acuminate, glandularly serrated, and glandular on the back. ʰ. ʷ. S. Native of the East Indies.

**Downy Tacsonia.** Shrub cl.

25 T. trinervia (Juss. l. c. t. 58.) leaves tomentose beneath, oval, 3-nerved; nerves protruding so much as to form teeth; petals glandless; calyx 10-lobed. ʰ. ʷ. S. Native of South America, in shady places at the river Cassiquiare. H. B. et Kunth, c. l. c. p. 143. Flowers rose-coloured?

**Three-nerved-leaved Tacsonia.** Shrub cl.


**Green-leaved Tacsonia.** Shrub cl.

**Cult.** The species have the habit of Passiflora, and some of them are equally showy. Their culture and propagation are the same, see p. 56.

**VII. PASCHANTHUS.** VIII. Modecca.

**SECT. IV.** Psilanthus (from πσιλός, psilos, naked, and ανθος, anths, a flower; in reference to the flowers being naked, or without the involucrum). D. C. prod. 3. p. 335. Involucrum none under the flower.

26 T. trinervia (Juss. l. c. t. 58.) leaves tomentose beneath, oval, 3-nerved; nerves protruding so much as to form teeth; petals glandless; calyx 10-lobed. ʰ. ʷ. S. Native of Mexico, in the vicinity of Acapulco. Passiflora viridiflora, Cav. icon. 5. t. 424. Intermediate between Tacsonia, Passiflora, and Murucutia. Flowers green.

**Psilanthus.** Shrub cl.

**Cult.** This very singular plant, being a native of the Cape of Good Hope, will thrive in a greenhouse, and will form an excellent climber for the rafters. Its culture and propagation are the same as that recommended for Passiflora, see p. 56.


**Lin. syst. Dióecia, Monadelphia.** Flowers dioecious. Calyx permanent, campanulate, 10-cleft (f. 8. b.): 5 outer lobes ovate acute: 5 inner lobes petaloid or probably petals (f. 8. b.). Scales 5-10 (f. 8. b.), rarely wanting, rising from the calyx. Stamens 5, inserted in the torus? monadelphous: anthers standing. Ovarium (f. 8. d.) on a short stipe. Stigmas 3, petaloid (f. 8. e.). Capsule bladder, 1-celled, 3-valved, one or many-seeded. Seeds furred by rows of tubercles (f. 8. f.), arilulate, fixed to 3 parietal placenta, which are adnate to the middle of the valves. — Habit of plants between Passiflora and Bryonia.
PASSIFLOREÆ. VIII. Modeca. IX. Deidamia. X. Vareca.

1. M. palma'ta (Lam. dict. 4. p. 209.) leaves glabrous, variously palmately lobed, glandular beneath; stipules spinosecent; pedicels bracteless.  ʃ. ʃ. S. Native of Malabar. Yellow flowers. Probably many species are confused under this name.

Var. α, Narola (D. C. prod. 3. p. 336.) lobes of calyx acuminate; petaloid lobes or petals wanting; fruit globose.—Rheed. mal. 8. t. 20.

Var. β, palmodec'ca (D. C. l. c.) lobes of calyx acutish; petaloid lobes or petals feathered palmately; fruit glabrous.  ʃ. ʃ. S. Rheed. l. c. t. 21.

Var. γ, Mitta (D. C. l. c.) lobes of calyx very much acuminate; petaloid lobes or petals wanting; fruit ovate.—Rheed. l. c. t. 22.

Palmate-leaved Modeca. Shrub cl.

2. M. lob'a'ta (Jacq. fragm. t. 131.) leaves glabrous, cordate at the base, 3-5-lobed, glandless; petioles biglandular at the apex; pedicels bracteless.  ʃ. ʃ. S. Native of Sierra Leone. Ker, bot. reg. t. 151. Flowers yellowish. (f. 8.)


3. M. integri'folia (Lam. dict. 4. p. 209.) leaves glabrous, ovate-lanceolate, usually entire, much acuminate; pedicels bracteless, very short, few-flowered; fruit globose.  ʃ. ʃ. S. Native of Malabar.—Rheed. mal. 8. t. 23.

Entire-leaved Modeca. Shrub cl.

4. M. Wight'ta'na (Wall. cat. no. 6764.) smooth; leaves cordate, triangularly ovate, entire; tendrils simple; capsule bladdery; seeds scrobiculate.  ʃ. ʃ. S. Native of the East Indies, on the Ginne Hills. Like M. integri'folia, Lam.

Wight's Modeca. Shrub cl.

5. M. al'ie'na (Wall. cat. no. 6766.) leaves deeply cordate at the base, oblong, acuminate; lobes at the round base; pedicels umbellate on the top of shortish peduncles; tendrils simple.  ʃ. ʃ. S. Native of Silhet.

Alien Modeca. Shrub cl.

6. M. acumina'ta (Blum. bijdr. p. 940.) leaves ovate-oblong, acuminate, somewhat cordate at the base, and acuminate; flowers racemose, rising from elongated axillary tendrils; fruit ovate, acuminate.  ʃ. ʃ. S. Native of Java, on Mount Salak. Allied to M. integri'folia according to Blume.

Acuminated-fruited Modeca. Shrub cl.

7. M. heterophy'li'a (Blum. bijdr. p. 940.) leaves undivided or 3-lobed, acuminate, somewhat cordate at the base, and somewhat baccate; fruit acuminate; flowers baccate, acuminate at both ends. ʃ. ʃ. S. Native of Java, on Mount Gede.

Variable-leaved Modeca. Shrub cl.

8. M. diversi'folia (Wall. cat. no. 6763.) smooth; lower leaves triangularly ovate; upper ones 3-lobed, petulate at the base; lateral lobes sometimes bident; pedicels 1-flowered, bracteless; tendrils simple.  ʃ. ʃ. S. Native of the East Indies. Fruit bladdery, 3-valved. Root tuberous. Momórdica heterophyli'a, Wight, mss.

Diverse-leaved Modeca. Shrub cl.

9. M. cordi'folia (Blum. bijdr. p. 939.) leaves membranous, on short pedicels, cordate, mucronulate, baccate at the base; flowers corymbose, dichotomous, rising from elongated axillary tendrils. ʃ. ʃ. S. Native of Java, on Mount Salak.

Heart-leaved Modeca. Shrub cl.

10. M. obtu'sa (Blum. bijdr. p. 939.) leaves coriaceous, oblong-cordate, obtuse, baccate at the base; flowers corymbose, dichotomous, rising from short axillary tendrils. ʃ. ʃ. S. Native of Java, on Mount Salak.

Oblate-leaved Modeca. Shrub cl.

11. M. farfiflora; leaves oblong-lanceolate, entire, acuminate, glabrous; tendrils simple; peduncles axillary, dichotomous. ʃ. ʃ. S. Native of Sierra Leone. Flowers small, yellow.

Small-flowered Modeca. Shrub cl.

12. M. macrophy'lla (Blum. bijdr. p. 939.) leaves coriaceous, oval, bluntish at both ends, somewhat auriculated at the base; flowers corymbose, dichotomous, rising from axillary tendrils. ʃ. ʃ. S. Native of Java, on Mounts Salak, Parang, &c.

Long-leaved Modeca. Shrub cl.

13. M. australis (R. Br. ined. ex D. C. prod. 3. p. 337.) leaves glabrous, somewhat ptalter at the base, cordate, running down the petiole in an auriculated manner at the base, acute, entire, glandless. ʃ. ʃ. S. Native of New Holland, in the gulf of Carpentaria.

Southern Modeca. Shrub cl.


Cult. See Passiflora, p. 56. for culture and propagation. The flowers of the species are by no means showy.


LIN. SYST. Monadél'phia, Penta-Octândria. Calyx 5-8-parted; lobes petaloid; crown a simple series of filamentose appendages, rising from the interior part of the calyx. Stamens equal in number to the lobes of the calyx; filaments joined at the base into a column. Ovarium ovate. Styles 3-4. Capsule pedicellate, 3-4-valved. Seeds arillate.—Climbing Madagascar shrubs, with axillary tendrils, impari-pinnate leaves, and glandular petioles.


Noronh's Deidamia. Shrub cl.

2. M. commersoni'ana (D. C. l. c.) leaflets elliptic, mucronate at the apex; peduncles 5-7-flowered; flowers pentandrous. ʃ. ʃ. S. Native of Madagascar.

Commerson's Deidamia. Shrub cl.


Thompson's Deidamia. Shrub cl.

Cult. See Passiflora, p. 56. for culture and propagation.

X. VARE'CA (altered from Walwareka, the name of the fruit in Ceylon). Gartn. fruct. 1. p. 219. t. 6. f. 6. D. C. prod. 3. p. 337.

LIN. SYST. unknown. Flowers unknown. Berry 1-celled; pulp divided into numerous partial cells for the reception of the seeds. Placenta 3, parietal, many-seeded.

1 V. Zýla'nica (Gartn. l. c.) Native of Ceylon. Nothing but the fruit of this plant is known.

Ceylon Vareca. Shrub cl.?
Cult. See Passiflora, p. 56, for culture and propagation.


Calyx tubular (f. 9. h.), membranous, inflated, 5-lobed (f. 9. a.); lobes imbricated in aestivation. Petals 5 (f. 9. b.), alternating with the segments of the calyx, permanent, convolute in aestivation, arising on the outside of the short membranous crown (f. 9. e.). Stamens 5-10, perigynous; filaments filiform, distinct, or connected with the stipe of the ovary; anthers versatile. Ovarium superior (f. 9. g.), stipitate, 1-celled, with the placenta at the base, from which the ovules arise by the intervention of umbilicate cords. Styles 3, filiform, very long, arising from distinct points at the apex of the ovary (f. 9. d.); stigmas clavate. Fruit capsular, 1-celled, 3-valved, membranous more or less, many-seeded. Seeds attached by umbilicate cords to the placenta, arising either from the axis of the valves, or from their base; testa crustaceous, brittle, with a fleshy crest, and no arillus. Embryo terete in the centre of fleshy albumen, with the radicle next the hynum.—Herbaceous or half shrubby plants, clothed with glandular pubescence. Leaves alternate, simple lobed, without stipulas. Flowers axillary or terminal, solitary, yellow or blue.

This order agrees with Passiflorae on the one hand, and Turneraceae on the other. From the former they differ in the insertion of their styles, in their versatile anthers, in their short placentas, membranous fruit, terete embryo, want of arillus, and stipulas; and altogether in their habit. From Turneraceae, to which their habit nearly allays them, they differ in the presence of a perigynous membrane, in the remarkable insertion of the styles, and in the want of all trace of an arillus; agreeing with that order in the estivation of the corolla, and in the principal other points of their structure. The plants are unknown except as objects of great beauty.


L. syst. Pentandria, Monogravia. Character the same as that of the order.


Thyrse-flowered Malesherbia. Shrub 1 to 2 feet.

2. M. paniculata (D. Don in edinb. phil. journ. 1837. p. 321.) leaves oblong, obtuse, ciliated, pinnatifid; upper ones nearly entire; throat of calyx dilated; crown simple, acutely toothed. G. Native of the north of Chili. Flowers yellow?

Panicled-flowered Malesherbia. Shrub 1 to 2 feet.


Linear-leaved Malesherbia. Pl. 2 to 3 feet.

4. M. huilensis (D. Don, l. c.) plant very villous; leaves jagged; throat of calyx dilated; crown simple, erose-toothed; anthers roundish. G. Native of Chili about Coquimbo. Stems procumbent. Flowers white.


5. M. corona (D. Don, l. c.) plant clothed with glandular pubescence; leaves linear, sinuate-toothed; throat of calyx dilated; crown simple, toothed. G. Native of Chili, at Valparaiso. Flowers white; crown blue. White. Sweet, fl. gard. new. ser. t. 167. (f. 9.)


6. M. fasciculata (D. Don, l. c.) leaves lanceolate, acuminate, quite entire; flowers in fascicles; crown 10-cleft, with the segments tridentate. G. Native of Chili. A stiff erect shrub. Flowers small, in bundles at the tops of the branches.

Fascicled-flowered Malesherbia. Shrub 1 to 2 feet.

7. M. tenuifolia (D. Don in edinb. phil. journ. Oct. 1832.) leaves nearly pinnate; segments linear; calyx tubular; crown deeply lobed. G. Native of the south of Peru, in the province of Tarapaca at Huatacona, where it is commonly called Agi de Zorra, i. e. Fox capsicum. Flowers reddish, according to the dried specimen.


Cult. This genus is composed of curious plants, bearing very showy singular flowers, and are therefore worthy of culture as ornaments. A mixture of loam, peat, and sand, or any light rich earth is a good soil for them. The shrubby species may either be increased by seeds; or young cuttings will root if planted in light soil, under a hand-glass. The seeds of annual kinds require to be sown in a hot-bed, in order to forward the plants; and after they have grown an inch in height, they may be potted off into small pots, and afterwards shifted into pots of increasing size, as they grow. Some of them may be planted out into the open border, in a sheltered situation, where they will probably flower and seed freely.


Tube of calyx adhering to the ovary, or girding it closely (f. 10. a. f. 12. a.); limb 5-parted (f. 11. a. f. 12. a.), rarely 4-parted, permanent. Petals equal in number to the lobes of the calyx (f. 12. b. f. 11. b.), with an inflexed valvate aestivation, or double that number (f. 10. b.), and disposed in 2 series; those of inner series, when present, usually much smaller (f. 10. b.) than those of the outer, scale-formed and truncate at the apex, inserted in the throat of the calyx. Stamens indefinite, arising from within the petals, disposed in several series, either distinct (f. 10. c.), or joined at the base in several parcels before each petal, within the cavity of which they lie in aestivation; filaments subulate (f. 10. g.), unequal, the outer ones frequently destitute of anthers. Ovarium adnate.
to the calyx (f. 10. a. f. 11. e.), or inclosed within it, 1-celled, with several parietal placentas (f. 11.), or with 1 free central lobed one. Style 1, composed of 3-5-7-jointed ones, crowned by as many lobes as stigmas. Capsule dry or succulent, crowned by the calyx (f. 10. d. f. 11. g. f. 12. c.), 1-celled, with several parietal placentas (f. 11.), originating at the sutures, and therefore may be called marginal, 3-4-7-valved; placentae equal in number to the valves, sometimes drawn out so far as to form sessiments (f. 11. f.). Seeds numerous, without arillus. Embryo lying in the axis of a fleshy albumen; with the radicle pointing to the hilum, and flat small cotyledons.—American herbs more or less pilose or hispid, with the hairs or bristles usually siring like those of the nettle, in consequence of their secreting an acid juice. Leaves opposite or alternate, exatipulate, simple, but usually variously divided. Peduncles axillary, 1-flowered. Flowers elegant. This order is distinguished from Onagrastrae by its unilocular ovary, and indefinite stamens, part of which are sterile; and perhaps by the latter character, and the additional 5 petals, connected with Pasafloria, with which they sometimes also accord in habit. Their rigid siring hairs, climbing habit, and lobed leaves resemble those of some Urtilaeae. On the same account they may be compared with Cucurbitacea, with which they further agree in their inferior unilocular fruit, with parietal placentas, and in the very generally yellow colour of their flowers. This, indeed, is the order with which, upon the whole, Loasaceae must be considered to have the closest affinity.

**Synopsis of the genera.**

1 **Bartonia.** Tube of calyx cylindrically (f. 10. a.); limb 5-parted (f. 10. b.). Petals 5-10 (f. 10. b.), about equal in shape. Stamens numerous (f. 10. c.). Capsule 3-7-valved; each placenta bearing 2 rows of seeds.

2 **Blumenbachia.** Tube of calyx spirally twisted (f. 11. e.); limb 5-parted (f. 11. g.). Petals 10 (f. 11. b.); 5 outer ones cuculate, and the 5 inner ones scale-formed, each scale including 2 sterile filaments. Fertile stamens disposed in 5 bundles (f. 11. b.). Fruit dividing into 10 parts at the base.

3 **Loosa.** Tube of calyx not twisted (f. 12. a.); limb 5-parted (f. 12. c.). Petals 10 (f. 12. b.); the 5 inner ones scale-formed, bearing 2 sterile filaments inside. Outer series of stamens sterile and free; inner ones disposed in 5 bundles, but distinct. Capsule 1-celled, 3-valved at the apex.

4 **Calophora.** The fruit is ovate, bursting into 3 valves from the base upwards; the placentas then separate from the sides of the capsule, and have the appearance of 3 arched columellae. The rest as in Loosa.

5 **Mentzelia.** Tube of calyx cylindrically (f. 13. b.); limb 5-lobed (f. 13. d.). Petals 5 (f. 13. a.). Stamens free, usually disposed in bundles (f. 13. c.). Capsule turbinate, 3-valved, few-seeded (f. 13. f.).

6 **Klaprothia.** Calyx with a turbinate tube, and a 5-parted limb. Petals 4. Stamens numerous, 4-5 sterile in front of each sepal, and 4-5 fertile in front of each petal. Fruit baccate, few-seeded.
posed in a leafy panicle. 


**LIN. SYST.** Polydélphi/a, Polygándria. Calyx 5-parted (f. 11. g.), with the tube adhering to the ovary. Petals 5 (f. 11. b.), inserted in the top of the calycine tube, cucullate, equal, spreading. Scales 5 (f. 11. b.), alternating with the petals, and inserted with them, furnished with 3 sterile filaments at the back of each, and clasping 2 subulate appendages inside. Stamens indefinite, inserted in the top of the calycine tube (f. 11. b.), disposed in 5 bundles, one opposite each petal; anthers 2-celled, bursting inwardly. Ovarium joined to the tube of the calyx. Style simple (f. 11. f.). Capsule marked with 10 spiral ribs, 1-celled, 10-valved; 5 of the valves thicker and broader than the other 5, with the placentas not reaching the axis; the other 5 narrower, with placentas almost reaching the axis (f. 11. h.), and bearing the seeds. Seeds rugged.—Branched, climbing, or trailing herbs, covered with stinging hairs. Leaves opposite, lobed. Flowers axillary, solitary, bracteate.


**Showy Blumenbachia.** Fl. July, Nov. CIt. 1826. Pl. tr.

2 B. **PAlma'ta** (St. Hil. fl. bras. 2. p. 208.) leaves deeply and palmately 3-5-lobed; lobes pinnatifid. O. H. Native of Brazil, on the confines of the province of Rio Grande de St. Pedro do Sul. Flowers with white petals; scales with ciliated edges, yellow at the base, lined with white, and red above it, tipped with vermillion colour.

**Palmate-leaved Blumenbachia.** Pl. tr.

3 B. **LATITÓLIA** (St. Hil. fl. bras. 2. p. 209. t. 118.) leaves trifoliate; lateral segments 3-lobed, unequal-sided, terminal one equal-sided, 3-5-lobed. O. H. Native of Brazil, in the province of St. Paul, between the towns of Rio Grande de St. Pedro do Sul and St. Francisco de Paulo. Flowers with white petals, and yellow scales tipped with orange colour. (f. 11.)

**Broad-leaved Blumenbachia.** Pl. tr.

4 B. **punicæa**; plant very hispid; leaves opposite, pinnatifid, having the segments jagged; calycine lobes jagged, shorter than the petals, which are cucullate; bundles of stamens polyandrous. O. H. Native of Peru. Loasa puricea, Ruiz et Pav. fl. per. 5. t. 446. ined. (v. s. herb. Lamb.)

**Scarlet Blumenbachia.** Pl. 1 to 2 feet.

5 B. **perosprémia**; hispid; leaves opposite, pinnatifid, rather cordate at the base; segments toothed; peduncles long, 1-flowered, cucullate; calycine segments toothed, shorter than the petals, which are cucullate; bundles of stamens polyandrous; stem climbing; seeds bordered by a wing. O. H. Native of Peru. Loasa pterospermia, Ruiz et Pav. fl. per. 5. t. 448. (v. s. herb. Lamb.)

**Winged-seeded Blumenbachia.** Pl. cl.

6 B. **sepíaria**; stem climbing; leaves opposite, pinnatifid, with the segments pinnatifid or coarsely toothed; peduncles long, axillary, 1-flowered; calycine segments jagged, linear, longer than the petals, which are cucullate; bundles of stamens polyandrous. O. H. Native of Peru. Loasa sepíaria, Ruiz et Pav. fl. per. 5 t. 449. ined.

**Hedge Blumenbachia.** Pl. cl.

7 B. **Mira'nta**; hispid; leaves opposite, ovate, serrated, petiolate; peduncles many-flowered, racemose, terminal, and rising from the forks of the stem; calycine lobes ovate, much shorter than the petals, which are cucullate, and holding 2 stamens each. O. H. Native of Peru. Flowers very small. Loasa micrántia, Ruiz et Pav. fl. per. 5. t. 442.

**Small-flowered Blumenbachia.** Pl. 1 foot.

8 B. **grandíflóra**; leaves opposite, petiolate, oblong, runcinate, acute, somewhat cordate at the base; pedicles 1-flowered, rising from the forks of them; stem climbing. O. H. Native of Peru. Loasa contórta, Lam. dict. 3. p. 579. D. C. prod. 3. p. 340. Juss. ann. mus. 5. p. 25. t. 3. f. 1. Loasa physiópètala, Ruiz et Pav. fl. per. 5. t. 447. ined. Flowers yellow.

**Great-flowered Blumenbachia.** Pl. cl.

Cult. Elegant annual plants, with very showy flowers; their culture and propagation are the same as that recommended for the species of Loasa, see p. 64.


**LIN. SYST.** Polydélphi/a, Polygándria. Calyx 5-cleft, with the tube adhering to the ovary (f. 12. a.). Petals 5 (f. 12. b.), cucullate, equal, spreading, inserted in the top of the tube; scales 5, inserted with the petals, furnished with 3 sterile filaments on the back of each, and girding 2 subulate appendages inside. Stamens indefinite, inserted in the top of the calycine tube, disposed in 5 bundles (f. 12. b.), opposite the petals; anthers 2-celled, bursting inwardly. Ovarium joined to the calyx. Capsule crowned by the lobes of the calyx (f. 12. a.), 5-valved at the top, 1-celled; placentas linear, alternating with the valves. Seeds rugged.—Branched, decumbent, or climbing herbes, beset with stinging hairs. Leaves alternate, or opposite, toothed or lobed. Flowers axillary, extra-axillary, or opposite the leaves, solitary or racemose.

* Leaves axillary.

1 L. **tríloba** (Juss. ann. mus. 5. p. 24. t. 1. f. 3.) leaves cordate at the base, usually 3-lobed; lobes acute, toothed; middle lobe usually somewhat 3-lobed; pedicels axillary; caly-
cine lobes small, acute. O. H. Native of Peru and Chili, about Valparaíso. Ruiz et Pav. fl. per. 5. t. 444. ined. Scales petalsoid, equally and bluntly 3-lobed. Flowers small.

Three-lobed-leaved Loasa. Pl. 1 foot.

2 L. acerifolia (Juss. l. c. p. 24. t. 1. f. 2.) leaves nearly opposite, coriace at the base, 5-7-lobed; lobes acute, toothed; pedicels shorter than the floral leaves; calyces lobes oblong, acuminate. o? H. Native of Chili and Peru. Loasa vi-tilfôlia, Ruiz et Pav. fl. per. 5. t. 443. ined. L. tricolor, Ker. bot. reg. 667. Scales as in L. trîloâda, but the calyce lobes are twice the length. Flowers with yellow petals and red scales.

Maple-leaved Loasa. Pl. tr.

3 L. bryonîfôlia (Schr. cat. hort. goett. 1823. pl. rar. hort. goett. with a figure) leaves coriace, lower ones 5-lobed, stalked, upper ones 3-lobed, almost sessile; all the lobes are sinuately lobed; pedicels exceeding the floral leaves; lobes of calyx a little toothed, acuminate. O. H. Native of Chili. Stem erect, bristly. Flowers yellow, hardly smaller than those of L. acerifolia. Stigma blunted. Seeds without aril; hyaline lateral.

Bryony-leaved Loasa. Pl. 1 foot.

4 L. xerîda (Lam. dict. 3. p. 581.) leaves coriace at the base, many-lobed; lobes acute, toothed, lower ones usually pinnatifid; pedicels axillary; calyces lobes oblong, toothed, shorter than the petals; wings of the corona very small, toothed, and stalked; stem much shorter than the petals; style straight, shorter than the stamens; sepals erect, much shorter than the petal-shaped fruit. O. H. Native of Chili and Peru, on the mountains. Juss. ann. mus. 5. p. 25. t. 2. f. 2. Trat. tabl. t. 23. Hook. exot. fl. t. 83. bot. mag. 2372. Ruiz et Pav. fl. per. 5. t. 445. Petals spreading reflexed, yellow, red at the base; scales red. Lobes of leaves bluntish. Stems prostrate.

Var. β: leaves more deeply lobed; lobes narrower.—Chili, about Valparaíso. L. tricolor, Lindl. bot. reg. 667.


5 L. sagittâta (Hook. et Arn. in bot. misc. 3. p. 238.) stems twining, pubescent; leaves all petiole, opposite, cordate-sagittate, acuminate, with rather lobed margins; the lobes crenated; pedicels axillary and terminal, few-flowered; calyce lobes ovate-oblong. O. & H. Native of Chile. There has none of the shining hairs, so peculiar to this genus, been observed on this species.

Sagittate-leaved Loasa. Pl. tw.

6 L. elonâta (Hook. et Arn. in bot. misc. 3. p. 239.) stems much elongated, nearly simple, shining; leaves remote, opposite, petiole, coriace at the base, 5-7-lobed; pedicels axillary, few-flowered, twice the length of the leaves; calyces lobes broadly ovate, shorter than the petals, which are red; fruit hemispherical. O. H. Native of Chili, about Coquimbo.

Elongated-stemmed Loasa. Pl. 2 to 3 feet.

7 L. prostrâta (Gill. ex Arnott, in Cheek, edinb. journ. 3. p. 274.) stems prostrate, flexuous; leaves opposite, sessile, cordate, ovate, deeply angular; pedicels axillary, 1-flowered, about twice the length of the leaves; calyces lobes lanceolate, longer than the fruit, and about equal in length to the petals; valves of capsule closely beset by long, rigid hairs; seeds egg-shaped, large, with a smooth testa. O. H. Native of Chili, on La Cuesta de los Manantiales, Cerro de San Pedro Nolasco, &c. Plant covered with long, rigid, stinging hairs.

Var. β, Cumingii (Hook. et Arnott, in bot. misc. 3. p. 239.) segments of leaves bipinnatifid and sinuately toothed. About Valparaíso, and on the mountains near Aconcagua. In the species the segments of the leaves are simply and sinuately toothed.

Prostrate Loasa. Pl. prostrate.

8 L. pâllida (Gill. ex Arnott, in Cheek, edinb. journ. 3. p. 276.) epidermis of stem loose, and shining; leaves opposite, all petiole, ovate, coarsely toothed; pedicels opposite, axillary, much longer than the leaves; pedicels short, in the forks, about equal in length to the flowers; calyces lobes linear-oblong, one half shorter than the petals. O. H. Native of Chili, among loose debris, on the banks of the El Rio del Yeso, near Arroyo de San Nicholas, at the elevation of about 5000 feet, &c., where it is called by the inhabitants Cavalluna. The plant is most nearly allied to L. sclaereotilfôlia, Juss. but that does not appear to have the loose epidermis on the stem, and the leaves are much larger. The pedicels in the forks of the panicle are elongated.

Pale Loasa. Pl. prostrate.

9 L. laterîta (Gill. sess. ex Arnott, in Cheek, edinb. journ. 3. p. 275.) stems almost wanting; leaves opposite, on long petioles, pinnate; segments roundish, crenated, lobed; pedicels twin, 1-flowered, terminal, about equal in length to the leaves; calyces lobes ovate, exceeding the tube, but one half shorter than the corolla. O. H. Native of Chili, at Los Imposibles, near the foot of the descent from the Planchon towards Chili, and in El Valle de Truy Carlos, at the base of the volcano of Pateroa, at an elevation of about 9000 feet. This species is readily distinguished by its large flowers of a brick red colour, and by its very short stems and radical branches, each of which bear 1 or 2 pairs of opposite leaves, and between the upper pair of which arise 2 1-flowered peduncles, terminating the branch. Seeds with a strongly reticulated tests like the next species; and as in it the hairs are short and not stinging.

Brick-coloured-flowered Loasa. Pl. prostrate.

10 L. pinifatâta (Gill. sess. ex Arnott in Cheek, edinb. journ. 3. p. 275.) stems nearly erect; leaves opposite, on long petioles; radical and lower ones pinnate; segments pinnatifid, with roundish approximate lobes; upper leaves pinnatifid; pedicels axillary, usually 1-flowered; calyces lobes ovate, much shorter than the corolla, and half the length of the fruit. O. H. Native of Chili, at La Cuesta del Inga, at an elevation of about 9000 feet. Plant with short rigid, but not stinging hairs.

Pinnatifid-leaved Loasa. Pl. 1 foot.

11 L. dissectâta (Hook. et Arn. in bot. misc. 3. p. 240.) stems erect, strong, a little branched at the apex, with a loose white epidermis; petioles opposite, lower ones elongated, becoming gradually shorter to the top of the stem; leaves tripinnatifid, with the ultimate segments ovate-obtuse; pedicels short, rising from the forks of the stem; calyces lobes narrow-oblong, not half so long as the petals. O. H. Native about Valparaiso, Los Ogos de Agua, and Aconcagua.

Dissected-leaved Loasa. Pl. 1 foot.

12 L. heterophylâta (Hook. et Arn. in bot. misc. 3. p. 228.) stems prostrate, dichotomous; leaves opposite, on short petioles; lower ones small, hastate triangular, coarsely toothed; lower floral ones nearly reflexed, 5-lobed, with the lobes nearly equal, and furnished with 1 or 2 teeth each; but the middle lobe of the uppermost leaves is rather lengthened; pedicels in the forks longer than the leaves; calyces lobes oblong-lanceolate, about equal in length to the petals; fruit conically hemispherical. O. H. Native about Valparaiso? and at Los Ogos de Agua. The stem is rarely pubescent; but the branches, particularly in their upper part, and the tubinate tube of the calyx, are provided with long sharp spreading hairs.

Variable-leaved Loasa. Pl. prostrate.

13 L. açanthîfolia (Lam. dict. 3. p. 579.) leaves coriace at the base, pinnatifid; lobes acuminate, sinuately toothed; pedicels axillary, and also from the forks, solitary, 1-flowered; lobes of calyx narrow, acuminate, reflexed, equal in length to the petals, which are bidentate. O. H. Native of Chili. Juss. ann. mus. 5. p. 25. t. 3. f. 2. L. nitida, bot. mag. 2372? L. cymbîpetâta, Ruiz et Pav. fl. per. 5. t. 442. b. ined. Oruga
Chilensis, Fruill. obs. 2. p. 757. t. 43. Petals yellow. Scales red. Herb erect, 4 feet high. The leaves are often alternate.

Acanthus-leaved Loasa. Pl. 4 to 5 feet.

14 L. Ruiziana; leaves opposite, ovate, coarsely serrated, hoary from down, petiole; peduncles axillary and terminal, 1-flowered; calycine segments acute, much shorter than the petals, which are ciliate. O. H. Native of Peru. L. incana, Ruiz et Pav. fl. per. vol. 5. t. 441. ined. (V. s. herb. Lamb.)

Ruiz’s Loasa. Pl. 1 foot.

15 L. sclarefolia (Juss. l. c. 5. p. 25. t. 1. f. 1.) leaves ovate-oblong, sinuately lobed; lobes acute, toothed; upper leaves sessile; pedicels solitary, 1-flowered in the forks of the stem; calydic lobes oblong, acuminate, shorter than the petals. O. H. Native of Chili. L. acanthifolia, Ker, bot. reg. t. 785. but not of Juss. Flowers yellow, with red scales.


17 L. grandiflora (Lam. dict. 3. p. 580.) lower leaves opposite; upper ones alternate, coriaceae at the base, 5-lobed; lobes deeply toothed; flowers axillary and terminal, on long pedicels; lobes of calyx acuminate, shorter than the petals. O. H. Native of Peru. Juss. ann. mus. 5. p. 26. t. 4. f. 2. Tratt. tab. t. 29. Ruiz et Pav. fl. per. 5. t. 440. Lower leaves on long, and upper on short pedicels. Flowers yellow. Scales oblong, 2-lobed, not appendiculate on the outside.


13 L. floribunda (Hook. et Am. in bot. misc. 3. p. 239.) root simple, fusiform; stem short, with a loose epidermis, simple beneath the inflorescence, but much branched and panicled above; leaves ovate-oblong, petiole: cauline ones opposite, sinuately lobed, coarsely toothed, coriaceae at the base; lower floral ones alternate, sinuately lobed: upper floral ones smaller, cuneate at the base, toothed or quite entire; pedicels short, rising from the forks of the stems; calydic lobes elliptic, acute, attenuated at the base, shorter than the apiculated petals; scales furnished with 3 appendages each on the back above the middle. O. H. Native about Valparaiso, and on the Cordillera of Chili.

Bundle-floweread Loasa. Pl. 1 foot.

** Leaves alternate.

19 L. Loxea (H. B. et Kunth, nov. gen. amer. 6. p. 116.) leaves alternate, and nearly opposite, ovate-oblong, 3-5-lobed; lobes irregularly toothed; middle lobe very large; flowers terminal and axillary, somewhat racemose; lobes of calyx ovate, acuminate, 3-nerved. O. S. Native of Peru, near Loasa. Leaves white beneath. Flowers yellow. Scales rounded at the apex, drawn out into a lobe at both ends. Herb suffrutescent branched.

Loasa Loasa. Shrub.

20 L. argemoneoides (Juss. ann. mus. 5. p. 26.) leaves coriaceae, sinuately lobed, tomentose on both surfaces, white beneath; flowers terminal and axillary, pedicellate; lobes of calyx lanceolate, one-half shorter than the petals. O. S. Native of South America, near Santa Fe de Bogota. Humb. et Bonpl. pl. equin. 1. p. 53. t. 15. H. B. et Kunth, nov. gen. amer. 6. p. 26. Tratt. tab. t. 30. Flowers nearly 3 inches in diameter. Scales bifid, furnished with 2 acute lobes, which are gibbous at the base.

Argemone-like Loasa. Pl. 6 to 10 feet.

21 L. ranunculifolia (Humb. et Bonpl. pl. equin. 1. p. 50. t. 14.) leaves all alternate, somewhat orbicular, coriaceae, toothed, clothed with yellowish tomentum above, and silky white tomentum beneath; flowers terminal and axillary, somewhat racemose; lobes of calyx ovate-lanceolate, acute. O. S. Native of Peru, on the Andes near Casamara. H. B. et Kunth, nov. gen. amer. 6. p. 117. Tratt. tab. t. 27. Flowers large, yellow. Scales bifid, bigibbous at the base.

Crow-foot-leaved Loasa. Pl. 2 feet.

22 L. inca (Graham in edinb. phill. journ. Oct. 1830.) plant suffrutescent, reddish, erectissime; leaves scattered, petiolate, ovate-lanceolate, hoary, deeply serrated, scabrous; peduncles 1-flowered, opposite the leaves. O. G. Native of Peru, from Yaze to the valley of Canta. Corolla white. Whole plant covered densely with harsh barbed white hairs, intermixed by a few stinging ones. Cuticle papery, and pealing off.


23 L. xanthitilium (Juss. l. c. 2. f. 1.) leaves petiolate, coriaceae, oblong, acute, coarsely toothed; pedicels extra-axillary; lobes of calyx oblong, hardly acute. O. H. Native of Peru. Flowers small, yellow. Stems a foot and half high. Tratt. tab. t. 26. Xanthitilium-leaved Loasa. Pl. 1 f. 2 feet.

24 L. chenopodiifolia (Lam. dict. 5. p. 550.) leaves petiolate, somewhat ovate, deeply toothed; racemes loose, leafy, terminal; flowers drooping. O. H. Native of Peru. Perhaps a mere variety of the preceding, according to Juss. ann. mus. 5. p. 26.

Goosefoot-leaved Loasa. Pl. 1 to 2 feet.

25 L. parviflora (Schrad. pl. rar. bras. ined. ex D. C. prod. 3. p. 312.) leaves on long petioles, ovate-coriaceae, sinuately 3-7-lobed, hairy; flowers racemose; racemes extra-axillary, few-flowered, shorter than the leaves; lobes of calyx acutish. O. H. Native of Brazil, in the provinces of the Mines. Peduncles and calyces bristly. Flowers with white petals and brown scales. Bristles or sterile stamens at back of scales white.

Small-floweread Loasa. Pl. trailing.

26 L. aspera (Ruiz et Pav. fl. per. 5. t. 441.) hibiscid; leaves alternate, angularly lobed, and coarsely toothed; pedicels solitary, lateral; calyx long, very hibiscid; calydic segments ovate, longer than the petals. O. H. Native of Peru.

Rough Loasa. Pl. 1 to 2 feet.

27 L. ambrosefolia (Juss. l. c. 4. f. 1.) leaves petiolate, bipinnatifid; lobes and lobules blunting; pedicels extra-axillary; lobes of calyx lanceolate-linear, acute, shorter than the petals. O. H. Native of Peru. Stem a foot high, hardly branched. Herb beset with yellowish prickles. Flowers yellow, an inch in diameter. Tratt. tab. t. 51. Scales bifid, not appendiculate on the outside.


Ambrosia-leaved Loasa. Pl. 1 foot.

28 L. volubilis (Juss. l. c. 5. f. 1.) leaves alternate and opposite, bipinnatifid; lobes linear, obtuse; flowers terminal and axillary, pedicellate; lobes of calyx a little toothed, one half shorter than the petals; stem twining. O. H. Native of Chili, near Concepcion, in sandy places; and of Peru. Tratt. tab.

FIG. 12.
t. 34.  L. multifida, Ruiz et Pav. fl. per. 5. t. 443. b. Scales 2-lobed. Flowers small, yellow.

Twining Loasa.  Pl. 1. c. 11.

29. L. triphylla (Juss. l. c. p. 27. t. 5. f. 2.) leaves for the most part cut into 3 stalked, oblong, toothed segments: a few triplicate; pedicels extra-axillary; calyceal lobes elliptic-oblong.  O. H. Native of Peru, on the Andes, in the high plains. Tratt. tab. 1. t. 21. H. B. et Kunth, nov. gen. amer. 6. p. 118. Stems ascending. Three-leaved Loasa.  Pl. ascending, 1 foot.

30. L. papaverifolia (H. B. et Kunth, nov. gen. amer. 6. p. 118.) leaves trifoliolate; segments or leaflets stalked, oblong, toothed; middle leaflet large, pinnatifid; flowers opposite the leaves, disposed in something like racemes; calyces of calyx elliptic, 3-nerved.  O. H. Native of the Andes, about Quindin. Stem simple, ascending. Flowers white. There is a figure in the Flora Mexicana which agrees with this plant, except that the petals are drawn bifid at the apex.

Poppy-leaved Loasa.  Pl. 1 foot.

Cul.  All the species of Loasa bear such beautiful flowers, that they are all worth cultivating for ornament, but they are so full of stings that it is impossible to handle them. The seeds of the annual species should be sown early in spring in the open ground, and the plants so raised will flower and produce seed the same season: or the seeds may be sown in pots, and reared in a hot-bed, and the plants may afterwards be planted out in the open border, in any convenient situation. All the species require a rich light soil and a warm situation. Some of the species are said to be perennial; we suppose all would be so if they were protected from frost.

IV. CAIOPHORA (meaning not explained).  Presl. in reliq. Henck. 2. p. 43.

Lin. syst. Polydéphila, Polyángria. Calyx 5-parted; segments jagged. Petals 5, unguiculate, concave. Scales 5, peltate, elliptic, or 4-toothed at the apex, each furnished with a few sterile filaments inside. Stamens numerous, disposed in 5 bundles. Style trigonal, permanent; stigmas 3, conniving. Capsule ovate-oblong with elevated spiral ribs, crowned by the reflexed calyx, 1-celled, many-seeded, opening at 3 of the sutures. Placenta marginal in the valves, but at length distinct from them. Seeds angular, echinated by bristles or reticulated.—Usually climbing plants, with the habit of Loasa, beset with stinging hairs. Peduncles 1-flowered. Flowers yellow. This genus differs from Loasa and Blumenbachia in the character of the capsule, in the scales being furnished with 4 sterile filaments instead of 5, and in many other points. There are several plants now referred to the genus Blumenbachia which belong to this genus; viz. B. grandiflora, which is Caiphora contorta, Presl. reliq. Henck. 2. p. 42. and B. punctata, which is evidently the Caiphora circifolia, Presl, l. c. 54. and carduifolia, Presl. l. c. p. 42.

1. C. corona (Hook. et Arn. in bot. misc. 3. p. 238.) stems short; leaves opposite, petiolate, pinnate; segments bi-pinnatifid; lobules denticulated; peduncles axillary, 1-flowered, elongated; calyceal lobes pinnatifid, with linear segments, longer than the ovary.  O. H. Native of Chili, on both sides of the Cordillera of the Andes, between Mendoza and Chili, at an elevation of 8,500 to 11,000 feet. The burrows of the fruit are nearly straight, or hardly spiral, so that this species partakes in some degree of the characters of Loasa. Loasa corona, Gill. mss. ex Arnott, in Cheek, in edinb. journ. 3. p. 274. C. abisinthaefolia, Presl. in reliq. Henck. 2. p. 43.

Crowned Caiophora.  Pl. prostrate, rising 1 to 2 feet.

Cult.  See Loasa for culture and propagation.

V. SCYPHANTHUS (σκυφός, skyphos, a cup, and ανθος, a flower; in reference to the form of the flower). Sweet, fl. gard. t. 238.

Lin. syst. Polyadéphia, Polyandria. Calyx deeply 5-parted, permanent, equal. Petals 5, inserted in the base of the calyx, on very short claws, concave, equal. Scales inserted with the petals, peltate at the apex, lobed, 3-horned. Stamens numerous, perigenous, the 10 exterior ones destitute of anthers; and these are placed by twos opposite the scales, and are longer than the rest, which are disposed in 5 fascicles opposite the petals; anthers 2-celled, erect. Ovarium prismatic, sique-formed; style one, erect, trigonal. Capsule prismatic, sique-formed, crowned by the tube of the calyx, 3-valved at the apex; seeds oval, wrinkled.—A twining herb, having its branches beset with retrograde strigile. Leaves opposite, pinnatifid; superior ones bipinnatifid, hispid from hairs. Flowers sessile, erect, solitary, yellow.


Lin. syst. Icosandria, Monogynia. Calyx permanent, with a cylindrical, somewhat 5-furrowed tube, and 5 lanceolate or subulate, equal lobes (f. 13. d.). Petals 5 (f. 10. a), equal, inserted in the upper part of the tube of the calyx. Stamens indefinite (f. 13. e), multiple the number of the petals, and inserted with them; filaments free, usually disposed in 5 bundles; anthers erect, ovate, bilocular. Ovarium adnate to the calycine tube. Styles 3, connected to the middle or to the top, marked by 3 corresponding stripes. Capsule turbinate-cylindric, filamented by the calycine lobes (f. 13. d. 1-celled, 3-valved at the apex. Seeds 3-6-9, or irregular in number in consequence of abortion, inserted in 3 parietal placentas.—Erect, branched, dichotomous herbs, rough from bearded or glabrous stiff hairs. Leaves alternate, or nearly opposite, coarsely toothed. Flowers of a deep orange colour, solitary, almost sessile in the forks of the stem, or pseudo-axillary from one of the branches being abortive, expanding in the height of the sun.


2 M. oligosperma (Nutt. in Sims, bot. mag. t. 1760.) petals oval, acuminate, longer than the calyx, but very little longer than the stamens.  G. Native of Louisiana, on the banks of the river Missouri, among rocks. M. aurea, Nutt. gen. amer. 1. p. 300. Root tuberous, succulent. Seeds 3, smooth, linear-oblong. Hairs on plant bearded their whole length.


* * * Stamens 30-100, the 10 exterior ones the longest. Seeds 6-9. Flowers larger than those of the last section.

3 M. mepida (Willd. spec. 2. p. 1176.) petals obovate, muc-


4 M. *stria* (H. B. et Kunth, nov. gen. Amer. 6. p. 120.) petals obovate, mucronately cuspidate, 2 or 3 times longer than the calyx; stamens about 50; leaves and flowers almost sessile; hairs on the branches retrograde. 2 G. Native of Mexico, near Rio Sarceo. Filaments of outer stamens dilated at the apex. Ovula 10.

*Strigose Mentzelia*. Pl. 1 to 2 feet.

5 M. *scabra* (H. B. et Kunth, l. c.) petals obovate, acute, a little longer than the calyx; stamens 100–110; flowers sessile in the forks of the stems; leaves pilose. 2 G. Native of New Granada, on the Andes about Pasto. Seeds scabrous, 6–9.

*Scabrous-seeded Mentzelia*. Pl. 1 to 2 feet.

6 M. *grandiflora* (Ruiz et Pav. Fl. Per. 5. t. 441. ined.) petals obovate, pointed, much longer than the calyx; calyx cleft lobes ovate-lanceolate, acuminate, reflexed when the flowers are open; stamens numerous, from 30–40; outer ones the longest; leaves alternate, ovate, coarsely toothed, on short petioles. 2 G. Native of Peru.

*Great-flowered Mentzelia*. Pl. 2 to 3 feet.

7 M. *hirta* (Pav. in herb. Lamb.) calyx covered with long hairs; calyx segments lanceolate, much shorter than the petals; stamens numerous; leaves cordate, lobed, obtuse, alternate, clothed with soft pubescence; peduncles many-flowered. 2 G. Native of Mexico. (v. s. in herb. Lamb.)

*Hairly Mentzelia*. Pl. 1 foot.


*Stipitate-flowered Mentzelia*. Pl. 1 to 2 feet.

*Cult.* The species grow well in any light rich soil; and cuttings will root readily in sand, under a hand-glass. They are also easily reared from seeds, which ripen in this country.


 **LIN. Syst. Icosándria, Monogynía.** Calyx permanent, with a turbinated tube and a 4-parted limb; lobes ovate, equal. Petals 4, on very short claws. Stamens numerous, especially 4–5 fertile ones in front of each petal; these are longer than the others, and 4–5 sterile ones in front of each sepal; these are pilose, and somewhat dilated at the apex into a 2-lobed membrane. Styles 4, connected together almost to the apex in one. Ovarium 1-celled, 5-nerved inside, and 4-ovulate; ovula pendulous, fixed to the nerves opposite the sepals. Fruit baccate. Herb twining; branches scabrous from retrograde hairs. Leaves opposite, sharply toothed, stalked. Peduncles cymosely corymbose at the tops of the branches. Flowers white.


*Cult.* For culture and propagation see *Loasa*, p. 65.


Calyx free, usually coloured more or less, profoundly 5-cleft (f. 14. a.), deciduous; lobes equal, imbricate in aestivation. Petals 5, equal (f. 14. b.), inserted into the upper part of the tube of the calyx, and alternating with its lobes, narrow at the base, twisted in aestivation. Stamens 5, inserted in the upper part of the tube of the calyx below the petals, and alternating with them; filaments free, flat; anthers oblong, erect, 2-celled (f. 14. c.). Ovarium free, 1-celled (f. 14. d.), many-ovulate. Ovula ascending (f. 14. f.), fixed to 3 linear parietal placenter. Styles 3 (f. 14. e.) or 6, usually more or less deeply bifid, and cleft into many stigmas at the apex (f. 14. e.). Capsule 3-valved, 1-celled (f. 14. f.); valves bearing the seeds in their middle, along a longitudinal placenta, opening from the apex as far as the middle. Seeds subcylindrical, curved, crustaceous, reticulated, furnished with a thin, membranous arillus on one side. Hilum situated at the base of the seed. Embryo in the centre of a fleshy albumen, somewhat incurred, spatulate, with the radicle turned towards the hilum, and with plano-subcconvex cotyledons.—Shrubs, subshrubs, and herbaceous plants, with a simple pubescence. Leaves alternate or scattered, simple, exstipulate, with occasionally 2 glands at the apex of the petioles, toothed, rarely pinnatifid. Flowers axillary, sessile, or pedunculate; the peduncles of the petioles either distinct or connected with the petioles, simple and 1-flowered or branched and many-flowered, articulated in the middle or furnished with 2 small bracteoles. Petals yellow or yellowish, rarely blue. This order is placed by De Candolle between *Loasa* and *Fouquieraceae*, chiefly it would seem on account of its manifest relation to the former, and its perigynous stamens. With *Malaceae* it agrees in the twisted aestivation of the corolla and habit. With *Loasa* and *Passifloraceae*, they have also much in common. In the structure of the fruit it agrees with *Violaceae* and *Cistaceae*, but differs in the petals and stamens being inserted into the calyx, and the circumstance of their certain relationship to *Cistaceae* gives great weight to the ingenious approximation, by M. Du Petit Thouars, of *Passifloraceae* to *Violaceae*. The presence of glands upon the ends of the petals of *Turneraceae* is a confirmation of their affinity to the former. It is distinguished from *Loasa* by the fruit being superior and 1-celled, with parietal placenta, and by the definite stamens; the former character is, however, weakened by the nearly superior fruit of some *Loasa*.

**Synopsis of the Genera.**

1 **Turnéra**. Styles 3 (f. 14. e.), simple, divided at the apex into multifid stigmas (f. 14. e.). Capsule opening from the top to the middle.
2 Periqueta. Styles 3, deeply 2-parted, crowned by 2 multifid stigmas each. Capsule opening from the top to the base.


§ 1. Peduncles joined with the petioles, biparticate.

* Leaves biglandular at the base.

1 T. ulmiifolia (Lin. spec. ed. 1. p. 965.) leaves oblong, acute, serrated, pubescent above, but clothed with white tomentum beneath, and biglandular at the base; flowers almost sessile; styles shorter than the stamens. S. Native of South America. A plant of Brazil, in the provinces of Minas Geraes and St. Paul, in grassy pastures and fields. Petals oblong, ovate, yellow. Oblong-leaved Turnera. Shrubs ½ to 1 foot.


§ 2. Acute-leaved Turnera. Shrubs 1 foot.

3 T. acutata (Mart. reis. bras. ex D. C. prod. 3. p. 346.) plant downy; leaves linear-lanceolate or lanceolate, acute, attenuated and biglandular at the base, remotely and acutely serrated, pubescent; stamens shorter than the calyx. S. Native of Brazil, at Rio Jaquininhona and Rio Verde Grande.

Bee-bearing Turnera. Shrubs 1 foot.


Silky Turnera. Shrubs 1 to 2 feet.

5 T. arenaria (H. B. et Kunt., lac. p. 120.) leaves ovate-oblong, coarsely serrate-serrated, clothed with silky hairs on both surfaces, canescent beneath; flowers sessile; styles pilose. S. Native of New Granada, near Honda. Petals yellow, with violaceous claws. Capsule roundish-ovate.

Soft Turnera. Shrubs 1 foot.

6 T. arenaria (St. Hil. fl. bras. 2. p. 216.) leaves oblong, obtuse, coarsely toothed, biglandular at the base beneath, woolly on both surfaces, but especially beneath; flowers sessile; styles 3-times longer than the stamens. S. Native of Brazil, in the province of Minas Geraes. Petals oblong-obovate, yellow, red at the base.

Long-leaved Turnera. Shrubs 1 to 1½ foot.

7 T. arenaria (St. Hil. fl. bras. 2. p. 217.) leaves lanceolate, acute, coarsely toothed, lower ones glandless, upper biglandular at the base beneath, clothed with silky pubescence on the upper surfaces, and with yellowish tomentum beneath; flowers sessile in fascicles. S. Native of Brazil, in the province of Minas Geraes. Petals oblong-obovate, of a golden yellow colour.

Yellowish Turnera. Shrubs 2 to 3 feet.

8 T. arenaria (St. Hil. fl. bras. 2. p. 217.) leaves oblong or

K 2
oblong-lanceolate, acutish, crenately-toothed, clothed with velvety pubescence above, and hoary tomentum beneath, and biglandular at the base; flowers sessile; styles one half longer than the calyx.

**Hoary Turnera.** Shrub 1 to 2 feet.

17 **T. melochoïdes** (St. Hil. fl. bras. 2. p. 219.) leaves oblong-oblong elliptic, unequally crenate-toothed, rather roughish above, and clothed with rufescent tomentum beneath, biglandular at the base; flowers sessile; styles a little longer than the stamens. Σ. Native of Brazil, in the province of Goyaz. Petals yellow, ovobolate-oblong.

18 **T. na'na** (St. Hil. fl. bras. 2. p. 219.) leaves obovate-oblong, rounded at the apex, crenate, pubescent on both surfaces, but especially beneath, biglandular at the base; flowers sessile; styles 3-times longer than the stamens. Σ. Native of Brazil, in the province of Minas Geraes. Petals ovobolate, yellow.

**Melochia-like Turnera.** Shrub 1 to 1½ foot.

19 **T. genistoides** (St. Hil. fl. bras. 2. p. 220.) leaves linear, acutish, glandless, hairy; flowers sessile; styles twice the length of the stamens. Σ. Native of Brazil, in the province of Minas Geraes, near Tejucó. Petals ovobolate-oblong, glabrous.

**Genista-like Turnera.** Shrub ½ to 1 foot.

21 **T. chamædrifolia** (St. Hil. fl. bras. 2. p. 221.) leaves oblong, acute, deeply toothed, glandless, pubescent on both surfaces, but especially beneath; flowers on short peduncles; styles exceeding the stamens. Σ. Native of Goyaz, in that part of the province of Minas Geraes called Minas Novas, on the banks of the river Jiquitinonha. Petals rose-coloured?

**Germander-like Turnera.** Shrub ½ to 1 foot.

22 **T. pinatifida** (Juss. in Poir. dict. 8. p. 144.) leaves ovobolate-oblong, cuneate, toothed, or pinatifid, glandless, hairy, or tomentose; flowers pedunculate; styles 3-times longer than the stamens, purple. Σ. Native of Brazil, in the province of Cisplatin, in pastures and fields. Petals scarlet, denticulated at the apex.

**Var. β. angustiloba** (D. C. prod. 3. p. 347.) stems diffuse; leaves hairy, pinatifid; lobes narrow, acute; flowers of a dirty red or copper colour. Σ. Native of Brazil, about Monte Video, and in the province of Cisplatin.

**Var. γ. carnea** (St. Hil. fl. bras. 2. p. 222.) stems ascending, 6 inches high; leaves hairy, oblong-lanceolate, cuneate, deeply toothed; petals pale red, usually marked at the base with a dark purple spot each; filaments puberulous. Σ. Native of Brazil, in the province of Cisplatin.

**Pinatifida-leaved Turnera.** Shrub ½ foot.

25 **T. setosa** (Smith, in Rees' cyclo. no. 6.) leaves ovate-wedge-shaped, serrated or pinatifid, very hairy on both sides, without glands; peduncles axillary, partly combined with the footstalks; outer calyx linear. Σ. Native of Monte Video and Buenos Ayres. Flowers tawny, red.

**Bristly Turnera.** Pl. ¼ to ½ foot.

24 **T. mutiflora** (Lin. amen. 5. p. 395.) leaves broad-lanceolate, deeply serrated, hairy; flowers sessile, propped by 2 linear bracteoles; styles and stamens length of petals. Σ. Native of Jamaica, in arid fields. Swartz, obs. 116.—Soane, jum. hist. 127. f. 6.—Pumilia, no. 1. P. Browne, jum. 188. Stem hardly 3 inches long. Plum. icon. t. 150. f. 1. Flowers small, yellow.


25 **T. microphylla** (D. C. prod. 3. p. 347.) leaves oblong, attenuated at the base, crenate, wrinkled, clothed with white tomentum beneath; flowers sessile, bearing 2 linear, adpressed bracteoles at the base. Σ. Native of St. Domingo. T. pumilia, Poic. dict. 8. p. 143. but not of Swartz. Petiv. gaz. t. 38. f. 9. T. diffusa, Wildl. rel. in/Rom. et Schultes, syst. 6. p. 679. This plant differs from T. pumilia in the stem being suffrutsecent, nearly a foot high, and much branched. Perhaps T. microphylla, Desv. in Hamilt. prod. p. 33. is referrible to this plant.

**Small-leaved Turnera.** Shrub 1 foot.

§ 2. Peduncles distinct from the petioles, axillary. Flowers bibracteolate.

26 **T. rupestris** (Abel. guian. 1. p. 289. t. 113. f. 1.) leaves linear, serrated, glabrous, glandless; flowers nearly sessile, bearing 2 seactaceous bracteoles at the base. Σ. Native of Guiana, in the fissures of humid rocks, at the river Sinemari. Petals yellow, somewhat toothed at the apex, 3 lines long. Flowers small, yellow.


27 **T. fruticosus** (Abel. l. c. p. 290. t. 113. f. 2. but not of Mill.) leaves lanceolate, acuminate, equally serrated; flowers nearly sessile, bearing 2 sessile, lanceolate-linear bracteoles. Σ. Native of Guiana, in the fissures of rocks, on the banks of the river Sinemari. Very like T. rupestris, but differs in the leaves being broader, and in the serratures being more crowded. Flowers small, yellow.

**Var. β. latifolia** (D. C. prod. 3. p. 347.) leaves ovate, acute. Σ. Native of Cayenne.

**Subrhyby Turnera.** Shrub 5 to 8 feet.

28 **T. tormentosa** (H. B. et Kunth, nov. gener. amer. 6. p. 123. but not of Willd.) leaves oblong, irregularly crenate-serrated, pubescent above, but clothed with canescens tomentum beneath, glandless at the base; flowers sessile, with 6 stamens and 6 petals. Σ. Native of South America, in the province of Venezuela. Styles hairy, about equal in length to the stamens. Petals yellow.

**Tomentose Turnera.** Shrub 1 foot.

29 **T. sinoides** (Lin. manti. p. 58.) leaves ovobolate-cuneated, serrated, quite entire at the base, rather tomentose on both surfaces, pilose on the veins and margin beneath; flowers on very short pedicels; bracteoles linear, hairy. Σ. Native of Brazil. Habit of T. cistoides. Petals ovoblate, yellow.

**Sida-like Turnera.** Shrub ½ foot.

30 **T. carpentinolos** (H. B. et Kunth, l. c.) leaves oblong-lanceolate, doubly serrated, puberulous, biglandular at the base; flowers on short pedicels; bracteoles ovate, acuminate, serrated. Σ. Native on the humid banks of the river Oriñoco, near Maypures. T. acuta, Willd. rel. in Rom. et Schultes, syst. 6. p. 678. ex Kunth. Flowers yellow. According to Willd. the flowers are petiolate; if such be the case, the plant belongs to the preceding section.

**Hornebeam-leaved Turnera.** Shrub 1 to 2 feet.

31 **T. Duarteana** (St. Hil. fl. bras. 2. p. 223.) leaves ovate,
obtuse, crenated, glandless, pubescent above, hairy, tomentose beneath, white; peduncles simple. $\ddag$. S. Native of Brazil, in the western part of the province of Minas Geraes. Styles shorter than the stamens. Petals 5-times longer than the calyx, erose, or rounded at the apex, rose-coloured when dry. Bracteas small, deciduous.

Var. $\beta$. rotundifolia (St. Hil. l. c.) leaves smaller, ovate-roundish; flowers yellow. This variety will perhaps constitute a distinct species.

Duarte's Turnera. Shrub 1 foot.

32. T. helianthemoides (St. Hil. l. c. p. 224.) leaves oblong or oblong-lanceolate, acutish, unequally denticulated, glandless, pubescent above, but clothed with white tomentum beneath; flowers axillary; peduncles simple; bracteas small, deciduous. $\ddag$. S. Native of Brazil, in the southern part of the province of Goiaz, on the banks of the river Parahyba. Petals obovate. Styles about equal in length to the stamens.

Sun-rose-like Turnera. Pl. $\frac{1}{2}$ to 1 foot.

33. T. rosea (St. Hil. l. c. p. 225.) leaves linear-lanceolate, obtuse, oblongate, denticulated, glandless, rather pilose on both surfaces; pili pilose; peduncles simple; bracteas small, deciduous. $\ddag$. S. Native of Brazil, in the province of St. Paul, not far from the town called Franca. Petals rose-coloured, obovate, erose at the apex. Styles twice the length of the stamens.

Rose-coloured Turnera. Pl. $\frac{1}{2}$ to 1 foot.

34. T. siderifolia (St. Hil. l. c. p. 227. t. 124.) leaves oblong, obtuse, crenated, glandless, rather scabious above, but clothed with hoary tomentum beneath; peduncles axillary, 1-2-flowered; bracteas small, subulate, tomentose. $\ddag$. S. Native of Brazil, in the province of Minas Geraes, at a place called Aldeia da boa Vista. Petals obovate, oblongate, crenulated, yellow. Styles shorter than the stamens.

Sida-leaved Turnera. Shrub $\frac{1}{2}$ to 1 foot.

35. T. aurea (St. Hil. l. c. p. 226.) leaves oblong, narrowed at the base, acute, or rounded at the apex, serrately toothed, glandless, beset with golden hairs; peduncles simple, articulated in the middle. $\ddag$. S. Native of Brazil, in the province of Minas Geraes, near the town of St. Joao del Rey. Petals twice or thrice the length of the calyx, cuneated at the base and rounded at the apex, rose-coloured or flesh-coloured; each marked by a dark purple spot at the base. Styles shorter than the younger stamens.

Golden-haired Turnera. Shrub $\frac{1}{2}$ to 1 foot.

§ 3. Flowers disposed in axillary and terminal racemes.

36. T. racemosa (Jacq. hort. vind. 3. t. 94.) leaves oblong, or oblong-lanceolate, acutish, unequally denticulated, glandless, pubescent above, and clothed with white tomentum beneath; upper flowers leafless at the base, and therefore disposed in a terminal raceme; peduncles simple. $\ddag$. S. Native of Brazil, in the province of Minas Geraes, on the banks of the river Jiquitinonha; and of St. Domingo. Stem and peduncles hispid. Petals ovate, yellow, furnished each with a small jagged appendage on the inside at the base. Styles longer than the stamens.


37. T. salicifolia (St. Hil. l. c. p. 227.) leaves lanceolate, acuminate, serrated, glandless, smoothish; peduncles axillary, many-flowered. $\ddag$. S. Native of Brazil, near Rio Janeiro. Petals obovate, striated, yellow, denticulated at the apex. Styles about equal in length to the calyx.

Willow-leaved Turnera. Shrub 2 to 3 feet.

38. T. capitata (St. Hil. l. c. p. 215.) leaves elliptic-oblong, or oblong-lanceolate, acute, dentately serrated, nearly glandless, pubescent above, and clothed with yellowish tomentum beneath; flowers sessile, forming a many-flowered head at the tips of the branches. $\ddag$. S. Native of Brazil, in the province of Minas Geraes, on the margins of woods near Poso Alto, not far from the confines of the province of St. Paul, and on the iron mountains near Nossa Sena da Conceicao. Petals obovate-oblong, pale yellow. Styles much shorter than the stamens.

Capitate-flowered Turnera. Shrub 2 to 3 feet.


40. T. glabra (D. C. prod. 3. p. 347.) leaves linear, obtuse, subseriately, narrowed at the base, glandless; racemes few-flowered; pedicels rising from the axis of small linear leaves and longer than them, articulated and bracteose at the middle. $\ddag$. S. Native of St. Domingo. Stems erect, glabrous. Flowers yellow?

Glabrous Turnera. Pl. 1 to 2 feet.

41. T. citrus (Linn. spec. 387.) leaves linear-lanceolate, serrated, pubescent above, tomentose beneath, glandless at the base; racemes terminal, leafy; pedicels rising from the axis of lanceolate leaves, and shorter than them, articulated and bracteose above the middle. $\ddag$. S. Native of South America, in sterile places, Surinam, Jamaica, St. Domingo, Georgia, &c. Sloan. Jam. hist. 1. p. 127. f. 7. Plum. Ed Burm. t. 150. f. 1. Swartz. obs. 117. T. hispida, Bert. mass. Flowers small, yellow.

Rock-rose-like Turnera. Fl. June, Oct. Cit. 1774. Pl. $\frac{1}{2}$ ft. 42. T. australis (Poir. dict. 8. p. 144.) leaves elliptic, sessile, a little toothed, pubescent above, and rather tomentose beneath, glandular; stem hardly pubescent, rough; racemes leafy, terminal; pedicels rising from the axis of the leaves, and shorter them, articulated above the middle. $\ddag$. S. Native of French Guiana. Flowers yellow. Perhaps a variety of T. citrus or of Periqueta eilosa.

Rough Turnera. Pl. $\frac{1}{2}$ foot.

† Species not sufficiently known.

43. T. odorata (Rich. in act. soc. hist. nat. par. 1792. p. 107.) shrubby, much branched; flowers small; leaves ovate, acute, toothed, tomentose. $\ddag$. S. Native of Cayenne. Flowers yellow?

Sweet-scented Turnera. Shrub.

44. T. hispida (Willd. rel. in Rom. et Schult. syst. 5. p. 678.) leaves linear-lanceolate, unequal, bluntly serrated, clothed with stellate tomentum on both surfaces; flowers axillary, solitary; stem branched, hairy. $\ddag$. S. Native of Brazil. Yellow flowers.

Hairy Turnera. Fl. June, July. Cit. 1818. Pl. $\frac{1}{2}$ to 1 ft.

45. T. braziliensis (Willd. rel. l. c.) leaves lanceolate, quite entire, clothed with hispid pubescence; flowers axillary, sessile, aggregate. $\ddag$. S. Native of Brazil. Leaves biglandular at the base. ex Spreng.
**Turneraceae. I. Turneræ. II. Piriqueta.**


Endearing Turneræ. Pl. 74 T. vegata (Wild. rel. 1. c.) leaves ovate, serrated, pilose, bilocular at the base; flowers bibracteate; bracteoles linear-setaceous. O. S. Native of Brazil.

Twiggy Turneræ. Pl. 3 to 1 ft. 48 T. corchorifolia (Wild. rel. 1. c.) leaves oblong, doubly serrated, tomentose beneath. O. S. Native of Brazil. The rest unknown.

Corchorus-leaved Turneræ. Pl. 3 to 1 ft. 49 T. Desvauxii (D. C. prod. 3. p. 348.) stem suffruticose, branched; branches assurgent, hairy; leaves ovate, obtuse, crenately toothed at the base, rather pilose beneath; flowers axillary, on long peduncles.—Native of Guiana. H. t. H. Desv. in Hamilt. prod. p. 33. but not of Wild.

Desvaux’s Turneræ. Pl. 1 ft. Cult. All the species of Turnera are elegant plants when in flower, and thrive well in any light rich soil. They seed freely in this country, and may be propagated by that means: cuttings also root freely, under a bell-glass, in heat. The seeds of annual species may be reared on a hot-bed in spring; and some of the plants may be planted out into the open border, in a warm sheltered situation, where they will probably flower and ripen their seeds, if the summer prove dry and warm.


Lin. syst. Pentândria, Tri-Hexâgyния. Calyx campanulate. Style 6, or 3 binate ones; stigmas multifid, flabellate. Capsule 3-valved from the apex to the base. Perhaps this genus is sufficiently distinct from the preceding. Habit of Turnera racemosa, but which plant is only furnished with 3 styles, not 6. Flowers pedicellate, in the axils of the upper leaves. Pedicels bracteose, articulated above the middle.


Villosa Piriqueta. Pl. 2 feet. 2 P. Tomentosa (H. B. et Kunth. nov. gen. amer. 6. p. 128.) leaves oblong, acute at both ends, irregularly crenate-serrate, pubescent above, clothed with soft hoary tomentum beneath. O. S. Native of South America, between Atures and Maypures, on the Orinoco. Turnera tomentosa, Willd. rel. in Ræm. et Schultes, syst. 6. p. 678. but not of H. B. et Kunth. Corolla yellow.

Tomentosa Piriqueta. Shrub 1 to 2 feet. Cult. The culture and propagation of these plants are the same as for the annual species of Turnera, see p. 70.

**Order CIX. Fouquieraceæ (plants agreeing with Fouquier in important characters).** D. C. prod. 3. p. 349.—Portulácææ affines, H. B. et Kunth, nov. gen. amer. 6. p. 81.

Calyx of 5 permanent sepals; sepals imbricate, ovate or roundish. Petals 5, combined into a tube, inserted in the bottom of the calyx or torus; limb of corolla 5-lobed, regular. Stamina 10-12, inserted with the corolla, exserted; anthers 2-celled. Ovarium free, sessile. Style filiform, trifid at the apex. Capsule trigonal, 3-celled; valves bearing dissepiments in their middle, which go as far as the centre of the fruit, and therefore the capsule is 3-celled. Seeds compressed, winged, fixed to the centre of the fruit or axis, few when the capsule is mature, but numerous when it is in a young state. Embryo straight, in the centre of a fleshy albumen, with flat cotyledons.

—Trees or shrubs, natives of Mexico. Leaves in fascicles when young, in the axils of spines or cushions, quite entire, oblong, and rather fleshy. Flowers scarlet, disposed in a terminal spike or panicle.

This order is separated from Portuláceæ by De Candolle, as he tells us, (Mem. portul. p. 4.) for the following reasons: first, because their petals cohere into a long tube, of the same nature as that of gamopetalous Crassuláceæ; second, because their capsule consists of 3 loculical cells, that is to say, which separate through the middle, forming 3 septicidal valves; and thirdly, because their embryo is straight, with flat cotyledons, and stationed in the centre of a fleshy albumen. They approach the monopetalous Crassuláceæ in the structure of their flowers; and Turnerbâceæ and Lobâceæ in the form of their fruit.

**Synopsis of the genera.**

1 Fouquieræ. Sepals ovate, mucronate, free, 2 exterior and 3 interior. Limb of corolla spreadingly reflexed. Stamina 10-12, hypogynous.


Lin. syst. Deccándria, Monogynia. Calyx coloured; sepals ovate, mucronate, 2 exterior and 3 interior, free. Corolla hypogynous; tube cylindrical, a little arching; limb spreadingly reflexed, nearly regular. Stamina 10-12, hypogynous, exserted; filaments ciliated below, and cohering together; anthers cordate. Ovula 18, on each placenta, in 2 rows. Fruit unknown. A somewhat spinose shrub. Spikes terminal, erect. Flowers scarlet. Leaves oblong, rather fleshy.

1 F. rosmàs (H. B. et Kunth, 1. c.). 2 S. Native of Mexico. Echevería spicata, Moc. et Sesse, fl. mex. icon. ined. Flowers flesh-coloured, an inch long. Leaves scattered, according to Kunth’s figure; but according to the figure in the fl. mex. they are a little narrower and in fascicles; therefore the 2 figures mentioned are very unlike each other.

Showy Fouquieræ. Shrub 6 to 10 feet.

Cult. A light rich soil will suit this very showy shrub; and young cuttings will root freely under a bell-glass, in heat.

**II. Brönniæ (in honour of Henry George Bronn, a young botanist, who has written on the form of leguminous plants).** H. B. et Kunth, nov. gen. amer. 6. p. 85. t. 598. D. C. prod. 3. p. 349.—Echevería species, Moc. et Sesse, fl. mex. icon. ined.

Lin. syst. Deccándria, Monogynia. Calyx permanent; sepals 5, roundish. Tube of corolla cylindrical, straight; limb
erect. Stamens 10; filaments filiform, exserted; anthers ovate. Style exceeding the stamens. Cells of fruit 1-seeded when mature. A spinose shrub, with fascicles of obovate-oblong, membranous leaves in the axils of the spines. Flowers panicked, scarlet. It differs from the last genus in the placentas being drawn in more to the centre of the fruit.


Spiny Bromnia. Tree 12 to 14 feet. Cult. See Fouquieria, p. 70. for culture and propagation.


Calyx free, or somewhat adnate to the very base of the ovarium (f. 15. a. f. 18. a.), usually of 2 sepals (f. 16. a. f. 18. a.), seldom of 3 or 5 (f. 20. a.), cohering at the base. Petals usually 5 (f. 15. b. f. 17. b.), but sometimes 3-4-6, very rarely wanting altogether, either distinct (f. 18. b.), or cohering into a short tube at the base (f. 15. b.), alternating with the sepals when the number is equal. Stamens inserted along with the petals, irregularly into the base of the calyx, and sometimes perhaps in the torus, variable in number in the species of the same genus, all fertile; filaments adnate, adnate to the base of the petals (f. 15. g.), and usually opposite them where the number is equal; anthers ovate, 2-celled, opening lengthwise, versatile (f. 18. c.). Ovary one, usually roundish (f. 15. c.), 1-celled (f. 15. f.). Style sometimes single, filiform, cleft into numerous stigmas at the apex (f. 15. c.); sometimes wanting or nearly so; when this is the case the stigmas are distinct (f. 17. c.), and rise in numbers from the top of the ovary. Capsule 1-celled, opening either transversely (f. 15. f.), or by the 3 valves from the base to the apex; but they are also occasionally 1-seeded and indehiscent. Seeds numerous when the fruit is deciduous, attached to the central placenta (f. 15. f.). Albumen farinaceous. Embryo curved round the circumference of the albumen, with a long radicle, and oblong cotyledons.—Fleshy shrubs or herbs. Leaves alternate, rarely opposite, entire, usually succulent, without stipulas, or sometimes with membranous ones on each side of the petioles. Flowers axillary or terminal, usually expanding in the sun, and of short duration. The 1-seeded genera of this order agree in character with the order Paronychieæ, and the apetalous genera with the order Ficoideæ. This order is related in nearly every point of view to Caryophyllaceæ, from which they scarcely differ except in their perigynous stamens, which are opposite the petals when equal to them in number, and two sepals; the latter character is not, however, very constant. The presence of scarious stipulas in several Portulaceæ, although perhaps an anomaly in the order, indicates their affinity with Paronychieæ, from which the monosperous genera of Portulaceæ are distinguished by the want of symmetry in their flowers, and by the stamens being opposite the petals, instead of the sepals. So close is the relationship between these orders, that several of the genus Ginginsia in Portulaceæ have been referred to Pharnacæum in Caryophyllæceæ, and several Portulaceæ have been described by authors as belonging to genera of Paronychieæ. De Candolle remarks, that his G. baccicallis resembles certain species of Androsacæ, and that Portulaceæ have been more than once compared to Primulaceæ (mem. p. 14.), and the same author remarks in his prod. 3. p. 351. that the genera with definite stamens, and hairy axilis approach Cactææ, while the apetalous genera tend towards apetalous Ficoideæ.

Insipidity, want of smell, and a dull green colour, are the usual qualities of this order, of which the only species of any known use are common Parslane and Claytonia perfoliata, which resemble each other in properties.

Synopsis of the genera.

1 Tri'antiæma. Sepals 5, concreto at the base, coloured. Petals wanting. Stamens 5, rarely 10 or more. Styles or stigmas 1-2, rarely 3. Capsule opening transversely.


3 Portulæca. Calyx bipartite (f. 15. a.), at length falling off. Petals 4-6, equal (f. 15. b.), free, or concreto at the base. Stamens 8-15 (f. 15. g.). Style one, 3-6 cleft at the apex (f. 15. c.); or style wanting, and the stigmas 3-8 elongated. Capsule opening transversely (f. 15. f.).


6 Tal'ium. Sepals 2 (f. 17. a.), deciduous. Petals 5 (f. 17. b.), free, or somewhat concreto at the base. Stamens 10-20. Style filiform, 3-cleft at the apex (f. 17. c.). Capsule 3-valved. Seed wingless.


8 Calanbri'nia. Calyx 2-parted (f. 18. a.). Petals 3-5 (f. 18. b.), free or rather concreto at the base. Stamens 4-15 (f. 18. c.). Style one, very short, tripartite at the apex (f. 18. c.); lobes clavate. Capsule oblong-elliptic, 3-valved. Seeds wingless.

9 Portulaca'ria. Calyx of 2 sepals, membranous. Petals 5, permanent. Stamens 5, or probably 10, 5 of which are abortive. Style wanting; stigmas 3, spreading, glandular. Fruit triquetrous, winged, indehiscent, 1-seeded.

PORTULACEÆ. I. TRIANTHEMA.


12 MÔN'TIA. Caly x of 2, rarely of 3 sepals. Petals 5, rather connate at the base, 3 of which are a little smaller than the rest. Stamens usually 3 in front of the smaller petals, making 9, very rarely 3-4. Capsule 3-valved, 3-seeded.


14 COLOBA'NTIUS. Calyx 4-5-parted. Petals wanting. Stamens 4-6. Stigmas 4-5. Capsule 4-7-valved, many-seeded.

15 GINGI'NIA. Calyx 5-parted, permanent, petaloid on the margins and in the inside. Petals wanting. Stamens 5. Ovary girded by a 5-lobed fleshy scale. Capsule 3-valved, many-seeded.

16 AYLM'ERIA. Calyx 2-parted, coloured. Petals 5. Stamens 10, membranous, connected into a hypogynous tube, the 5 inner ones abortive. Style one, crowned by a depressed capitulate stigma. Capsule bladdery, membranous, valveless. Seeds numerous in the bottom of the cell.


LIN. SYST. Pet. Decândria, Monogónia. Sepals 5, permanent, connected together at the base, rather coloured on the inside, and mucronated under the apex. Petals wanting. Stamens 5-10, rarely more, distinct, inserted in the bottom of the calyx; anthers kidney-shaped. Ovary ovate. Styles or stigmas filiform, 1-2, rarely 3. Capsule opening transversely below the middle; the upper valve, which separates like a lid, is hollow, and contains a seminiferous cell; therefore both cells are either simple, or of two divisions, one or few-seeded.—More or less fleshy herbs, which are sometimes suffruticose at the base. Leaves opposite, quite entire, petiolate. Petioles dilated into a stipula-formed membrane on both sides. Flowers axillary, sessile, usually by threes.


1 T. POLY'NDRA (Blum. bijdr. p. 1137.) stems herbaceous, procumbent; branches terete; leaves linear, obtuse; flowers pedunculate, solitary, polyanthrous, trigynous. 2. S. Native of Batavia, in bogs.

Polyandrous Trianthem. Pl. cr.
2 T. GOVÎNDRA (Ham. ex. Wall. cat. no. 6838.) stems suffruticose, trailing; leaves opposite, elliptic, emarginate at the apex; those opposite each other of unequal size; flowers axillary, aggregate, sessile. 3. S. Native of the East Indies, in Mangger. Plant glaucous. The number of stamens and styles unknown.

Govîndra Trianthem. Shrub prostrate.
3 T. DECA'NDRA (Lin. mant. p. 70.) stem herbaceous, gla- bures, diffuse, terete; leaves elliptic, acute. 3 F. Native of the East Indies. Zaläya decândra, Burm. l. c. t. 31. f. 3. Petioles furnished at the base on both sides with a broad membrane. Flowers on short pedicels, disposed in fascicles in the axis. Sepals mucronate at the apex. Stamens 10-12. Styles 2.


Triquêtrus Trianthem. Pl. diffuse.
5 T. HUMI'TSA (Thunb. fl. cap. p. 589.) stems frutescent, trailing, terete; leaves lanceolate, attenuated at both ends. 4 G. Native of the Cape of Good Hope, in Konde Bokeveld. Stamens 10, alternate ones shorter. Thunberg in his prodromus says the flowers are monogyous, but in his flora he says they are digynous.

Var. β; stamens 10, one-half shorter than the calyx, fixed by pairs to the base of the calycine segments.—Native of the Cape of Good Hope, at Hex River.

Trialing Trianthem. Shrub tr.
6 T. ÀNEPS (Thunb. fl. cap. p. 399.) stem frutescent, diffuse, 2-edged; leaves lanceolate, attenuated at both ends, acu- mated. 4. G. Native of the Cape of Good Hope. Stamens 10. Style 1, very short.

Two-edged-stemmed Trianthem. Shrub diffuse.


7 T. PÂN'TÁNDRA (Lin. mant. p. 70.) stem rough from velvety hairs; leaves elliptic, obtuse, flowers crowded in the axils of the leaves. 2. (ex Forsk.) 3. (ex Lin.) Native of Arabia. Rocâma digyna, Forsk. l. c. Rocâma Arábica, Gmel. syst. 1. p. 455. Pluk. phyt. t. 120. f. 3. ex Lin. T. pentândra, Guerri. fruct. 2. p. 213. t. 128. f. 5. Lam. ill. t. 375. f. 2. Stamens 5. Styles 2. Perhaps 2 species are here confused, the stems being, according to Linnaeus, erect and shrubby, and according to Forskal annual and prostrate.

Var. β, obsèrdâta (D. C. prod. 3. p. 352.) leaves obovate, bluntly emarginate at the apex.—Native of the East Indies. T. obsexordata, Roxb. hort. beng. p. 34.


Monogónus Trianthem. Fl. July, Aug. Clt. 1710. Pl. pr. 9 T. CRYS'TALLâNA (Vahl. symb. l. p. 52.) stem shrubby, diffuse, terete, glabrous, papulose; leaves linear or lanceolate, opposite, one of them smaller than the other; flowers crowded, axillary. 3. G. Native of Arabia and the East Indies. Pa- pulâria crystallâna, Forsk. des. p. 69. Stamens alternating with the petals. Style 1.

icy Trianthem. Shrub diffuse.

Cult. The seeds of the species of Triânthema require to be sown on a hot-bed in spring; and about the end of May they may be planted out in the open border in a warm sheltered situation, where they will probably flower and seed. Some are said
to be shrubby, these it will be requisite to treat as other stove plants; and cuttings of them will be easily rooted.

II. CYPSELEA (from κυψήλα, kypsele, a bee-hive; in reference to the form of the capsule). Turp. in ann. mus. 7. p. 219. t. 121. f. 5. D. C. prod. 3. p. 358.—Raddiâna, Rafin. speech. 1. p. 88.

Lin. syst. Di-Triândria, Digyniâ. Calyx campanulate, permanent, coloured, 5-parted; lobes obtuse, 2 of which are smaller than the other 3. Corolla wanting. Stamens 2-3, inserted in the calyx and alternating with its lobes (ex Turp.), or opposite the smaller lobes (ex Rafin.). Ovarium free, 1-celled. Style hardly any, 2-parted, or stigmas 2. Capsule 1-celled, many-seeded, opening transversely. Seeds fixed to an oval, central placenta, very small, and very numerous.—Herbs, natives of St. Domingo, with the habit of Montia or Crypta, rather succulent, annual, and glabrous. Leaves opposite, obovate; petioles widened into a stipule-formed, jagged membrane. Flowers axillary, small, greenish, solitary, on short pedicels.


Lin. syst. Oto-Dodecândria, Monogyâni. Calyx free from or adhering to the ovary at the very base, bipartite (f. 15. a.), at length cut round about the base, and falling off. Petals 4-6 (f. 15. b.), equal, distinct, or joined together at the very base, inserted in the calyx. Stamens 8 (f. 15. g.)—filaments free, sometimes adnate to the bottom of the corolla (f. 15. g.). Ovarium roundish. Style 1 (f. 15. d.), 3-6-cleft at the apex (f. 15. c.), or the style is wanting; but in this case, the stigmas are 3-8 and elongated. Capsule sub-globose (f. 15. f.), 1-celled, opening transversely in the middle. Seeds numerous, fixed to a central placenta (f. 15. f.).—Humble fleshy herbs. Leaves scattered, quite entire, thick, usually bearing hairs in the axils, crowded, or somewhat verticillated about the flowers. Flowers expanding from 9 till 12 o’clock in the morning, if the sun shine, otherwise they remain closed.—This is a heterogeneous genus, and probably divisible, but easily distinguished by the capsule opening transversely.

* Flowers yellow. Axes of leaves naked. *

1 P. oleracea (Lin. spec. p. 638.) leaves wedge-shaped, fleshy; axils and joints naked; flowers sessile. O. H. Native nearly throughout the whole world. D. C. pl. grass. t. 123. Schkuhr. handb. t. 130. Petals concrete at the base. Stamens 10-12, adnate to the corolla. Style wanting. Stigmas 5, elongated. Perhaps specifically distinct from the following varieties.

—Blackw. icon. t. 287.


Var. b, sativa (D. C. prod. 3. p. 358.) stems diffuse; branches erectish. O. H. Native of South America, and now cultivated in some parts of Europe. P. domestica, Lob. icon. p. 388. P. sativa, Haw. misc. p. 136. syn. 129. P. latifolia, Horn. hort. fl. hafn. 2. p. 491. There is a variety of this with green leaves (P. viridis, Hortul.), and yellowish leaves (P. aërea, Hortul.). The young shoots and succulent leaves are esteemed cooling, and are used in spring and summer as an ingredient in salads, and as pot-herbs and pickles. The plant was formerly in much more request than at present. Both the green and yellow-leaved sorts are raised from seed, and for a bed 4 feet by 4 feet, sow either broadcast or in drills, 9 inches apart, one-eighth of an ounce will suffice. “Each variety is somewhat tender; the green, which is usually preferred, is perhaps rather the hardiest. An early crop may be sown in February or March, on a moderate hot-bed; the plants will require the aid of a gentle heat till the middle of May, when the seed may be sown in a warm border. If a continued succession is required, sow every month during summer, till August, or while the plant can be raised; generally in small drills, from 3-6 inches asunder. The plants will soon come up; they should remain where sown. In very dry hot weather, water thrice a-week. The shoots may be gathered for use when they are from 2-5 inches in height, and are well furnished with leaves. Cut them off low, and the bottom part will soon sprout out again. When seed is required, leave some of the first open border plants to run; they will give ripe seed in autumn.”


2 P. farfæolia (Haw. syn. p. 129.) leaves cuneiform, minute, fleshy; stem much branched, prostrate; flowers sessile, or on long peduncles. O. H. Native of Jamaica. Probably only a variety of P. sativa, but the plant is much smaller, and the leaves are 10-times smaller.


** Flowers yellow. Axes of leaves or joints pilose.**

3 P. foliâsâ (Ker. bot. reg. 793.) stem diffuse; branches erect; leaves subulate; flowers solitary at the tops or in the forks of the branches, surrounded by white hairs and a many-leaved involucrum; petals retuse or a little emarginate. O. F. Native of Guinea, near Accra. P. Guineëmis, Spreng. There is a plant figured in fl. mex. of Moc. et Sesso, called by them P. stelliformis, a native of Mexico, which is very like this species. Flowers small, yellow.


5 P. lanuginosâ (H. B. et Kunth, nov. gen. amer. 6. p. 74.) stems procumbent, branched; leaves terete, obtuse, upper ones in whorles; flowers in clusters of 2-5, surrounded by soft hairs; petals obovate-spatulate, obtuse. O. F. Native of South America, on the banks of the Amazon. Style 1; 3-5-cleft at the apex. Petals 4-5, yellow.

Woolly Purslane. Pl. pr.

6 P. marginaâta (H. B. et Kunth, l. c. p. 72.) stems rather dichotomous; leaves cuneately spatulate, rounded at the apex, subverticillate, obsoletely veined, margined with red; axils hairy; flowers 5 in each head, involucrated. O. F. Native near Caracas, in Venezuela. Said to be allied to P. oleracea. Flowers yellow.

Margined-leaved Purslane. Pl. pr.

7 P. laruoetteâna (St. Hil. fl. bras. 2. p. 190.) stem suffruticose at the base, pilose in the axils of the leaves; leaves lanceolate, flatish, narrowed at the base, acute, longer than the hairs; flowers crowded at the tops of the branches; petals ob-

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cordate, mucronulate, shorter than the calyx. "S. Native of Brazil, in that part of the province of Minas Geraes called Minas Novas, near Nossa Senza da Penha. Flowers yellow, surrounded by hairs and crowded leaves.

Larrouette's Purslane. Shrub ¾ to ½ foot.


9 P. rubricaulis (H. B. et Kunth, nov. gen. amer. 6. p. 73.) stems ascending, corymbose branches above; leaves lanceolate, acute, nerveless; upper leaves in whorls; axils pilose; flowers 4-8, crowded into a head. "F. Native of South America, in sandy places and on dry mountains on the sea-shore near Laguna. Petals 5, obovate-oblong, emarginate, orange-coloured. Stamens 27-30. Style 6-8-cleft. Said to be allied to P. halimoides.

Red-stemmed Purslane. Pl. ascending ½ foot.

10 P. hirsutissima (St. Hil. fl. bras. 2. p. 121. t. 114.) stem suffruticose at the base, pilose at the ends of the leaves; leaves approximate, oblange-lanceolate, flattish, tapering to both ends, acute, shorter than the hairs; flowers crowded at the tops of the branches; petals obcordate, mucronate, a little longer than the calyx. "S. Native of Brazil, near Minas Geraes, near Bom-Tim and Nossa Sara da Penha, and also near Tejucu. Flowers yellow, surrounded by a whorl of the upper leaves and axillary hairs.

Very hairy Purslane. Shrub ¾ to ½ foot.

11 P. microsacta (Link, enum. hort. berol. 2. p. 2.) stem erect; leaves oblong-oblong, with a short taper point; floral leaves 8, constituting an involucrum; axils pilose; flowers terminal, sessile. "F. Native country unknown.


** Flowers purple; axils pilose, or perhaps sometimes naked.

13 P. pilosa (Lin. spec. 639.) stem diffuse; joints beset with long hairs; leaves alternate, linear-lanceolate, convex on the back, bluish, about equal in length to the axillary hairs; floral leaves in whorles; flowers crowded at the tops of the branches, sessile, surrounded by long hairs; petals ovate, acutish, a little longer than the calyx. "F. Native of South America, about Curassoa, in Brazil, Martinico, Jamaica, &c. in sandy places near the sea. Gaertn. fruct. 2. p. 212. t. 125. f. 4. Haw. misc. p. 137. Ker. bot. reg. 792.—Wolk. norib. 341. with a figure. Herm. par. 215. Comm. hort. amst. 1. t. 5. Flowers 5-parted, pale purple, expanding from 10-120 o'clock in the morning, if the sun is out. Stamens about 20. Root tuberous.


14 P. lana'ata (Rich. act. soc. hist. nat. par. 1792. p. 109.) stems diffuse; leaves linear-sublanceolate, flat; hairs of the axillae and joints longer than the leaves; flowers terminal, surrounded by hairs and a whorle of leaves. "F. Native of Cayenne. Petals red, obcordate. Stamens 15 and more. Perhaps only a variety of P. pilosa.


15 P. pilosissima (Hook, bot. misc. 2. p. 221.) plant annual? small; stems branched, decumbent; leaves terete, obtuse; fasicles of hairs twice or thrice longer than the leaves. "H. Native of Peru, at Yazo, in the valley of Canta. The flowers are concealed by long white solitary tufts of hairs. It comes nearest to the P. lana'ata, Rich.

Very pilose Purslane. Pl. ½ to ¾ foot.


Shaded Purslane. Pl. ½ to ¾ foot.


18 P. hilareana'na; stem trailing, herbaceous, pilose in the axils of the leaves; leaves linear-lanceolate, convex on the back, flat in front, acute, longer than the axillary pili; flowers crowded on the tops of the branches; petals obcordate, much longer than the calyx. "F. Native of Brazil, in the province of St. Paul. P. grandiflora, St. Hil. fl. bras. 2. p. 195. but not of Hook. Flowers purple, surrounded by crowded leaves and hairs.

St. Hilaire's Purslane. Pl. ½ to ¾ foot trailing.

19 P. acutiflora (Hook, in bot. mag. 2885.) stems diffuse, branched; leaves scattered, cylindrical, acute, with pilose axils; flowers 3-4 together, terminal, crowded, surrounded by a whorl of leaves and crowded petals; petals longer than the calyx; style 5-9-cleft at the apex. "F. Native of Chili. There are varieties of this plant with either purple or yellow large flowers. Root tuberous.

Var. a, major; (Hook, in bot. misc. 3. p. 241.) leaves an inch or an inch and a half long.—Bot. mag. t. 2885.

Var. β, microphylla (Hook. et Arn. l. c.) leaves hardly half an inch long. P. Mendoceinensis, Gill. mss. Both varieties are found between Rio Saladillo and Mendoza.

the calyx, obovate-roundish. 2. G. Native of Chili, in the plains near Mendoza. Plant stout, in proportion to its height. Flowers large, bright reddish purple.

**Gillies's Purslane.** Pl. 3 to 4 foot.

21 P. Tereetifolia (H. B. et Kunth, l. c.) stems creeping, corimbosely branched; axes rather pilose; leaves scattered, terete, acuminate; flowers 3-5 in a heap, sessile, involucrated, and surrounded by hairs. O. F. Native of South America, on the sandy banks of the river Orinoco and Rio Negro, near Caracana, Maypures, San Carlos, &c. Very like *P. rubricaxis*, but differs in the flowers being purple. Stamen 18-24.

**Tereete-leaved Purslane.** Pl. creeping.

22 P. Axilliflora (Pers. encir. 2. p. 6.) stems procumbent; leaves oblong, fleshy, in young plants they are opposite; flowers solitary, axillary. O. F. Native country unknown. Meridiania axilliflora, Schrank. bot. zeit. 1804. p. 354. Corolla and stamens rose-coloured.

**Axil-flowered Purslane.** Pl. pr.

† Species not sufficiently known.

23 P. Imbricata (Forsk. descr. 92.) leaves crowded, ovate, acute, flat beneath, and convex above, opposite; joints hairy at the base; flowers sessile, terminal. O. H. Native of Arabia. Flowers yellow, large. Scurf as if they were tetragonal, from the leaves being imbricated on them in 4 rows.

**Imbricate-leaved Purslane.** Pl. pr.

24 P. Castera (Thunb. fil. cap. p. 369.) stem weak, branched, glabrous; leaves linear-oblong, alternate; flowers axillary, pedicellate; pedicels bipecticate. O. F. Native of the Cape of Good Hope. Corella yellow, 6-petalled. Style trifid. Capsule probably 2-cellled and 2-valved.

**Caffraria Purslane.** Pl. pr.

25 P. Arabica (Forsk. descr. 92. no. 81.) calyx of 4 permanent sepals.—Native of Arabia. The rest unknown.

**Arabian Purslane.** Pl. ?

26 P. Flava (Forst. pl. esc. p. 72.) O. F. Native on the shores of the Society Islands, where it is boiled and eaten by the natives, and called by them *Aturi*. This plant has not been described, and is probably nothing else but *P. oleracea*.

**Yellow-flowered Purslane.** Pl. pr.

27 P. Wightiana (Wall. cat. no. 6845.) plant diffuse; leaves small, intermixed with numerous soft leafy stipulas; flowers sessile, terminal, almost hidden by the white bracteas. τ. A. S. Native of the East Indies, at Madras, in moist sand. A singular species.

**Wight's Purslane.** Pl. 1/2 foot.

**Cult.** Being mostly annual plants, growing naturally in sandy soil near the sea, the seeds should be sown in dry warm situations in spring; or it is perhaps better to sow them on a hotbed in spring, and plant them out towards the end of May into the open border; or they may be grown in pots and set in the greenhouse or in a frame.

### IV. GRAHAMI'A (in honour of Mrs. Maria Graham, a great traveller in South America, particularly in Brazil, Peru, and Chili.) Gill. mss. ex Hook. et Arn. in bot. misc. 3. p. 241.

**Lin. syst. Icosandra, Monogynia.** Calyx of 2 permanent, oblong-lanceolate, mucronate, concave, stiff sepals, propped by 8 or 9 imbricate bracteas, similar to the sepals. Petals 5, obovate, mucronulate. Stamens numerous, about 40; filaments filiform, monadophalous at the base; anthers erect, 2-celled. Ovarium oblong, 1-celled. Style filiform, thickened upwards; stigma 4, but usually 5, linear. Capsule 1-celled, 5-valved. Seeds numerous, compressed, broadly winged, each fixed by a podosperm to the central axis.—A smooth branched shrub, with alternate, terete, oblong, obtuse, fleshy leaves, bearing hairs in the axis. Flowers solitary, terminating short or elongated branches, with white sepals and petals; and having the filaments purple at the base, and the anthers and stigmas yellow.


**Cult.** See Portulacària for culture and propagation.


**Lin. syst. Dodecandria, Monogynia.** Calyx of 2 sepals (f. 16. a.); sepals opposite, oblong, rather coarse at the base. Petals 5 (f. 16. b.), very fuscous. Stamens 15-20 (f. 16. d.); filaments distinct, inserted in the bottom of the calyx along with the petals, and adhering a little to them. Style filiform, trifid at the apex (f. 16. d). Capsule conical, 1-celled, 3-valved (f. 16. c.), with the valves eleft longitudinally in the middle, and therefore the capsule appears as if it was 6-valved (f. 16. c.). Seeds numerous, winged, fixed to a central placenta.—Very dwarf herbs or subshrubs, natives of the Cape of Good Hope. Leaves ovate, fleshy. Axes bearing filamentous subscarios stipulate hairs. Bracteas membranous, usually lobed into setaceous segments. Pedicels 1-flowered, elongated, disposed in racemes. Flowers of a rose-purple colour or white, expanding only in the heat of the sun.


2 A. intermedia; leaves very numerous and dense, expanded, flat, convex on the outside, retusely deltoid at the apex; axillary threads twisted, brown. τ. D. G. Native of the Cape of Good Hope. Rulingia intermedia, Haw. in phil. mag. march 1828. Very like *A. polyphylla*, but almost one half smaller, but taller; also like *A. filamentosa*, but broader; the leaves more numerous, more crowded, paler; and the axillary threads are yellow, not white.


4 A. Rubens (D. C. prod. 3. p. 356.) leaves ovate, acuminated, diffusor, shining, dark green, somewhat reflexed at the L 2
PORTULACEÆ. V. ANACAMPSEROS. VI. TALINUM.

apex; axillary hairs shorter than the leaves; racemes simple. 


Lin. syst. Deca-Dodecandra, Monógynía. Calyx of 2 ovate sepals, deciduous. Petals 5 (f. 17, b.), hyppogynous, or inserted in the bottom of the calyx, distinct or joined a little way at the base. Stamens 10-20, inserted along with the petals, and generally adhering a little to them, and joined together at the base. Style filiform, cleft at the apex into 3 spreading or close stigmas. Stigmas bearing papillose inside. Capsules 3-valved, 1-seeded, many-seeded. Seeds wingless, kidney-shaped, scarious, fixed to the central placentae. Fleshly herbaceous, or sufrutescent plants. Leaves alternate, quite entire, exatipulcate. Flowers very fugacious, expanding only in the heat of the sun, cymose or racemose. Cymes or racemes usually forming terminal panicles.


2 T. Napiíforme (D. C. prod. 3. p. 357.) root tuberous; radical leaves terete, fleshy; cymes terminal, dichotomous, corystose; stamens 5, alternating with the petals. 2. F. Native of Mexico. Clatónia tubérosa, Moc. et Sesse, fl. mex. icon. ned. Root tuberous, turnip-formed. Stems numerous from the neck of the tuber, almost leafless at the base, but cymose and dichotomous at the apex. Flowers white. This species from habit and inflorescence agrees with the preceding, but differs materially in having only 5 stamens, and a tuberous root. It is not a Clatónia, in consequence of the stamens alternating with the petals, not opposite them; nor a Calandrinia from the calyx not being deciduous.

Turnip-formed-rooted Talinum. Pl. ½ to 1 foot.


Sect. III. Talinellum (a diminutive of Talinum). D. C.

prod. 3. p. 358.—Talinum, Ruiz et Pav. syst. fl. per. p. 65.

Stamens 5, thick, flatish.—Generally annual herbs; and probably should have been joined with the genus Calandrinia.

10 T. revolutionis (H. B. et Kunth, nov. gener. am. p. 76.) stem erect, simple; leaves glabrous, lanceolate, obtuse, narrow

at the base, with revolute margins; peduncles terminal, somewhat dichotomous, few-flowered; petals awned, glandular towards the base. ○ F. Native of South America, in shady places near Cumana. Flowers yellow. Stamens about 48. Fruit unknown.

Revolute-leaved Talinum. Pl. ½ foot.

11 T. mucronatum (H. B. et Kunth, l. c.) stems erectish; leaves glabrous, oblong or oblong-lanceolate, obtuse, somewhat mucronate, cuneate, and narrowed at the base; peduncles terminal, 2-3-cleft, many-flowered; flowers racemose; petals mucronate. ○ D. F. Native of New Andalusia, near Bordes, in shady humid places. Petals yellow, length of calyx. Stamens about 50.

Mucronate-leaved Talinum. Pl. ½ to ¾ foot.

12 T. Polyaedrum (Ruiz et Pav. syst. fl. per. p. 115.) leaves roundish-obovate, acuminate; flowers racemose, polyandrous; petals obcordate, quite entire. ○ F. Native of Peru, on the hills called Lamas towards Pongo. Herb a foot high, noxious to cattle. The rest unknown.

Polyandrum. Pl. 1 foot.

13 T. Crenatum (Ruiz et Pav. l. c.) leaves roundish-obovate, acuminate; flowers racemose; petals crenulated; sta-
mens about 20.—Native of South America, on hills about Pongo in the province of Atiquipa. Herb a foot high, and is called by the natives 'Langua de Vaca,' as well as the preceding plant. The rest unknown.

Crenated-petalled Talinum. Pl. 1 foot.

14 T. Menzie'sii (Hook. fl. amer. bot. l. 1. p. 223. t. 70.) caulescent; leaves linear-spatulate; lower ones on long petioles; margins naked; superior ones and sepals acutely keeled, glan-
dularly ciliated on the back; flowers pedunculate, axillary. ○ H. Native of the north-west coast of America, south of Co-
lumbia. The habit is that of a species of Talinum, without hav-
ing seen the flowers; it may, however, when better examined turn out to be a species of Calandrinia. Root annual, rather fusiform.

Menzie's Talinum. Pl. ½ foot.

Cult. Pretty succulent plants, most of which require the heat of a stove; a mixture of loam, peat, and sand, or any little soil will suit them; and cuttings of them are very readily rooted. The seeds of the annual species may be reared on a hot-bed, and afterwards planted out in the open border about the end of May.


Lin. syst. Dodecantha, Monogynia. Calyx of 5 sepals; sepals rather membranous. Petals 9-12, inner ones gradually the smallest. Stamens 12-16, hypogynous; anthers linear. Ovarium globose. Ovala many, fixed to a free central receptacle. Style deeply 6-parted: segments filiform; stigmas ob-

1 Lewisia (Pursh. l. c. Hook. l. c.) ½ H. Native of North America.

Var. a; root blood-coloured; flowers white. Native on the banks of Clarke's river.
**V. PORTULACEAE.**

Var. β; root white; flowers rose-coloured. Native of the subalpine regions of the Rocky Mountains, on the west side, and abundant at the junction of the Spokan river with the Columbia, on dry stony rocks; also of the Flathead and Salmon rivers, in similar situations. The roots of this variety are gathered in great quantities by the Indians on the west side of the Rocky Mountains, and highly valued on account of their nutritive qualities. They are boiled and eaten as sappo or arrow-root, and are admirably calculated for carrying on long journeys; two or three ounces a day being quite sufficient for a man, even while undergoing great fatigue. Perfect flowers of the plant have not yet been seen by any botanist, and therefore the genus is not well known; and probably may hereafter verge into Tairnum, *Revived Lewisia*. Clt. 1826. Pl. ½ foot.

Cult. A mixture of loam and brick-rubbish will be a good soil for this plant; and it may be propagated by dividing the plant at the root, by cuttings, or by seeds.

**VIII. CALANDRINIA** (in honour of L. Calandrinia, an Italian botanist, who lived in the beginning of the 18th century).


**Lin. syst. Dodecandria, Monogynia.** Calyx permanent, bi-partite (f. 18. a.); sepals roundish-ovate. Petals 3–5 (f. 18. b.), hypogynous, or inserted in the bottom of the calyx, distinct or connected together at the very base, equal. Stamens 4–15, inserted in the torus or base of the petals, distinct, generally alternating with the petals. Style 1, very short, tripartite at the apex; lobes collected into a clavately capitata stigma (f. 18. c.). Capsule oblong-elliptic, 1-celled, 3-valved, many-seeded. Seeds adhering by capillary funicles to the central placenta.—Succulent or fleshy glabrous American herbs, having the habit of *Sâmolarus*. Leaves quite entire, radical or alternate. Pedicels 1-flowered, axillary or opposite the leaves. This genus hardly differs from *Talinum*, as far as its characters are yet known.

*Stamens 10–15.*

1. *C. paniculata* (D. C. prod. 3. p. 358.) plant caulescent, branched; leaves ovate-oblong, acuminate; flowers panicled; pedicels 5 times longer than the bracteas. O. F. Native of Peru, in the province of Chancay, commonly called Lomas, on sandy hills; and in the province of Atiguao, at Pango, where the plant grows a foot high, and is called there *Orejas de Perro* and *Castanuelas*. Talinum paniculatum, Ruiz et Pav. syst. fl. pet. p. 115. Portulaca carnosa, Domb. herb. Leaves glabrous, fleshy. Stem erect, paniculately branched at the apex. Sepals 2, ovate, permanent. Stamens 10–15. Capsule 3-valved, length of the calyx. Flowers purple.


**Tongue-leaved Calandrina.** Pl. 1 foot.

3. *C. cistiflora* (Gill. msx. ex Arnott, in Cheek, edinb. jour. 3. p. 355.) glabrous; stem ascending, squiffuice; branches leafy at the base, and nearly naked towards the apex; leaves linear-lanceolate, acutish; raceme terminal, few-flowered; pedicels elongated; bracteas minute, foliaceous; sepals ovate, acute; stamens numerous. O. D. G. Native on the Andes of Mendoza and Chili, in many places at an elevation above the sea, from 9,000 to 10,000 feet. The flowers are pretty large, and purple. It ranks near *C. lingulata*.

**VIII. Calandrinia.**

*Rock-rose-flowered Calandrina.* Pl. ascending.

4. *C. affinis* (Gill. msx. ex Arnott, in Cheek, edinb. jour. 3. p. 355.) plant glabrous and stemless; leaves elongated, linear, obtuse, attenuated into the petiole; indurated bases of petioles imbricated and dilated; peduncles radical, 1-flowered, naked, one-half shorter than the leaves. O. D. G. Native on the Andes of Chili, at El Serro de San Pedro Nolasco. This species is closely allied to *C. aculitis*, but differs in the flowers having numerous stamens.

**Allied Calandrina.** Pl. ⅔ foot.

5. *C. capitata* (Hook. et Arn. in bot. misc. 3. p. 244.) root annual; stems erectish, smooth, and nearly simple; leaves linear, smoothish, ciliated; racemes capitate, many flowered, terminal, and axillary, pedunculate; flowers nearly sessile; sepals roundish, tridentate at the apex, beset with long pili on the back. O. F. Native on the Cordillera of Chili, and near Collina.

Capitata-flowered Calandrina. Pl. ⅔ foot.

6. *C. ramosissima* (Hook. et Arn. in bot. misc. 3. p. 244.) root annual; stems many from the same neck, leafy, branched; axillary branches horizontal; leaves linear, pilose, ciliated with long hairs at the base; racemes short, few-flowered; sepals roundish, truncate, bluntly tridentate at the apex, and beset with long pili on the back. O. F. Native of Chili, about Valparaiso.

**Much-branched Calandrina.** Pl. ⅔ to 1 foot.

7. *C. Cumingii* (Hook. et Arn. in bot. misc. 3. p. 244.) root slender, annual; stems many from the same root, procumbent, leafy, dichotomously branched; leaves linear, attenuated at the base, beset with adpressed hairs; racemes few-flowered, terminal; sepals roundish, tridentate at the apex, pilose on the back. O. F. Native of Chili, about Valparaiso; and on the Cordillera of Chili. The upper part of the stems, racemes, and calyxes are beset with glandular viscid hairs. The whole plant has a purplish hue. In character this species approaches near to *C. ramosissima*, but in habit they are very distinct.

**Cuming’s Calandrina.** Pl. procumbent.


**Umbellate-flowered Calandrina.** Pl. ⅔ foot.

9. *C. dipta* (Gill. msx. ex Arnott, in Cheek, edinb. jour. 3. p. 356.) plant caulescent, sparingly branched, perennial, glabrous; leaves obvolutely spatulate, attenuated into the petiole at the base, glaucous; corymb cymose, terminal; pedicels much exceeding the bracteas, which are roundish, membranous, and edged with purple; sepals roundish, reticulated by purple; stamens numerous. O. D. G. Native on the Andes of Mendoza, in many places at the elevation of 10,000 feet above the sea. This is one of the most beautiful of the species; and according to habit comes near *C. glauca*, but differs in the stamens being numerous.

**Painted Calandrina.** Pl. 1 foot.

10. *C. arenaria* (Cham. msx. ex Hook. et Arn. in bot. misc. 3. p. 246.) plant glaucous; stems numerous, prostrate, glabrous, leafy; leaves linear; common peduncle terminal, naked, simple or branched; racemes corymbose; pedicels a little longer than the bracteas; bracteas oval, membranous, painted by a dark purple branched middle nerve; seeds glabrous. O. F. Native of Chili, about Valparaiso. Closely allied to *C. pieta*, Gill. but very distinct from it.
Sand Calandrinia. Pl. prostrate.

11 C. linearifolia (D.C. prodr. 3. p. 359.) stem ascending, a little branched at the base; branches erect, radical and cauline leaves linear, glabrous, bluish; corymb terminal, a little branched; calyx glandular. 2. D. G. Native of South America. Perhaps the same as Talinum lineare, H.B. et Kunt, nov. gen. amer. 6. p. 77, which is found in the arid valleys of Mexico.

Linear-leaved Calandrinia. Pl. ascending.


13 C. sericea (Hook. et Arn. in bot. misc. 3. p. 244.) root perennial, woolly, with a multiple neck; stems erect, very leafy at the base; leaves linear, acute or subulate, clothed with silky hairs; racemes few-flowered, corymbose; upper pedicles hardly equal in length to the bracteas; sepals ovate, tridentate at the apex, clothed with long silky villi; stems numerous. 3. D. G. Native of Chili.

Var. a, longipes (Hook. et Arn. l.c.) lower pedicle elongated, slender, much longer than the rest of the bracteas. On Sierra Bella Vista, and Ancacuegua; and on the Cordillera of Chili.

Var. b, de’ guipes (Hook. et Arn. l.c.) pedicels all nearly equal. Near Collina and Questa. In both varieties the leaves vary much in length, from 1 to 2 or even 3 inches.

Silky Calandrinia. Pl. 1 foot.

14 C. tenellia (Hook. et Arn. in Beech. bot. p. 24.) stems ascending, branched at the base; leaves narrow-linear, glabrous; racemes terminal, branched; sepals glabrous, triangular, cor- date, acuminate. 3. G. Native of Chili, at Valparaiso. Very closely allied to C. pilosuscula, but differs from it in being quite glabrous and in its smaller size. This is said to be only a variety of C. pilosuscula. Hook. et Arn. in bot. misc. 3. p. 245.

Weak Calandrinia. Pl. ascending.


* * Stems from 1 to 9.

16 C. caulescens (H.B. et Kunth, nov. gen. amer. 6. p. 78. t. 526.) plant caulescent and branched; leaves alternate, spatulate-lanceolate, acute; pedicels axillary and opposite the leaves, 1-flowered, bracteate. 3. F. Native of Quito, near Chillo, and near the city of Mexico. Geünsia rœsea, Moc. et Sesse, fl. mex. icon. ined. Talinum calandscens, Spreng. syst. 1. p. 453. Cósma montana, Domb. herb. Stem diffuse or procumbent. Flowers rose-coloured.

Caulescent Calandrinia. Pl. pr.

17 C. procumbens (Moris. hort. tum. sem. 1831.) glabrous, caulescent, filiform, procumbent, branched; leaves succulent, linear, obtuse, alternate; pedicels axillary, and opposite the leaves; sepals triangular; flowers triandrous or hexandrous; capsule 3-celled. 3. H. Native of South America. This species differs from C. comprésa of Schrad. in being glabrous, in the stems being procumbent, in the stems being 3-6, and in the sepals not being cordinate at the base, &c.

Procumbent Calandrinia. Pl. pr.

18 C. comprésa (Schrad. in lett. ex D.C. l.c.) plant caulescent and succulent; leaves linear, ciliated; flowers racemose; calyx compressed; sepals triangular, cordinate, unequal, acuminate. 3. F. Native of Chili. Plant a span high, erect, simple, or somewhat divided, with short hairs on the peduncles and calyces. Leaves obtuse, marked with a longitudinal line above, somewhat keeled beneath: radical ones 1½ or 2 inches long. Pedicels an inch and a half long. Flowers small, purple. Stems 3-4. Capsule 3-4-valved. Schrad. mss.

Var. β, adscéndens (D.C. l.c.) plant smaller; stem ascending. Talinum adscéndens, Hort. berol.

Compressed-calyx Calandrinia. Pl. 1/4 foot.

19 C. denticulata (Gill. mss. ex Hook. et Arn. in bot. misc. 3. p. 243.) plant glabrous; stem suffruticose, leafy; leaves lanceolate, acute, attenuated at the base; raceme terminal, 1-3 or few-flowered; pedicels elongated; sepals roundish-ovate, with denticulate-serrate margins. 3. D. G. Native of Chili, along with C. andicola. The lower part of the stem is much branched.

Denticulated-calyx Calandrinia. Shrub 1 foot.

20 C. andicola (Gill. mss. ex Hook. et Arn. in bot. misc. 3. p. 242.) plant wholly glabrous; stem suffruticose, leafy towards the apex; leaves cuneate-oblong, acute, attenuated at the base; raceme terminal, 1-3 or few-flowered; pedicels elongated; sepals roundish, hardly mucronulate at the apex, with quite entire margins; petals a little longer than the calyx; flowers with few stamens. 3. D. G. Native of Chili, on the eastern side of the Cumbre, and at El Alto de la Laguna. Closely allied to C. denticulata, but apparently quite distinct. From C. denticulata it can only be distinguished by the entire margins of the sepals.

Andes Calandrinia. Pl. 1/4 to 1 foot.

21 C. acuâlis (H.B. et Kunth, l.c.) plant stemless; leaves elongated, linear, obtuse; peduncles radical, 1-flowered, bracteate in the middle, one half shorter than the leaves. 3. D. G. Native of Quito, on Mount Rucu-Pichincha, in humid places. Cósma prostrata, Domb. herb.

Stemless Calandrinia. Pl. 1/4 foot.

22 C. trifida (Hook. et Arn. in bot. misc. 3. p. 243.) root annual, slender; stems erect, simple, rather leafy, pilose; leaves linear, acute, pilose; radical ones elongated; upper cauline ones edged with long hairs, embracing a few flowers in their axils; raceme corymbose, dense, terminal; bracteas ciliate with long hairs; lower ones exceeding the racemes; sepals ovate, trifid at the apex, with a few hairs on the back, but more numerous on the margins; stems 5. 3. H. Native of Chili, about Valparaiso. This and C. Gilliesii and C. sericea seem closely allied to C. umbellata.

Trifid-bracteae Calandrinia. Pl. 1/2 foot.

23 C. Gilliesii (Hook. et Arn. in bot. misc. 3. p. 243.) root perennial, woolly, with a multiple neck; stems erect, simple, very leafy at the base, but sparingly so at the apex; leaves oblong-linear, beset with adpressed hairs; raceme corymbose; lower bracteas hardly equal in length to the pedicels; sepals ovate, somewhat tridentate at the apex, and beset with long pili on the back; stems 5. 3. D. G. Native of the Andes, of Mendoza, and Chili; Cordillerâ of Chili; and Los Ójios de Aqua. C. umbellata, Gill. mss.

Gillies's Calandrinia. Pl. 1/2 foot.

24 C. diffusa (Gill. mss. ex Arnott, in Cheek, edinb. journ.
3. p. 355.) Plant caulescent, glabrous, diffuse; branches leafy at the base and nakedish at the top, 1-2-flowered; leaves spatulate-lanceolate, acute, quite entire; flowers terminal; sepals orbicular, quite entire.  

Diffuse Calandrina. Pl. 1 foot.

25 C. glauca (Schrad. in litt. ex D. C. I. c.) Plant caulescent, glabrous; leaves spatulate-lanceolate, acute, fleshy, glaucous; racemes few-flowered; fruit-bearing peduncules, _1/2_ inch long, reflexed; bracteas ovate, acute, membranous, and spotted with purple.  

Glaucous Calandrina. Pl. 1 foot.

26 C. conferta (Gill. mss. ex Arnott, in Cheek, edinb. journ. 3. p. 356.) Plant caulescent, perennial, glabrous; branches numerous from the neck of the root, simple, leafy at the base, nakedish towards the apex; leaves narrowly spatulate, glaucous; racemes crowded, terminal; pedicels hardly longer than the bracteas; sepals broadly ovate; flowers with few stamens, 3-4.  

27 C. cestrósa (Gill. mss. ex Arnott, in Cheek, edinb. journ. 3. p. 356.) Plant tufted, stemless; leaves linear-spatulate; peduncles radical, 1-flowered, naked, 3-times longer than the leaves; sepals broadly ovate; flowers with few stamens; stigmas 3-5; capsule 4-5-valved.  

Crowded racemed Calandrina. Pl. 1 foot.

28 C. braniflora (Lindl. bot. reg. t. 1194.) Plant glaucous; stem suffruticose; leaves fleshy, rhomboid, acute, petiole-raceme simple, loose; calyx spotted; stamens numerous; petals obcordate.  


29 C. ciliata (D. C. I. c.) leaves linear-oblong, ciliated; flowers solitary, always pentandrous.  

30 C. nitida (D. C. I. c.) leaves oblong-spatulate, acute, glabrous, attenuated at the base; peduncles axillary, solitary, shorter than the leaves; sepals roundish, obtuse, pilose on the backs; stamens 1-9.  

White-flowered Calandrina. Pl. 1 foot.

31 X. ullocus. Herb half a foot high. Talinum nittidum, Ruiz et Pav. l. c.

Chili Calandrina. Pl. 1/4 foot.  

32 C. monandra (D. C. I. c.) leaves spatulate-lanceolate; flowers in spikes, secund, monandrous.  

Monandrous Calandrina. Pl. 2 foot.

Cult. Calandrina is a fine genus of succulent plants; their culture and propagation are the same as that recommended for the species of Talinum, p. 77. The seeds of annual species may be sown in a hot-bed in spring, and the plants planted out into the open border, in a dry sheltered situation, about the end of May.


Lin. syst. Pentandria, Monogynia. Calyx of 2 permanent membranous sepals. Petals 5, permanent, equal, obovate, hypogynous. Stamens 5, inserted with the petals, but disposed without any respect to the number of petals, hence there are probably 10, 5 of which are abortive; anthers short, usually barren. Ovarium ovate-triquetrous. Style wanting; stigmas 3, spreading, mucrinated with glands on the upper side. Fruit triquetrous, winged, indischiscent, 1-seeded. A glabrous shrub, native of Africa. Leaves opposite, roundish-obovate, flat, fleshy. Peduncles opposite, denticulated, compressed; pedicels 1-flowered, 3 arising from each notch in the peduncle. Flowers small, rose-coloured. Fabric of seeds unknown.  

I P. A'fra (Jacq. l. c. t. 22.).  

X. ULLUCUS (Ulluco or Melloco is the name of the plant in Quito). Lozano, in sanan. Novv. gr. 1809. p. 185. D. C. prod. 3. p. 360.


XII. CLAYTONIA (in honour of John Clayton, who collected plants, mostly in Virginia, and sent them to Gronovius, who published them in his Flora Virginica). Lin. gen. 287.
PORTULACEÆ.

XI. Clarytonia.

Where wood has been burnt, or the ground turned up by deer.

Flowers rose-coloured and white. This species differs from C. perfoliata in its linear-spataculate radical leaves, ovate bracteas, and profusion of small flowers. (f. 19.)

Small-flowered Clarytonia. Pl. ½ foot.

5 C. spatulata (Dougl. mss. ex Hook. fl. amer. bor. 1. p. 226. t. 74.) plant minute; root fibrous; radical leaves numerous, linear, narrow, linear-spataculate; the 2 cauline ones ovate, acute, and sessile; racemes solitary, unibracteate; petals entire.  H. Native of the north-west coast of America, in the valleys of the Rocky Mountains. Corolla longer than the calyx. Stems many from the same root. This is the smallest of all the species.

Spatulate-leaved Clarytonia. Pl. ¼ foot.

6 C. sarmentosa (Meyer. nov. pl. in mem. acad. de Mouro. vol. 17.) sarmentose; leaves nervous; radical ones oblong, obtuse, petiolate; cauline ones ovate, somewhat cordate, stem-clasping, but distinct: racemes terminal, solitary, bracteolaceous; petals emarginate.—Native of St. George, one of the Aleutian Islands.

Sarmentose Clarytonia. Pl. sarmentose.

*** Roots tuberos or fusiform.

7 C. Virginiæcea (Lin. spec. 394.) leaves all narrow, linear, obsoletely 3-nerved, with anastomosing veins: radical ones very few; racemes solitary, nodding; pedicels elongated: lower ones bracteate; petals emarginate.  H. Native of North America, in New England, Virginia, and Carolina, in humid woods; and of Kotzebue's Sound. The leaves of the plant, from the last-mentioned habitat, are remarkable for their broadness. Pluk. aln. t. 102. f. 3. Flowers white.


5 C. grandiflora (Sweet. fl. gard. t. 216.) root tuberous; leaves linear-lanceolate, attenuated at both ends; racemes solitary, many-flowered; petals oval, obtuse, entire; sepals very blunt.  H. Native of North America, near Montreal, and on the Saschatchawan. C. Virginica, var. ³, média, D. C. pro. 3. p. 361. D. C. pl. grass. t. 131. Flowers pink or rose-coloured, with darker branched veins, and a yellow spot on the claw.


9 C. acutiloba (Sweet. hort. brit. edit. 2.) root tuberous; leaves all long, linear-lanceolate, 3-nerved, with anastomosing veins; racemes solitary, nodding; pedicels elongated: lower ones bracteate; petals elliptic, entire, acute at both ends: sepals acutish.  H. Native of North America, in humid parts of woods. C. Virginica, Sims. bot. mag. 941. C. Virginica, var. a, acutiloba, D. C. pro. 3. p. 361. Flowers white.


5 C. lanceolata (Pursh. fl. bor. amer. 1. p. 175. t. 3.) root tuberous; radical leaves very few, oblong, on long petioles: cauline ones elliptic, sessile, all 3-nerved, with anastomosing veins; racemes solitary, nodding; pedicels elongated: lower ones bracteate; petals deeply emarginate.  H. Native of North America, in the valleys of the Rocky Mountains, in a rich soil; and perhaps in Eastern Siberia. Flowers large, white. It is very nearly allied to C. Vestiana of Fisch.


12 C. Àrctica (Adams. act. mssce. 5. p. 94.) leaves nerve-
less, fleshy; cauline ones sessile, ovate; radical ones petiolate, subsapalulate; racemes secund; petals obovate, somewhat emarginate. \(2\). H. Native of Arctic Siberia, towards the mouth of the Lena. C. Chamissoi, Led. ex Spreng. syst. 1. p. 790. Flowers large, white, or pale yellow, with an orange throat.

Arctic Claytonia. Pl. 4 \textsuperscript{1/2} foot.

13 C. VESTIN\(\textsuperscript{A}NA\) (Fisch. in litt.) root tuberous; leaves veinless: radical ones oblong; cauline ones opposite, nearly sessile; stem dichotomous; pedunclu long, somewhat corymbose; petals entire. \(2\). H. Native of Siberia. C. Joanni, Röm. et Schultes, syst. 5. p. 434. This species differs from the true C. Siberica in the leaves being narrower, in the petals being white, and in the inflorescence. Flowers secund, at first nodding. Calyces lobes obtuse. Corolla appearing as if it were pedicellate.


14 C. ACCIPITRI\(\textsuperscript{O}LA\) (Pall. ex. Wild. rel. in Röm. et Schultes, syst. 5. p. 436.) leaves oblong, nervose, acute; petals emarginate; branches numerous from the sides of the root. \(2\). H. Native of Eastern Siberia. Flowers white. Stems 3-6 hands high.

Acute-leaved Claytonia. Fl. May, Ju. Clt. 1827. Pl. 1 \textsuperscript{1/2} ft.

15 C. TUBEROSA (Pall. ex Wild. rel. in Röm. et Schultes, 5. p. 436.) root tuberous; leaves linear-lanceolate, attenuated; petals rotor. \(2\). H. Native of Kamtschatka and Eastern Siberia, among hypnumns. Leaves 2, alternate. Tubers edible, like a potatoe.

Tuberous-rooted Claytonia. Pl. 1 \textsuperscript{1/2} to \textsuperscript{3/4} foot.


§ 2. Stem leafy. Leaves all alternate. Plants resembling Calandra in habit.

17 C. LIN\(\textsuperscript{E}RIS\) (Dougl. mss. ex Hook, fl. bor. am. 1. p. 224. t. 71.) stems branched; leaves linear-narrow, obtuse, 3-nerved; racemes terminal, subsecund, bracteate at the base; petals entire. \(2\). H. Native of North-west America, in moist rocky places; on the Great and Little Falls of the Columbia, abundant. Stems filiform, leafy. Petals obovate. (f. 20.)

Linear-leaved Claytonia. Pl. \textsuperscript{3/4} to \textsuperscript{3/2} foot.

18 C. FILICA\(\textsuperscript{U}LE\)S (Dougl. mss. ex Hook. fl. bor. am. 1. p. 224. t. 72.) stems branched at the base: lower leaves obovate, acute, reticulately veined, running into petioles; cauline leaves linear-oblanceolate; racemes terminal; flowers bracteate; petals entire. \(2\). H. Native of north-west coast of America, in rocks in Nootka and Queen Charlotte's Sound; plentiful on moist rocks of the Columbia, near the ocean. Flowers largish.

Thread-stemmed Claytonia. Pl. 4 \textsuperscript{1/2} foot.

19 C. STOLON\(\textsuperscript{E}R\)S (Meyer. l. c.) stems erect, branched, bearing stolons at the base; leaves nearly sessile, oblong-oblanceolate, acute, a little nerved; racemes suberybomybose, lateral, bracteate; petals entire. \(2\). H. Native of Unalaschka.

Stoloniferous Claytonia. Pl. 4 \textsuperscript{1/2} foot.

20 C. PARVIF\(\textsuperscript{O}L\)IA (Moc, icon. pl. nootk. ined. ex D. C. prod. 3. p. 361.) leaves nerveless; cauline ones alternate, elliptic, acute, attenuated at the base; radical ones like the cauline ones on short petioles; racemes few-flowered; pedicels solitary, bracteate; petals acutely emarginate. \(2\). H. Native of North-west America, at Nootka Sound. Flowers rose-coloured.

Small-leaved Claytonia. Pl. 4 \textsuperscript{1/2} foot.

† A very doubtful species.

21 C. NE\(\textsuperscript{M}O\)ROK\(\textsuperscript{O}S\)A (Wild. rel. in Röm. et Schultes, 5. p. 436.) leaves ovate: superior ones tern; racemes twin. \(2\). S. Native of South America, in the shady woods of Javita. Perhaps this plant ought to be removed from the genus. E. B. et Kunth, nov. gen. am. 6. p. 80. The plant, according to Boupland, has a quadrangular stem; opposite petiolate leaves; terminal dichotomous spikes; 10-parted calyx; a semi-5-lefl corolla; a short style, 2 stigmas, and a 1-celled, many-seeded capsule.

Grove Claytonia. Pl. ?

Cult. The greater part of the species of Claytonia are very delicate little plants, especially those with tuberous roots: these grow best in a border of peat soil, and are increased by seeds, which sometimes ripen plentifully. The fibrous-rooted kinds, being all annual, the seeds of them only require to be sown in the open border, in a rather moist shaded situation; if they are allowed to scatter their seeds, plants will rise every year in abundance.


LIN. SYST. TRIANDRIA, TRIGYNIA. Calyx of 2, rarely of 3 sepals. Petals 5, connected a little way at the base, 3 of which are smaller than the other 2. Stamens inserted in the claws of the petals, usually 3 in front of each of the smaller petals, very rarely more. Ovary sessile. Style very short, 3-parted; divisions spreadingly reflexed. Capsule 1-celled, 3-valved, 3-seeded.—European, glabrous, aquatic, or bog herbs. Leaves opposite. Flowers axillary, small. This genus is hardly distinct from Claytonia.

1 M. FONT\(\textsuperscript{A}NA\) (Lin. spec. p. 129.) \(\odot\). W. H. Native of Europe and North America; also of South America, in bogs, ponds and ditches.


Fountain or Water-chickweed. Fl. April, May. Brit. Pl. \textsuperscript{3/4} to \textsuperscript{3/2} foot.

Cult. This plant will grow in any moist soil, or in water.


LIN. SYST. TRIANDRIA, TRIGYNIA. Calyx 3-parted; lobes elliptic, obtuse. Petals wanting. Stamens 3, alternating with the parts of the calyx, and hypogynous. Ovary 1, oval. Styles 3, short, acute. Capsule 1-celled, 3-valved, 3-seeded.
Seeds fixed to the central placenta.—A small smooth herb, native of North America. Radical leaves 3, entire, linear-lanceolate, acute. Scape 1-flowered, length of leaves. This genus is hardly known, but it only appears to differ from Montia in the want of petals.

1. L. autumnalis (Rafin. l. c.). O. B. H. Native of North America, on the banks of the Ohio.

Cult. The seeds of this plant only require to be sown in the open ground, in a moist situation; and if the plant is allowed to scatter its seeds, there will be plenty of plants each year.

XIV. COLOBANTHUS (from κολόβος, kolobos, maimed, and andove, andos, a flower; in reference to the want of petals). Presb. in rel. hook. Haenk. 2. p. 13. t. 49. f. 2.

Lin. syst. Tetra-Hexandria, Tetra-Pentagynia. CaIyx 4-5-parted. Petals wanting. Stamens 4-6, alternating with the segments of the calyx. Stigmas 4-5. Capsule 4-7-valved, many-seeded. Both Bartling and Kunth insert this genus in the order Caryophyllaeae, while the stamens are decidedly perigynous, and therefore ought to come among the Portulaceae.

1. A. Leptopoleis (Gill. mss. ex Hook. et Arn. in bot. misc. p. 246.) root perennial, with a multiple neck; calyx 5-parted; segments ovate; capsule 5-valved. 2. F. Native of Chili, at Los Hornillos, El Paramillo San Isidro, and on the Andes of Mendoza.

Actinio- like Colobanthus. Pl. 1/2 foot.

2. C. Quitensis (Bartling, in Presb. rel. hook. Haenk. 2. p. 13. t. 49. f. 2.) root annual, with a multiple neck; calyx 5-parted; segments lanceolate; capsule 5-valved, O. H. Native about Quito, and on the Cottillera of Chili. Sagina Quitensis, H. B. et Kunth, nov. gen. amer. 6. p. 19.

Quito Colobanthus. Pl. 1/2 foot.

3. C. nigrinae (Bartl. in Presb. rel. hook. Haenk. 2. p. 13. t. 49. f. 1.) root annual, with a multiple neck; calyx 4-parted; segments ovate; capsule 4-valved. O. H. Native of Chili.

Sagina-like Colobanthus. Pl. 1/2 foot.

Cult. See Portulaca for culture and propagation, p. 75.

XV. GINGINSIA (in honour of M. Gingins, who has written upon the genera Viol a and Lavandula). D. C. prod. 3. p. 362.—Pharnaceae species of authors.

Lin. syst. Pentandria, Trigynia. Calyx 5-parted; lobes oval, permanent, petaloid on the inside and at the margins. Petals wanting. Stamens 5, inserted in the bottom of the calyx, and alternating with its lobes; stamens 2-celled, inserted by the base. Ovary surrounded at the base by a 5-toothed fleshy scale. Style wanting. Stigmas 5, crested-formed. Capsule 3-valved, 1-celled. Seeds numerous, fixed to the central placenta.—Cape shrubs. Leaves irregularly verticillate, opposite or alternate, filiform or linear, furnished with scarios stipples at the base. Peduncles axillary, elongated, bearing umbels of pedicellate flowers at the apex; branches of umbels numerous, divided, many-flowered. This genus differs from Pharnaceum and all the other Caryophyllaceous genera in the stamens being perigynous, and in the leaves being usually alternate; and from all the genera in the order Paronychiae in the stamens alternating with the sepals, not opposite them.

§ 1. Leaves linear.

1 G. brevicaulis (D. C. in mem. soc. hist. nat. par. vol. 4. with a figure. D. C. prod. 3. p. 362.) plant almost stemless; leaves linear, mucronate, crowded in whorls, almost radical; stipules membranous, ciliately jagged at the apex. ½ G. Native of the Cape of Good Hope. Pharnaceum ligneare, Thunb. fl. cap. 274. but not of others. Stems very short. Leaves rather spreading, unequal.

Short-stemmed Ginginsia. Pl. 1/2 foot.

2 G. elongata (D. C. l. c. with a figure; prod. l. c.) leaves alternate, linear, crowded at the tops of the branches; stipules linear-elongated, ciliately jagged; peduncles more than 3 times longer than the stem. ½ G. Native of the Cape of Good Hope. Pharnaceum incanum, Lin. mart. p. 358. but not of others. Pharnaceum ligneare, Andr. bot. rep. t. 329. Flowers white.


3 G. aurantiaca (D. C. prod. 3. p. 363.) caulescent; leaves linear, crowded in whorls; whorls distant; stipules small. ½ G. Native of the Cape of Good Hope. Pharnaceum ligneare, Andr. bot. rep. t. 329. but the leaves are linear in Andrews's plant, not filiform. Flowers green on the outside, but yellowish inside and on the edges.

Whitish Ginginsia. Pl. 3/4 to 1/2 foot.

5 G. conferta (D. C. l. c.) plant caulescent; leaves opposite, crowded, terete, mucronate; stipulas cut into several setaceous hairs, one half shorter than the leaves. ½ G. Native of the Cape of Good Hope. Lam. ill. t. 214. f. 3. Pharnaceum incanum, Thunb. fl. cap. 273. Sims, bot. mag. 1883. but not of Lour.


6 G. prinosea; stems branched, thickish; branches pale from membranous stipules; leaves crowded, filiform, acute, terete, fleshy, mealy or prunose. ½ G. Native of the Cape of Good Hope. Pharnaceum prinoseum, Haw. pl. succ. p. 15.


7 G. microphylla (D. C. l. c.) plant caulescent; leaves terete, obtuse, in fascicles at the nodes, the rest scattered; stipulas woolly; branches scattered; divaricate. ½ G. Native of the Cape of Good Hope. Pharnaceum microphyllum, Lin. fl. suppl. 185. Thunb. fl. cap. p. 272. Mollugo microphylla, Ser. in D. C. prod. 1. p. 329. Said to be very like G. conferta.

Small-leaved Ginginsia. Pl. 1/2 to 3/4 foot.


Tere-cleaved Ginginsia. Shrub 1 foot.

Cult. A mixture of loam, peat, and sand will answer the species of this genus; and the pots in which they are grown should be well drained with sherds. The best way of propagating them is by seeds.

XVI. AYLMERIA (in honour of Aymer Bourke Lambert, F. R. S. F. S. A. and V. P. L. S. the celebrated botanist, to whom we owe many obligations in the prosecution of the present work).
portulae. xvi. alymeria. xvii. hydropyxis. paronychieae.


Lin. syst. monadelphia, pentandra. calyx 2-parted, coloured. petals 5. stamens 10, joined into a membranous hypogynous tube; the 5 outer ones abortive; and the inner ones opposite the petals, bearing 2-celled anthers. style 1; stigma depressed, capitata. utriculus membranous, valveless. seeds numerous, lentiform, in the bottom of the cell.—australian perennial herbs. stems terete, jointed, dichotomous upwards. leaves linear, opposite, or in whorls. stipulas scarios. flowers beautifully coloured, in terminal corymbs. according to martius, the genus is related to paronychieae, but this is doubtful, in consequence of the stamens being hypogynous, and also particularly so in their being opposite the sepals. the calyx is of 2 sepals, as in portulaca, and the petals are 5, as in most of the order, and the stamens are 10, as in trianthema.

1. a. rosea (mart. l. c.) stems straightish, and are, as well as the leaves, glabrous; stipulas ciliately serrulately; corymb compact. fl. g. native of new holland, on the western coast. flowers rose-coloured.

rose-coloured-flowered alymeria. pl. 1 foot.

2. a. violacea (mart. l. c.) stems diffusely dichotomous, and are as well as the leaves glabrous; stipulas quite entire; corymb loose. fl. g. native of new holland, on the west coast. flowers violaceous.

violaceous-flowered alymeria. pl. 1 foot.

cult. see ginensing for culture and propagation. p. 83.

xvii. hydropyxis (from vōop, hydor, water, and πυξις, pyxis, a box; the plant is an inhabitant of water, and the capsule resembles a box, from its opening transversely). rafin. fl. lud. p. 94. d. c. prod. 3. p. 364.

lin. syst. tetrandria, monogynia. calyx permanent, 5-parted, bibracteate on the outside; the two inner lobes the smallest. corolla peripetalous (perhaps inserted in the calyx), crateriform, unequally 5-lobed. stamens 4, didynamous, inserted in the corolla; anthers hasteate. ovarium superior. style simple, crowned by a capitale 3-lobed stigma. capsule 1-celled, many-seeded, triangular, opening transversely. central placenta free. this genus is likely to be nearer related to utricularia than to any other.

1. h. panu'estris (rafin. l. c.) native of louisiana, in ditches and marshes. pourry d'harais, robin. voy. p. 488. stems creeping, prostrate. flowers axillar, pedunculate, solitary, white.

marsh hydropyxis. pl. creeping.

cult. this plant should be grown in a pot filled with peat, and placed in a deep pan of water. it is easily propagated by separating the runners.


calyx of 5 sepals (f. 21. a. f. 22. a.), seldom of 3-4; sepals sometimes separate to the base, sometimes joined to the middle (f. 22. a.), and sometimes nearly to the apex (f. 24. a.). petals small, scale-formed (f. 22. a.), emulating sterile stamens, inserted upon the calyx between the lobes, occasionally wanting (f. 23. a.), or converted into superabundant stamina. stamens perigynous, exactly opposite the sepals (f. 22. a.), if equal to them in number, but sometimes fewer by abortion; filaments distinct; anthers 2-celled (f. 21. c.). ovarium free. styles 2-3, either distinct (f. 24. a.), or partially combined (f. 22. d.). fruit small, dry, 1-celled, usually membranous, either valveless and indehiscent, or opening with 3 valves. seeds either numerous, fixed to a free central placenta, or solitary and pendulous, upon a funicle, arising from the base of the cavity of the fruit. albumen farinaeous. embryo cylindrical, lying on one side of the albumen, curved more or less, with the radicle always pointing towards the hyurn. cotyledons small.—herbaceous or half-shrubby branching plants, with opposite or alternate, often fasciaded, entire, sessile leaves and scarious stipulas. flowers small, usually whitish green, sometimes sessile and axillary, and sometimes variously disposed in terminal cymes. bracteae scarious, analogous to the stipulas.

this order comes very near portulaceae, amaranthaceae, and Caryophyllaceae, from which it is distinguished with difficulty. by excluding the section sceléndthece, their scarious stipula will distinguish them from the two last-mentioned orders, and there is scarcely any other character that will; for there are Caryophyllaceae that have perigynous stamens, as lárrea and adenium; and paronychieae which have hypogynous ones, as polycorpa, stipulácida, and ortégia. from portulaceae it is scarcely to be known with absolute certainty, except by the position of the stamens before the sepals instead of the petals. withCrassulaceae, particularly tiliae, they agree very much in habit, but their concrete carpella will always distinguish them. de candolle comprehends in the order various plants without stipulas; but as the latter organs seem to be an essential part of their character, the tribes Querciaceae and Minuartiaceae are excluded, and will be found elsewhere.

synopsis of the genera.

tribe i.

telephieae. calyx 5-parted (f. 21. a.). petals and stamens 5, inserted in the bottom of the calyx (f. 21. b.). styles 3 (f. 21. c.) free, or connected together a little at the base. leaves alternate, stipulaceous.

1. telephium. styles 3, spreadingly flexed, concrete at the base. capsule pyramidal, trigonal, 3-valved, 3-celled at the base, and 1-celled at the apex. seeds numerous, fixed to the central placenta, in 6 rows.

2. corrigiola. style short; stigmas 3 (f. 21. c.). capsule 1-seeded, indehiscent, covered by the calyx. seed suspended by a funicle, originating at the bottom of the capsule.

tribe ii.

Illece'breae. calyx 5-parted (f. 22. a.). petals 5 or wanting. stamens 2-3, inserted in the bottom of the calyx (f. 22. a.). styles free or somewhat concrete at the base (f. 22. d.). capsule indehiscent, 1-seeded. funicle long, rising from the bottom of the capsule, bearing a subpendulous seed at the apex.—herbs, rarely subalbus. leaves opposite, acute, with scarious stipulas.

3. herniaria. calyx almost 5-parted. scales or petals 5, filiform, entire, but sometimes wanting or very small. stamens 5, or only 2-3 from abortion. styles 2, short, distinct, or concrete at the base. capsule covered by the calyx.
I. Telephium.

16 Ceridia. Lobes of calyx petaloid inside, ending in a bristle each at the apex. Petals wanting. Stamens one, in front of one of the sepal. Style filiform, bifid at the apex. Capsule 1-celled, many-seeded.

Tribe IV.

18 Lithophila. Calyx 3-parted, acute. Petals 3. Scales or abortive stamens 2, opposite the sepal. Stamens 2, placed at one side of the ovary. Style thick, bluntly emarginate at the apex. Fruit unknown. A very minute glabrous herb.

19 Selloria. Calyx urceolate, 5-cleft, membranous, 10-ribbed. Petals 5, alternating with the lobes of the calyx. Stamens fixed in the middle of the segments of the calyx, and shorter than them; anthers didymous. Style 1; stigma obtuse. Capsule 3-valved, 1-celled, 1-seeded. A smooth herb, with the habit of Illécebrum verticillatum.

Tribe I.

TELEPHIEÆ (plants agreeing with the genus Telephium in important characters). D. Č. prod. 3. p. 366. Calyx 5-parted (f. 21. a.). Petals and stamens 5 (f. 21. b.), inserted into the bottom of the calyx. Styles 3 (f. 21. c.), distinct, or somewhat conjoined at the base.—Leaves alternate, stipulate.


Lin. syst. Pentástria, Monogynia. Calyx 5-parted, permanent; lobes oblong, concave. Petals 5, inserted in the bottom of the calyx, and alternating with its lobes, and about equal in length to them. Stamens 5, opposite the sepals, and inserted in their bases. Styles 3, spreadingly reflexed, concrete at the base. Capsule pyramidal, trigonal, 3-valved, 3-celled at the base, and 1-celled at the top from the dissepiments not being extended so far. Seeds numerous, disposed in 6 rows on the central placenta. Embryo lateral, curved, but not annular. Albumen mealy.—Subshrubby, procumbent, many-stemmed, glabrous, glaucous herbs. Leaves alternate, rarely opposite, stipulate. Flowers white or greenish white.


2 T. oppositirriformium (Lin. spec. 388.) leaves opposite; flowers in racemose corymbs, crowded. 2. H. Native of Barbary.
Shaw, spec. p. 572, with a figure. Flowers white. Perhaps only a variety of the preceding.

**Opposite-leaved Orpine.** Pl. tr.

3 T. laxiflorum (D. C. prod. 3. p. 366.) leaves alternate; peduncles opposite the leaves, trifid at the apex; middle pedicel 1-flowered, lateral ones elongated, and usually 3-flowered. 2 G. Native of the Cape of Good Hope. Herb glaucous. Leaves alternate, distant, obovate, mucronate; petiole short, margined, with a membrane. Capsule subglobose, 3-celled nearly to the apex. Perhaps a proper genus, but the habit is truly that of Telephium.

**Loose-flowered Orpine.** Pl. tr.

Cult. All the hardy species of Orpine grow well in any light soil; and may either be increased by cuttings or parting at the root; they are well adapted for ornamenting rock-work. The last species being a native of the Cape of Good Hope, requires the protection of a greenhouse in winter.


**Lin. syst. Pentändria, Trigynía.** Calyx 5-parted (f. 21. a), permanent. Petals 5 (f. 21. b), equal to the calyx and inserted in it, and alternating with its lobes. Stamens 5, opposite the sepals. Style short; stigmas 3 (f. 21. c). Capsule 1-seeded, indehiscent, covered by the calyx. Seed suspended by a funicle, which rises from the bottom of the capsule.—Procumbent glaucous herbs, with alternate stipulate leaves, and terminal raceme-corymb of small flowers. Habit of Telephium.


var. β, imbriçá (Lapeyr. abr. p. 169.) stems short; lower leaves rather imbricated. 2 H. Native about Vinea and Nyer.


3 C. deltoïda (Hook. et Arnott, in Beech, bot. p. 24.) stems prostrate; leaves deltoid, long, spatulate; racemes lateral, furnished at the base by a spatulate bractea. 2 H. Native of Chili, about Concepcion and Valparaíso. This plant bears a strong resemblance to C. littoralis. Flowers white.

**Deltoid-leaved Corryiola.** Pl. prostrate.

4 C. squamosa (Hook. et Arn. in bot. misc. 3. p. 247.) cauliflex perennial, a little branched, very scaly at the apex, from which many stems issue; stems prostrate; leaves linear, oblong; racemes corymbose, leafless. 2 H. Native of Chili, about Valparaíso, Vina de la Mar, and Playa Ancha. The lower part of the stem, which is here called a caudex, from its resemblance to that part of ferns, is to be seen in no other species of the genus; the scaly appearance at its summit is obviously caused by a congeries of stipulas. Flowers white.

**Scaly Strap-wort.** Pl. prostrate.


Cult. The seeds of the annual kinds be sown in dry light soil. The culture of the perennial kind is the same as that recommended for the hardy species of Telephium.


**Lin. syst. Pentändria, Digynía.** Calyx nearly 5-parted, somewhat coloured inside. Scales or petals 5, filiform, quite entire, alternating with the sepals, sometimes wanting or very small. Stamens 5, or only 2-3 from abortion, opposite the sepals. Styles 2, short, distinct, or concrete at the base. Capsule 1-seeded, indehiscent, covered by the calyx.—Prostrate suffrutescent small herbs, with branched stems. Leaves opposite, stipulate: stipulas solitary between the leaves, broad at the base. Flowers glomerate in the axils of the leaves. Bacteria small.

§ 1. Herniaria veris (true species of Herniaria). Stems prostrate, small; flowers glomerate in the axils of the leaves, pubescent or hairy on the outside.

1 H. cine'erea (D. C. fl. fr. suppl. p. 375. mem. par. t. 3.) plant of many stems, herbaceous, clothed with cinereous hairs; branches ascending; leaves oval, acute at both ends; flowers crowded, axillary. O. H. Native about Montpelier, Narbonne, plentiful in Spain in dry gravelly or sandy places. In Spain the plant is called Quebrantapiedras. H. annua, Lag. gen. et spec. p. 12. and perhaps H. latifolia, Lapeyr. abr. p. 127.


2 H. vires'cens (Salzm. pl. exsic. ex D. C. prod. 3. p. 367.) herb ascending, many stemmed, smoothish; leaves oval, ciliated; bundles axillary, few-flowered; calyx rather pilose. O. H. Native of Mauritania, about Tangiers. It differs from H. cineerea in the greenish habit, nearly as H. hirista does from H. glabra, or as H. alpina does from H. incana.

**Greenish Rupture-wort.** Pl. tr.


4 H. hirista (Lin. spec. p. 317.) plant herbaceous, prostrate, hairy; leaves oval-oblong; bundles sessile, few-flowered.
§ 2. Polygonomoidae (plants with the habit of *Polygonum*). Stems erect, dichotomous at the apex. Flowers glabrous, disposed in loose cymes. Perhaps a proper genus.

12 H. Polygonoides (Cav. icon. 2. t. 137.) erect, glabrous, shaggy; branches dichotomous at the apex; leaves ovate, cuspidate, distant. ½. H. Native of Mauritania, near Mazar; and on the hills of Spain, in Valenita, as well as in Provence. Illécebrum suffruticosum, Lin. spec. p. 298. Paronychia suffruticos, Lam. fl. fr. 3. p. 290. Herniaria erecta, Desf. alt. 1. p. 214. H. Joanneana, Rom. et Schultes, syst. 6. p. 297. This species differs from *Paronychia*, in the fruit being indehiscent. The habit is very dissimilar from the other species of *Herniaria*, but emulates *Anchusa* and *Paronychia*.


† Species not sufficiently known.

13 H. dichotota (D. C. prod. 3. p. 368.) stems erect, numerous, dichotomous, herbaceous; leaves distant, oblong, mutic, and are, as well as the branches, powdery from short down; flowers cymose. ½. H. Native country unknown. Paronychia dichótoma, D. C. in Lam. diet. enes. 5. p. 25. Illécebrum dichótum, Pers. enh. 1. p. 261. “Calyx glaucescent, striated at the base and pubescent, profoundly 5-cleft; segments bluntish, with scarious margins; sterile threads 5, alternately with the sepalis, and 5 antheriferous ones opposite them, hardly shorter than the sterile ones. Style bidentate at the apex. Ovarium attenuated at the base. Ovulum one, pendulous, suspended from the top of a thread, which arises from the bottom of the capsule.” Adr. Juss. in litt. 1827.

Dichotomous Rupture-wort. Pl. ½ to ¾ foot.

14 H. Lenticula'ta (Thunb. fl. cap. 2. p. 245.) suffruticoso, hairy, pubescent, clothed with cinereous villi; leaves ovate, fleshy. ½. G. Native of the Cape of Good Hope. H. incana Capénis, Pers. This is a very obscure species. The Linnean plant under this name, according to Vahl and Smith, is *Crésus Crética*; but we know not what Thunberg's plant is.

Lenticular Rupture-wort. Pl. procumbent.

Cult. All the species are weedy looking plants, most of them with the habit of wild-thyme, and therefore are only worth cultivating in botanic gardens. The plants grow best in dry light sandy soil, and are increased by seeds.


Linn. syst. Pentándria, Monogónia. Calyx almost 3-parted, permanent; segments coloured inside. Petals 5, emulating sterile filaments. Stamens 5, inserted in the bottom of the calyx. Style one, crowned by a simple stigma. Capsule valveless, 1-seeded, covered by the indurated calyx.—Diffuse subshrubs, with opposite stipulate leaves, usually bearing fascicles of rameal leaves in the axils. Pedicels axillary, solitary, opposite, appearing crowded at the tops of the branches, from the internodes being short. The name of this genus is spelt variously by authors, viz. Gymnocyprados (Forsk.), Gymnocypris (Viv.), Gymnocypris (Pers.), Gymnocypris (Steud.).


Shrubby Gymnocarpum. Shrub 1 foot.

Cult. This shrub will require to be protected from frost in the immediate neighborhood of the "natural" areas.
winter, and for this purpose it should be grown in a pot. A mixture of sand and loam will suit the plant very well, and it may either be increased by seeds or cuttings.


Dichotomous Anychia. Fl. May, Aug. C1t. 1806. Pl. ½ to ½ foot.

2 A. capillacea (D. C. prod. 3. p. 369.) stem quite glabrous, smooth; leaves ovate; stipulas shorter than the flowers; flowers remote. O. H. Native of New Jersey and New England, in pine barrens. Quería capillacea, Nutt. gen. amer. 1. p. 159. Anychia dichotoma β, Torr. l. c. According to Torrey, this is only a smooth variety of the last.

Capillaceous Anychia. Pl. ½ to ½ foot.
Cult. The seeds of these plants only require to be sown in the open border in a dry warm situation in a light soil.


Lin. syst. Di-Pentandria, Digynia. Calyx 5-parted, nearly 3-sepalied; sepals subcucullate, thickened, ending in an awn-like horn at the apex on the back. Petals wanting, or 5 subulate scales in place of the petals, alternating with the lobes of the calyx. Stamens 2-5, opposite the sepals, and inserted in their base. Style hardly any; stigmas 2, capitate. Capsule covered by the calyx, 5-valved, or divisible into 5 at the stripes. Seed solitary from abortion, inserted in the side of the capsule. Embryo hardly placed, on one side of the albumen, which is farinaceous. —A small trailing herb, with opposite leaves, furnished with scarious stipulas at the base. Flowers axillary or cyme. Bracteas scarious, narrower than the flowers.


Cult. The seeds of this plant should be sown in a moist situation, where the plants will thrive and flower freely; and if the seeds be allowed to scatter themselves, the plants will rise regularly every season. It is worth cultivating, being a small delicate beautiful plant.


Lin. syst. Pentandria, Monogynia. Calyx 5-parted (f. 22. f); lobes concave, cucullate, generally mucronate at the apex (f. 22. b). Petals or scales 5, subulate, alternating with the lobes of the calyx. Stamens 5 (f. 22. a). Style one, entire or bifid (f. 22. d); lobes papilliferous inside. Capsule 1-seeded (f. 22. c), membranaceous, indehiscent or 5-valved, covered by the calyx. —Herbaceous or suffrutescent much branched plants.

Leaves opposite, stipulate; stipulas scabrous, twin on both sides between the leaves. Young leaves frequently in fascicles in the axils of the old leaves. Flowers cymose or gloomate, but usually crowded in the axils of the leaves.

SECT. I. CH حتون (from خارن, chait, a head of hair, and ονυξ, onyx, a claw; in reference to the lobes of the calyx ending in a bristle each). D. C. prod. 3. p. 370. Lobes of calyx equal, dilated at the apex, membranous, ending in an awn on the back. Scales or petals, or abortive stamens perhaps wanting.


SECT. II. EUSYCHIA (altered from Paronychia). This section is supposed to contain the genuine species of the genus). D. C. prod. 3. p. 370. Lobes of calyx equal, awned, mucronate or nearly unarmed, not dilated at the apex. Flowers crowded in the axils of the leaves.

2 P. echina (Lam. fl. fr. 3. p. 232. exclusive of Lin. syn.) stems branched, prostrate, smoothish; leaves oval, glabrous; flowers subsecund, crowded in the axils of the leaves, puberulous; lobes of calyx drawn out into somewhat divaricate awns. O. H. Native of Mauritania, Portugal, Corsica, Sicily, Provence, in sand by the sea side. Illecebrum echinatum, Desf. atl. 1. p. 204. Vill. in Schrad. journ. 1801. p. 409. t. 4. Smith, fl. grcc. t. 245.—Bosc. sic. t. 20. f. 3. Flowers greenish.


3 P. Brilliantia (D. C. in Lam. dict. 5. p. 23.) stems trailing, puberulous; leaves oblong-lanceolate, narrowed both at the base and apex, mucronate, pubescent on both surfaces; flowers crowded in the axils of the leaves; calyx glabrous, deeply 5-parted; lobes ending in a long mucron each. O. G. Native of Buenos Ayres and Monte Video, by road sides. P. Bonariensis, D. C. prod. 3. p. 370. Flowers white.

Brazilian Paronychia. Fl. May, July. C1t. 1820. Pl. tr.

4 P. commutis (St. Hil. fl. bras. 2. p. 186.) stems trailing, puberulous; leaves oblong-lanceolate, narrow at the base and the apex, mucronate, pubescent on both surfaces; flowers crowded in the axils of the leaves; calyx turbinate, pubescent; lobes equal, ending in short points. O. G. Native of Brazil, in pastures in that part of the province of St. Paul called Cam-
pos Geraes, and by the sea side in the province of St. Catharine.

Flowers deep brown.

**Common Paronychia.** Pl. tr.

5 P. CHILENSIS (D. C. prod. 3. p. 370.) stems diffuse, tufted; leaves crowded, oblong-linear, mucronate, smoothish; flowers crowded in the axils of the leaves; lobes of calyx harshly mucronate at the apex.  

6 P. Chilian (D. C. prod. 3. p. 370.) stems diffuse, pubescent; leaves linear-subulate, keeled, mucronate, puberulous; flowers crowded in the axils of the leaves; calyx turbinate, smoothish; lobes equal, acute.  

**Chili Paronychia.** Pl. 7/12 foot.

7 P. CAMPHOROSMIFUS (St. Hil. fl. bras. 2. p. 187.) stems diffuse, pubescent; leaves oblong-linear, glabrous, awned mucronate; flowers sessile, rather crowded; lobes of calyx ending in a long awn each.  


**Arabian Paronychia.** Pl. diffuse.

9 P. POLYGONIFOLIA (D. C. fl. fr. ed. 3. vol. 3. p. 403.) stems trailing, branched; leaves oblong-linear, smoothish, acute, not mucronate; flowers rather crowded in the axils of the leaves; lobes of calyx ending in a short mucrone each.  


**Knot-grass-leaved Paronychia.** Pl. tr.

11 P. argéntea (Lam. fl. fr. 3. p. 280.) stems trailing, branched; leaves ovate, smoothish, acute; flowers axillary and terminal, crowded; lobes of calyx ending in a short mucrone each.  

12 P. argéntea, H. Native of Dauphiny, Spain, and Baleares Islands. Illecebrum polygonífolium, Vill. in Schrad. journ. 1801. p. 410. t. 4. Illecebrum verticillatum β, Willd. spec. 1. p. 1205. Illecebrum alpinum, Vill. dauph. 1. p. 296. This plant hardly differs from P. argéntea, unless in the leaves being narrower.

**Silvery Paronychia.** Pl. tr.

13 P. capitáta (Lam. fl. fr. 3. p. 229.) stems erectish; leaves oblong, keeled, ciliated, pubescent; bracteas acuminate; heads of flowers terminal; lobes of calyx linear, unequal.  


**Var. β, Mauritíaca (D. C. prod. 3. p. 571.) leaves broader; heads large, distant.**  

15 P. Mauritíaca, H. Native of Mauritania and the Archipelago. Illecebrum Mauritánicum, Wildl. rel. in Röm. et Schultes, syst. 5. p. 516.


16 P. capitáta, Pl. 1/4 to 1/5 foot.

17 P. serrúllífolía (D. C. in Lam. dict. 5. p. 24. fl. fr. ed. 3. vol. 3. p. 404.) stems prostrate, creeping, knotted, branched; leaves obovate, flat, rather fleshy, with ciliated margins; flowers terminal; bracteas acuminate; lobes of calyx awnless.  

**Serrúllífolía,** Vill. in Schrad. journ. 1801. t. 4. Flowers white.

**Var. β, herniarioides** (Pour. chl. narb. p. 321.) leaves subcordate.


18 P. nivea (D. C. dict. ency. 5. p. 25.) stems erectish, much branched; leaves oblong, acute, flatish, pubescent; bracteas large, short-acuminate; heads of flowers terminal; lobes of calyx awnless.  


19 P. arenícóides (D. C. prod. 3. p. 571.) stems fruticulose, ascending; much branched; branches hairy; leaves clothed with silky pubescence, oval-oblong, obtuse, not exceeding the stipulas; bracteas obtuse; heads of flowers terminal.  

**Arenícóides, H. Native of Spain, in the province of Valencia. Illecebrum arenícóides, Pourr. ined. ex L. Duffl. in litt.**  

**Aretia-like Paronychia.** Pl. 1/3 to 1/5 foot.

20 P. Canariénse (Juss. mem. mus. 1. p. 389.) stem shrubby, erect, branched at the apex; branches rather hairy from short white hairs; leaves ovate, acute, downy; cymes panicled, branched, loose; bracteas mucronately awned at the apex, but not hiding the flowers.  

**G, Native of Tenerife.**  

**Habit of Polyacarpae Canariæsia, but differs in the ovary being 1-seeded.**

**Canary Paronychia.** Pl. 1/2 to 3/2 foot.

21 P. smíthii (Choisy, mus. ex D. C. prod. 3. p. 371.) stem shrubby, erect, branched; leaves linear-oblong, acuminate, nerveless, and are, as well as the branches, glabrous; cymes few-flowered, loose; lobes of calyx mucronately awned.  

**Smiths, G. Native of the Canary Islands.**

**Smith's Paronychia.** Shrub 1/4 to 1/2 foot.

22 P. herniarioides (Nutt. gen. amer. 1. p. 159.) plant herbaceous, trailing, crowded, downy all over; leaves oblong-oval, ciliated, terminated by a bristle; lobes of calyx subulate, ending each in a spreading setaceous acumen.  


**Rupture-wort-like Paronychia.** Pl. tr.

23 P. dichógoma (Nutt. gen. amer. 1. p. 159.) plant rather herbaceous, tufted, procumbent, glabrous; leaves linear, acerate, acute, marked by a double line on the back; stipulas bident; cymes dichotomous; bracteas shorter than the flowers; lobes of calyx ending in a short mucrone each.  

**Dichógoma, H. Native of Virginia, on rocks at the river Shenandoah. Achyranthes dichótoma, Lin. mant. p. 51.**

**Dichotomous Paronychia.** Pl. procumbent.

24 P. argyrocoma (Nutt. l. c. p. 160.) plant herbaceous, tufted, procumbent, pubescent; leaves linear, acutely pungent, villous, nerveless; stipulas entire; cymes dichotomous; bracteas about equal in length to the flowers; lobes of calyx mucronate.  


**Silvery-tufted Paronychia.** Pl. procumbent.

25 P. sessíllífolía (Nutt. l. c. p. 160.) plant densely tufted, much branched, glabrous; leaves linear-subulate, acute; superior ones longer, recurved; stipulas about equal in length to the leaves, bifid; flowers terminal, sessile; lobes of calyx arched on the inside at the apex, and ending in a long awn each on the N.
outside. \( \mathcal{L} \). H. Native of North America, on the more elevated hills about the Missouri, near Fort Mandan; on the dry banks of the north branch of the Saskatchewan, between Carlton House and Edmonton House. Hook. fl. bor. amer. 1. p. 227. t. 75. (f. 22.)

**Sessile - flowered Paronychia.** Pl. \( \frac{1}{4} \) foot.

**SECT. III. ACANTHONYCHIA**

(from *acaride, acanthos*, a spine, and *ovis, onyx*, a claw; in reference to the 3 outer lobes of the calyx, each being furnished with an awn-like spine at the apex). D. C. prod. 3. p. 372. Lobes of calyx unequal, 3 outer ones furnished each with an awn-like spine at the apex, 2 inner ones small, and nearly unarmed. Stigmas 2, sessile.

20 P. Rosetta (St. Hil. fl. bras. 2. p. 188. t. 113.) stems trailing, woolly; leaves linear-lanceolate, somewhat ciliated; flowers axillary, longer than the stipulas. \( \mathcal{O} \). H. Native country unknown. Illécebrum tenuifolium, Willd. enum. suppl. p. 12.


22 P. sedifolia (Saut. itin. abyss. ed germ. 1. p. 476. ex Rom. et Schultes, syst. 5. p. 523.) This species is not described.

**Stone-crop-leaved Paronychia.** Pl.

† Plants referred by authors to the genus Paronychia, which are to be excluded.

1 P. lanuginosa (Poir. suppl. 4. p. 302.) is probably a species of Gomphrena.

2 P. Bengalensis (Rom. et Schultes, syst. 5. p. 521. but not of Juss.) is probably a species of Achynanthus.

3 P. tenella (Hortul. or Illécebrum tenellum of Desf.) is perhaps a species of Alternanthera.

4 P. dichotoma (D. C. in Lam. dict. but not of Nutt.) is Herniaria dichotoma.

5 P. subulata is Polycarpacea spadicea.

6 P. linearifolia is now Polycarpacea linearifolia.

**Cult.** All the species of this genus are well adapted for ornamenting rock-work, from their dwarf stature, and generally trailing habit. Most of them, however, grow best in small pots in sand and loam, filling the pots half way with sherds; and they are easily increased by dividing the plants at the root, or by cuttings under a hand-glass, or by seeds. The seeds of the annual species only require to be sown in the open border or on rock-work. Some of the species are marked green-house and frame; these require to be protected from frost in winter.

**VIII. PENTACÉNA** (from *pente, pente*, five, and *akaima*, akaina, a thorn; in reference to the 5 spiny lobes of the calyx). Bartling in reliq. Hanek. 2. p. 5. t. 49. f. 1.

**LIN. SYST. Pentândria, Digynia.** Calyx 5-parted; segments very unequal: 3 outer ones spiny at the apex, and woolly on the margins: 2 inner ones much shorter, boat-shaped, and armed on the back. Stamens 5, without any sterile filaments; anthers 2-celled. Stigmas 2, short. Fruit 1-seeded.

1 P. ramosissima (Hook. et Arn. in bot. misc. 3. p. 248.) stems trailing, woolly; leaves linear-subulate, mucronate; lobes of calyx unequal, all linear and hood-formed, ending each in a very long point on the back; flowers sessile, axillary, crowded. \( \mathcal{L} \). C. Native of Brazil, on the confines of the province of Rio Grande de St. Pedro do Sul, and of the province of Cisplatín; and among rocks about Monte Video; of Chili, in Las Acharas, province of Cordova, Valparaiso, and Buenos Ayres; also of Mexico, at the foot of Mount Orizaba. Paronychiea ramosissima, D. C. prod. 3. p. 372. mem. paron. p. 12. t. 4. Loeflingia ramosissima, Weimann in bot. zool. p. 608. Pent. polychenomoides, Bartl. in Presl. reliq. Hanek. 2. p. 5. t. 49. f. 1. Stipulas scarious, woolly.

Much-branched Pentacéna. Pl. tr.

**Cult.** See Paronychiea for culture and propagation.

**IX. CARDIONEMA** (from *kapía, cardia*, the heart, and *VENA, nema*, a filament; in reference to the sterile filaments being obcordate). D. C. prod. 3. p. 372.—Bivona, Moc. et Sesse, fl. mex. ined. but not of D. C. nor Spreng.

**LIN. SYST. Pentandria, Digynia.** Calyx 5-parted; lobes conniving, rather coloured inside, and rather concave, drawn out on the back to the apex in a long straight conical horn each. Petals wanting. Stamens 5, opposite the lobes of the calyx, and inserted in their base; 2 of which are sterile, obcordate, and flat: and 3 fertile, obcordate at the base, bearing each a slender antheriferous filament in the recess; anthers roundish, 2-celled. Styles 2, hardly concave at the base, long, revolute. Fruit 1-seeded, ovate-oblong.—A small many-stemmed herb. Leaves opposite, crowded, rather distich, linear, acute. Flowers sessile, axillary, small, greenish white, each furnished with 5 bracteas, 4 of the bracteas linear and entire, the fifth larger and serrulate.

1 C. multicaule (D. C. prod. 3. p. 373. mem. par. t. 1.) \( \mathcal{L} \). G. Native of Mexico. Bivona multicaulis, Moc. et Sesse, fl. mex. icon. ined.

Many-stemmed Cardionema. Pl. small.

**Cult.** This plant is to be cultivated and propagated in the same manner as that recommended for the species of Paronychiea. It will require protection in winter, by placing it in a frame or green-house.

**Tribe III.**

**POLYCARPEÆÆ** (this tribe contains plants agreeing with Polycarpacea in important characters). D. C. prod. 3. p. 373. Calyx 5-parted (f. 23. a.) Petals 5 (f. 23. d.) or wanting. Stamens 1-5, inserted in the bottom of the calyx. Styles 2-3, sometimes distinct from the base, and sometimes connected. Capsule 1-celled (f. 23. e), many-seeded. Seeds fixed to the central placenta.—Herbs or subshrubs. Leaves opposite. Stipulas scarious. The stamens in some of the genera are nearly hypogynous, as in Polycarpus, and altogether so in Polycarpacea, Stipulicida, and Ortégia, and therefore these genera verge very closely on the order Caryophyllaceae, but are distinguished from them in the presence of stipulas, and number of stamens: the habit agrees with Paronychieae.

X. POLYCARPEÆA (from *polý, polý, many, and *kapía, karpos, a fruit; a name, however, only indicating its affinity with Polycarpus). Lam. journ. hist. nat. 2. p. 25. t. 25. D. C. prod. 3. p. 373. St. Hil. fl. bras. 2. p. 182.—Hageà'æ, Vent. tabl. 2.

8
PARONYCHIEÆ. X. POLYCARPEA.

P. 240.—Mollia, Willd. hort. berol. 1. p. 11.—Lahaya, Roem. et Schultes, syst. 5. p. 402.—Hyala, Lher. mss.—Anthyllis species, Alans.—Pölia, Lour.

Lin. syst. Pentándria, Monógyána. Calyx more or less deeply 5-parted, permanent; lobes membranous, flatish, neither keeled nor mucronate. Petals 5, inserted in the bottom of the calyx, and opposite its lobes. Style one, 3-furrowed at the apex. Capsule 1-celled, trigonal, 3-valved, many-seeded. Seeds rather reniform.—Bracted dichotomous herbs. Leaves opposite, stipulate, young ones disposed in fascicles in the axils of the old leaves. Flowers cyose; cyces usually forming a terminal corymb.


2 P. latifolia (Poir. 1. c.) stems suffruticusae, diffuse; leaves obvoate, mucrinate by an awn; cauline leaves usually 6 in a whorl, those of the branches opposite; cyces terminal, corymbose, capitately; stipulas, bracteas, and calyces scarious, and acuminate. 2 F. Native of Tenerife, among rocks in woods. Mollia latifolia, Willd. enum. 1. p. 269. Schrank, pl. rar. hort. mon. t. 29. Lahaya latifolia, Schultes, syst. 5. p. 405. Flowers white.


Tenerife Polycarpacea. Pl. 1/2 to 3/4 foot.


5 P. Memphitica (Delil. fl. egypt. p. 67. t. 24. f. 2.) stems herbaceous, diffuse, branched, villous; leaves usually 6 in a whorl, oval-oblong, narrowed into the petiole; cyces terminal, few-flowered; calyx pubescent, with membranous margins. 2 H. Native of fields about Cairo, and along the banks of the Nile, and in its islands. Style very short; stigmas 3, nearly sessile. Petals quite entire. This plant, although very distinct, is joined with P. gnaphalodes by Spreng.

Memphitic Polycarpacea. Pl. diffuse.

6 P. fragilis (Delile, fl. egypt. p. 65. t. 24. f. 1.) stems herbaceous, prostrate, brittle; leaves opposite, aggregate, lanceolate, mucronate, with replicate edges; cyces corymbose, terminal, many-flowered. 2 F. Native of Egypt, in the deserts about the pyramids, &c. Mollia fragilis, Spreng. syst. 1. p. 795. Style filiform, length of petals. Seeds 8-10. Flowers white.

Var. a. incana (D. C. prod. 3. p. 374.) stems and leaves clothed with grey tomentum.

Var. b. virga (D. C. l. c.) leaves glabrous.—Corrigiola réps, Forsk. descr. p. 207. ex Delisle.

Brittle Polycarpacea. Pl. prostrate.

7 P. stellata (D. C. prod. 3. p. 374.) stems diffuse, much branched, suffruticosae; leaves usually 6 in a whorl, linear, flat, and are, as well as the branches, rather pilose; cyces terminal, many-flowered, corymbose; calyxes scarious. 2 F. Native of Guinea. Achyránthes stellata, Willd. spec. 1. p. 1195. Mollia stellata, Willd. hort. berol. Lahaya stellata, Schultes, syst. 5. p. 403. Root perpendicular, simple. Habit of P. Tenerife, but differs in the leaves being linear.


8 P. corymbosa (Lam. ill. no. 2798.) stems erect, herbaceous, tomentose; branches divaricate; leaves usually 6 in a whorl, linear, awned; cyces corymbose, loosish; calyxes scarious, acuminate. 2 F. or 0. Native of Ceylon. Achyránthes corymbosa, Lin. spec. p. 296. (exclusive of the synonyme of Plukenate, which is referrible to Celosia Monsínice). Willd. spec. 1. p. 1196. (exclusive of the synonyme of Loureiro, which is referrible to Polycarpacea spadicea). Lahaya corymbosa, Schultes, syst. 5. p. 404. Pol. Indica, Lam. journ. hist. nat. 2. p. 8. Celosia corymbosa, Roxb. fl. ind. 1. p. 310.—Boeic. mus. 44. t. 39. good.—Burm. zeyl. t. 65. f. 2. Flowers white.


9 P. spadicea (Lam. l. c. no. 2799.) stems ascending, diffuse, branched, suffruticosae at the base; branches tomentose; leaves linear, bluntnose, when young rather tomentose; cyces terminal, corymbose; calyxes scarious. 2 H. 2 S. Native of the East Indies, on the coasts of Malabar and Tranquebar.—Rheed. mal. 10. t. 66. Celosia spadicea, Willd. spec. 1. p. 1200. exclusive of the synonyme of Retz. Mollia spadicea, Willd. hort. berol. Lahaya spadicea, Schultes, syst. 5. p. 405. Pólia arenária, Lour. coch. p. 164. Allied to P. corymbosa, but more diffuse in habit; leaves broader and shorter, in more distant whors; lobes of calyx less acuminate. Perhaps Paronychia subulata, D. C. in Lam. dict. 5. p. 25. or Illiceburnum subulatum, Pers. ench. 1. p. 261. is referrible to this species.

Chesnut-brown Polycarpacea. Pl. 1 foot, diffuse.

10 P. Brasilienses (Stil. fl. bras. 2. p. 183.) stems erect, puberulous; leaves linear-subulate, with revolute margins, mucronate, puberulous; cyces corymb-formed; calyces lobes very acute, puberulous; petals ovate-ornicular, one-half shorter than the calyx. 2 S. Native of Brazil, in that part of the province of St. Paul called Campos Geraes, near Fazenda de Jaquiraba. Flowers densely clothed with white tomentum. Petals at first white, but at length of a dirty yellow-colour. Root fusiform, with many stems rising from the neck.

Var. b. ramoassina (Stil. Hil. l. c.) stems much branched; leaves setaceous; cyces less; flowers a little smaller than those of the species. Native of Brazil, in the province of Goiyaz, on the sandy Mountain called Serra dos Pyreneos; also on the road to Campo Allegre, in the province of Minas Geraes.

Brazilian Polycarpacea. Pl. 1/2 to 3/4 foot.


N 2
12 P. glabrifolia (D.C. l. c. and mem. par. t. 5.) stems erect, branched, suffruticose; branches pubescent; leaves glabrous, oblong-linear, bluish, twice the length of the stipulas; cymes terminal, dense, many-flowered, in crowded heads. Ψ. Ψ. S. Native of Sierra Leone. This species differs from P. tenifolia in the leaves not being subulate, nor keeled, nor with revolute edges; in the stipulas being large, and in the flowers being capitate.

Glabrous-leaved Polycarpæa. Pl. 1 foot.

13 P. linearifolia (D.C. l. c. and mem. par. t. 6.) stems erect, or somewhat ascending at the base, branched; branches pubescently hairy; leaves linear, elongated, pubescent, 3 times longer than the stipulas; cymes crowded into a dense terminal roundish head. Ψ. F. Native of Senegal. Parochia linearifolia, D.C. in Lam. dict. s. p. 26. Alternanthera erécta, Richb. in Sieb. pl. exsic. seneg. no. 60. Habit of Celosia, but the characters are those of Polycarpæa.

Linear-leaved Polycarpæa. Pl. 1 foot.

14 P. frankenholzi (Presl in Henk. reliq. 2. p. 6.) stems much branched, diffuse, procumbent, roughish; branches opposite; leaves opposite, oblong, obtuse, clothed with rough pubescence; flowers in dichotomous corymbose panicles; sepals bluntish, pilose. Ψ. H. Native of the Island of Luzon.

Frankenlia-like Polycarpæa. P1. procumbent.† Species not sufficiently known.

15 P. carnosa (Chr. Smith in Buch. can. p. 142.) stem subrubby; leaves 6 in a whorl, fleshy; lower ones spatulate, upper ones lanceolate; stipulas very short, jagged. Ψ. G. Native of the Canary Islands.

Fleshy Polycarpæa. Shrub ¼ foot.

16 P. smithii (Link in Buch. can. p. 142.) leaves 6 in a whorl, linear, glabrous, obtuse; stipulas very short; panicle dichotomous; branchlets divaricate; bracteae obtuse, shorter than the calyx. Ψ. G. Native of the Canaries, in the island of Palma, at Cumbre de Caldera. Very nearly allied to P. stelátala but differs in the panicle.

Smith’s Polycarpæa. Pl. 1/2 to 1/3 foot.

17 P. ? minuartioides (D.C. prod. 3. p. 375.) stem subrubby, branched; branches tomentose, leafy subulate, crowded; cymes axillary, few-flowered. Ψ. F. Native of the south of Spain. Mollis minuartioides, Spreng. mant. 1. p. 37, ex Schultes. Lahaya minuartioides, Schultes, syst. 5. p. 496. This is a very doubtful species, being omitted in Spreng. syst.

Minuartia-like Polycarpæa. Fl. Ju. Aug. Clt. 1826. Pl. ½ fl. 15 P. ? depressa (D.C. l. c.) stems herbaceous, depressed, diffuse; leaves opposite, crowded into something like whorles, wedge-shaped; stipulas 4-cleft; flowers terminal, triandrous; calyx fleshy; petals linear, 4-toothed at the apex. Ψ. Native of the East Indies. Phannacemum dépressum, Lin. mant. p. 564. Læflingia Indica, Retz, ind. p. 48. Roxb. fl. ind. 1. p. 169. This plant is certainly neither a Læflingia nor a Phannacam; from the stipulas and many-seeded capsule, it agrees more nearly with Polycarpæa, but differs in the fleshy calyx, and triandrous flowers; perhaps it is more nearly allied to Pollichia, but the calyx in this plant is said to be 5-parted.

Depressed Polycarpæa. Pl. depressed.

Cult. The seeds of the annual species of Polycarpæa should be sown on a hot-bed early in spring. The perennial and shrubby species being either greenhouse, or frame plants, require to be kept in their respective places; they are easily increased by cuttings under a hand-glass, those of the stave species in heat.


Lin. syst. Triandria, Monogynia. Calyx 5-parted; lobes oval, with membranous margins. Petals 5, cuneate-oblong, entire. Stamens 3, inserted with the petals into the disk or torus. Style short; stigmas 3. Capsule 1-celled, 3-valved. Seeds few, fixed by funiculi to the central placenta.—Small perennial dichotomous herbs, native of North America. Radical leaves almost like those of Polycarpæa Tenérfíferæ, ovate, petiolate; cauline leaves sessile, opposite, small. Stipulas jagged. Flowers small, tender, terminal. An intermediate genus between Polycarpæa and Polycarpæa, from the sepals being flatish as in Polycarpæa, and in the stamens being 3, as in Polycarpæa; but differs from both in the petals and stamens being expressly hypo-gynous according to Richard in Michx. l. c.; the genus perhaps once thought to have been placed in Caryophyllæa.


Setaceous Stipulicida. Pl. ½ foot.

Cult. See Orégia, p. 93. for culture and propagation.

XII. BALAR'UDIA (in honour of M. Balard, de Montpellier, who was the first to detect a new chemical principle called brome). St. Hil. fl. bras. 2. p. 160.


An annual, branched, dichotomous herb, with opposite, stipulate leaves, and cymose flowers.

1 B. Plate'sis (St. Hil. fl. bras. 2. p. 181. t. 111.) leaves linear, about equal in length to the internodes, mucronulate; cymes branched, many-flowered. Ψ. H. Native of Brazil, in the southern part of the province of Cisplatine, near Povo de Canelones; and in the western part near Pueblo de las Viboras; also of Buenos Ayres.

Plate Balardia. Pl. ½ foot.

Cult. The seeds of this plant should be sown on a hot-bed in spring, and the plants may be planted out in the open border in the month of May, in any warm dry situation. Not worth cultivating, excepting in a botanic garden.


Lin. syst. Triandria, Monogynia. Calyx deeply 5-parted, permanent; lobes thickened in the middle, keeled. Petals 5, inserted in the bottom of the calyx. Stamens 3, inserted with the petals; filaments dilated at the base, joined to the petals and together at the base. Style 1, tridid; lobes papiliferous inside. Capsule 3-valved, many-seeded; valves membranous. Seeds fixed to the central placenta, cylindrical. Embryo in the middle of fleshy albumen, not at one side as in Polycarpæa. A trailing branched herb, with opposite stipulate leaves; young leaves or abortive branches in fascicles in the axils of the older leaves. Cymes branched, many-flowered.

1 A. frankenholzi (St. Hil. l. c. t. 112.) stems trailing, branched; leaves lanceolate, bluish, narrowed to the petiole, pubescent; cymes many-flowered; segments of calyx obtuse, pubescent; petals and stamens one half shorter than the calyx. Ψ. H. Native of Brazil, on the sandy banks of the rivers Parahyba, Rio Doce, Jiquitinohonha, Rio de St. Francisco, &c. Flowers white.
Frankenia-like Aversia. Pl. trailing, ½ foot. Cult. See Balardia above for culture and propagation.


Lin. syst. Tridonia, Monogynia. Calyx of 5 sepals, or 5-parted; sepals erect, oblong, a little keeled. Petals wanting. Stamens 5, 3 of which are fertile, inserted in the torus in front of the sepals; the other 2 almost vanished, or small, sterile, and scale-formed. Ovarium ovate. Style 1, capitata at the apex, or bifid. Capsule 3-valved. Seeds numerous, fixed to the central placenta. Embryo straight, placed on the back of the albumen. Erect, much-branched herbs. Leaves opposite, linear, with 2 black dots at the sides, from which the stipulas have fallen. Cymes dichotomous, many-flowered. Flowers greenish-white. Stamens hypogynous, as in Stipulicida and Polycarpaea.


Spanish Ortega. Fl. Ju. Jul. Clt. 1768. Pl. ½ foot. Cult. The species thrive best in light soil; and are increased by cuttings or seeds. They are well fitted for rock work, or to be grown in small pots among other alpine plants.


Lin. syst. Tri-Pentandria, Trigynia. Calyx deeply 5-leaflet (f. 23. a), permanent; segments concave, keeled, mucronate at the apex. Petals 5 (f. 23. b), emarginate, inserted in the tube of the calyx. Stamens 5-5, inserted in the tube of the calyx. Style trifid; lobes papilliferous inside. Capsule 1-celled, 3-valved (f. 23. e), many-seeded. Seeds nearly ovoid, a little curved, fixed to the central placenta. Annual, branched, dichotomous herbs. Leaves opposite, or 4 in a whorl; young ones usually disposed in fascicles in the axils of the old leaves. Flowers in cymose corymbs. Stipulas and bracteas small, scarious. This genus agrees with Adenium, but differs in the stamens being equal in number to the petals, not in Carpophyllece, double that number.

* Flowers trianundrous.


Apures All-seed. Pl. ½ to ½ foot. 2. P. Tetraphirylum (Lin. fil. suppl. 116.) flowers trianundrous; petals emarginate; lower leaves 4 in a whorl; rameolous ones opposite, obvate-oblong, rounded at the apex, mucronate, shorter than the internodes. 3. H. Native of Europe, Canary Islands; Brazil on walls, about the town of St. Paul. In England, on the west coast; on various parts of the coast of Devonshire, Somersetshire, and Portland Island.—Smith, engl. bot. t. 1031. Krock. fl. siles. t. 42. Mollugo tetraphylla, Lin. spec. 1. p. 89.


* * Flowers pentanundrous.

3 P. Alsenefolium (D. C. prod. 3. p. 376.) flowers pentanundrous; petals nearly entire; leaves oval, rather fleshy; flowers crowded into terminal cymes. 2. H. Native of Sicily, France, between Cetta and Narbonne, and also of the Cape of Good Hope and New Holland, on the sandy sea-coast. Bosc. sie. p. 71. t. 38. Hagea alsinefolia, Biv. manip. 3. p. 7. Lahaye alsinefolia, Schultes, syst. 5. p. 405. Möllö alsinefolia, Schultes, syst. 1. p. 795. Holostema tetraphyllum, Thunb. fl. cap. p. 120. Polycarpón spec. Sieb. fl. nov. holl. no. 570. Illicee-brum alsinefolium, Lin. mant. 51.? Very like P. Tetraphyllum, but differs in the leaves being smooth and oval; and in the flowers being pentanundrous, larger, fewer, and more crowded.

Chickweed-leaved All-seed. Fl. Ju. Aug. Clt. 1817. Pl. ½ foot. 4. P. Peploides (D. C. prod. 3. p. 376.) flowers pentanundrous; petals quite entire; leaves opposite, obovate; flowers crowded into terminal cymes. 2. F. Native of Sicily; France about Perpignon. Hagea polycarpoides, Biv. manip. 2. no. 3. Möllö Polycarpón, Spreng. nov. prod. p. 28. Lahaye polycarpoides, Schultes, syst. 5. p. 404. Arenaria peploides, Lapeyr. abr. p. 251. but not of Lin. Very like P. Tetraphyllum, and, as in it, the leaves are sometimes 4 in a whorl; but besides these characters, it differs in the leaves being rounder; cymes denser; flowers a little larger, and pentanundrous, &c.

Water Purslane-like Polycarpón. Pl. ½ foot. Cult. The seeds of the annual species of the genus only require to be sown in the open border in spring. The last species being perennial, should be grown in a small pot, and placed among other alpine plants.


Greenish-flowered Cerdia. Pl. pr. 2. C. Purpurea'scens (Moc. et Sesse, 1.c.) leaves 4 together in
a kind of whorl.  "G.  Native of Mexico.  Flowers purplish inside.

_Purplish Cerdia._  Pl. pr.

_Cult._  These plants will grow well in a mixture of loam and sand, and are easily increased by dividing at the root, by cuttings, or by seeds.

**Tribe IV.**

**POLLYCHIA**E (this tribe only contains the genus *Pollychia*).  D. C. prod. 3. p. 377.  Calyx 5-toothed; tube urceolate.  Stamens 1-2, inserted in the throat of the calyx.  Petals wanting.  Stigma bifid.  Fruit or utriculus valveless, 1-seeded.  Bracteas and calyx becoming large and luscious after flowering, and forming something like a berry.—Saufruticose herbs, with opposite, subsessile stipulaceous leaves.


_Lin. syst._  _Monandria; Monogynia._  Calyx campanulately urceolate, 5-toothed, permanent.  Petals wanting, unless the scales at the throat are to be taken for them.  Stamens 1 (ex Mœch. rarely 2) inserted in the throat of the calyx.  Style filiform; stigma bifid.  Capsule valveless, 1-seeded, inclosed in the thickened tube of the calyx.—A suffruticose branched herb.  Leaves linear, opposite, but at first sight appear verticillate, in consequence of 2 rameal leaves rising in each axil, furnished with scarios acute stipulas.  Flowers small, aggregate, sessile, bracteate.


_Cult._  The seeds of _Pollychia_ must be raised on a hot-bed; and when the plants are 2 inches high, they may be planted out singly into pots, placed among the greenhouse plants, and afterwards treated like them.

† Genera placed in _Paronychiæ_, but are not sufficiently known.

**XVIII. LITHOPHILA** (from λιθος, lithos, a stone, and φιλεω, philoe, to love; this plant delights to grow among stones).  Swartz, fl. ind. occ. 1. p. 47.  t. 1.  D. C. prod. 3. p. 380.

_Lin. syst._  _Diandria; Monogynia._  Calyx profoundly 3-parted, acute.  Petals 3, ovate-lanceolate.  Scales, nectaries, or abortive stamens 2, opposite the segments of the calyx.  Stamens 2, at one side of the ovarium.  Style thick, bluntly emarginate at the apex.  Fruit unknown.—A very minute glabrous herb.  Leaves stem-clasping, linear, obtuse.  Flowers white, crowded.

1 L. muscoides (Swartz, 1. c. p. 48.).—Native of the desert island of Navaza, among rocks.

_Mass-like Lithophila._  Pl. 1 inch.

_Cult._  This plant is not worth cultivating, unless in botanic gardens.  Should it ever be introduced to our gardens, we would recommend its being grown in a pot filled with broken stones, having the crevices filled with vegetable mould.  It may probably be propagated by seeds.

**XIX. SELLOWIA** (in honour of Frederick Sello, a German botanist, who was lately drowned in some creek of the Amazon; and who has sent home many fine collections of Brazilian plants).  Roth. nov. spec. p. 162.  D. C. prod. 3. p. 380.

_Lin. syst._  _Pentandria; Monogynia._  Calyx urceolate, 5-cleft, membranous, 10-ribbed; lobes short, lanceolate; ribs bearing alternately a petal and a stamen.  Petals 5, oval, alternating with the calycine lobes.  Stamens 5, fixed in the middle of the calycine lobes, and shorter than them; anthers didymous.  Style 1; stigma obtuse.  Capsule 3-valved, 1-celled, 1-seeded.—A quite glabrous herb, with the habit of _Illicicnum verticillatum_.  Leaves opposite, oblong-oval.  Flowers 1-2 in the axils of the leaves, small, white, and somewhat pedicellate.  It is not known whether the leaves are stipulaceous or naked.

1 S. vulgaris (Roth. 1. c. p. 163.).  Native of the East Indies, in bogs.

_Bog Sellobia._  Pl. proc.

_Cult._  Place a pan of water under the pot in which this plant is grown.


Flowers hermaphrodite.  Calyx 4-5-parted (f. 24. a.).  Stamens from 1 to 10, inserted in the orifice of the tube (f. 24. a.).  Ovarium simple, 1-seeded.  Styles 2 (f. 24. e.) or 1, emarginate at the apex.  Fruit a membranous utricile, inclosed within a hardened calyx.  Seed hanging from the apex of a funicle, which arises from the bottom of the corn.  Embryo cylindrical, curved round farinaceous albumen.—Small herbs.  Leaves opposite, without stipulas.  Flowers axillary, sessile.  This order has been referred by De Candolle to _Paronychiæ_, from which it differs in the absence of petals and stipulas, and therefore appears to constitute a distinct order, more nearly related to _Chenopodæa_ than _Paronychiæ_, from which the plants chiefly differ in the indurated tube of the calyx, from the orifice of which the stamens proceed, and in the number of the latter exceeding that of the divisions of the calyx.  The tribe _Minuartiæa_ is probably not distinguishable from _Scleranthæa_, notwithstanding the supposed presence of petals, which would perhaps be more properly called abortive stamens.  All the plants contained in this order are uninteresting weeds, of no known use.

_Synopsis of the genera._

**Tribe I.**

**Scleranthæa.**  Calyx 4-5-toothed (f. 24. a.), with an urceolate tube.  Petals none.  Stamens 1-10, inserted in the throat of the calyx (f. 24. a.).  Styles 2 (f. 24. e.) or 1, emarginate at the apex (f. 24. b.).  Fruit an utricile, covered by the indurated tube of the calyx, 1-seeded.  Seed hanging by a funicle, which arises from the bottom of the capsule.

1 MNIA^RUM._  Calyx 4-cleft, with an urceolate tube.  Stamens 1.

1. Styles 2.

2 Scleranthus.  Calyx 5-cleft (f. 24. a.), with an urceolate tube.  Stamens from 2 to 10.  Styles 2 (f. 24. e.).

3 Guilleminëa.  Calyx 5-cleft, with a campanulate tube.  Stamens 5.  Style 1, emarginate at the apex.

**Tribe II.**

**Querbachæ.**  Calyx 5-parted.  Petals none.  Stamens 10,
inserted in the bottom of the calyx. Capsule 3-valved. Seed hanging from a long funicle, which arises from the centre of the cell.

4 *Que'ria*. The character is the same as that of the tribe.

**Tribe III.**


6 *Leplin'sia*. The 3 outer lobes of calyx bisetose at the base. Style 1, trifid at the apex.

**Tribe I.**

**Sclerantheae** (plants agreeing with *Scleranthus* in important characters). Paronychtiae, Tribe V. Sclerantheae, D. C. prod. 3. p. 377. Calyx 4-5-cleft, with an urceolate tube. Petals wanting. Stamens 1-10, inserted in the throat of the calyx. Styles 2 or 1, emarginate at the apex. Fruit a 1-seeded membranous utricle, covered by the indurated tube of the calyx. Seed hanging from a long funicle, which arises from the bottom of the cell, and which is recurved at the apex.—Herbs, with opposite exstipulate leaves.


**Lin. syst. Monandria, Digynia.** Calyx 4-cleft, permanent, with an urceolate tube. Petals wanting. Stamens one, inserted in the throat of the calyx. Ovary free, 1-seeded. Styles 2. Capsule valveless, membranous, covered by the indurated tube of the calyx. Seed one, as in *Scleranthus*—Australian herbs. Leaves opposite, subulate. Peduncles axillary, bearing 4 bracteas and 2 flowers at the apex, becoming after flowering elongated and stiff. The ovary, according to Forster, is sometimes 2-seeded.

1 M. *Bi'llium* (Forst. 1. c.) stems tufted; branches quite glabrous; leaves denticulated at the base, the rest quite entire. *H.* G. Native of Van Diemen's Land, Maria Island in New Holland, New Zealand, and of the Straits of Magellan. R. Br. prod. p. 412. Forst. comm. goett. 1789. t. 1. M. pedunculatum, Labill. nov. holl. 1. t. 2. Ditóca muscósia, Gartn. 1. c.


2 M. *Fasciculata'm* (R. Br. prod. p. 412.) stems many from the same neck, procumbent, branched; branches clothed with fine pubescence; leaves denticulated their whole length. *G.* G. Native of Van Diemen's Land.

*Fascicled Mniarum*. Pl. procumbent.

**Cult.** A mixture of loam, peat, and sand, will suit the species of *Mniarum*, and they may be propagated either by seeds or cuttings.


**Lin. syst. Penta-Decandria, Digynia.** Calyx 5-cleft (f. 24. a.), permanent, with an urceolate tube. Petals wanting. Stamens inserted in the throat of the calyx, 10 (f. 24. a.), rarely 5 or 2. Ovary free, 2-seeded. Styles 2 (f. 24. c.). Capsule very thin, valveless, covered by the indurated tube of the calyx. Seed one, hanging from a long funicle, which arises from the bottom of the capsule, and is recurved at the apex.—Small herbs, with opposite linear leaves, which are rather connate at the base. Flowers small, greenish white, sessile in the axils of the forks of the branches.

1 S. *Per'ens* (Lin. spec. 580.) flowers decandrous; lobes of fructiferous calyx closed, obtuse, with white and membranous edges. *H.* Native of Europe and the Levant, in dry sandy fields. In England, on high open sandy fields, rare; as about Eldon, Suffolk, and plentifully near Snettington, Norfolk; near Bury St. Edmunds; and Scotland, on a gravelly bank near Forfar. Schkuhr, handb. t. 120. Fl. dan. t. 563. Smith, engl. bot. t. 352.—Ray, syn. p. 160. t. 5. f. 1. The Polish cochineal (*Coccus Polydennis*) is found upon the roots in the summer months.


2 S. *Poly'ca'rpus* (Lin. spec. p. 581.) flowers subdecandrous; lobes of the calyx when in fruit rather spreading, and without any margin, acute, shorter than the tube. *H.* Native in sandy fields about Montpelier, but never gathered elsewhere in France; also of Italy, according to Linneus.—Column. esphr. 1. t. 294. It differs from *S. annum* at first sight, in the flowers being one-half smaller; but it is probably merely a variety of it.

*Many-fruited Knawel*. Pl. procumbent.

3 S. *A'nummus* (Lin. spec. p. 580.) flowers subdecandrous; lobes of fructiferous calyx spreading, immarginate, acutish, about equal in length to the tube. *H.* Native of Europe, the Levant, also of North America, in dry sandy cultivated fields; plentiful in some parts of Britain. Fl. dan. 504. Smith, engl. bot. t. 531. Knawel annummus, Scop. carp. p. 501. There is a variety, according to Leers, which has only 5 or 7 stamens to each flower. The Swedes and Germans receive the vapour arising from a decoction of it into their mouths to cure the tooth-ache.


4 S. *His'atus* (Presl. del. p. 65.) flowers with 5 petals and 5 stamens; calyxes conniving, obtuse; stamens equaling the calyx in length; anthers hairy; stigmas pubescent. *H.* Native on Mount Etna, in the open regions. Leaves subulate, glabrous. Flowers capitulate.

*Hairy Knawel*. Pl. prostrate.

5 S. *Pun'gens* (R. Br. prod. p. 412.) flowers pentandrous, particularly having 5 fertile and 5 sterile stamens; lobes of fructiferous calyx spreading; leaves subulate, triquetrous, mucronate, pungent, rough on the keel and margins. *H.* Native of New Holland, on the south coast.


6 S. *Di'nder* (R. Br. prod. p. 412.) flowers diandrous; stamens mixed with scales; lobes of fructiferous calyx erect; leaves subulate, keeled, mucronulate, almost naked on the keel and margins. *H.* Native of Van Diemen's Land.

*Diandrous Knawel*. Pl. procumbent.

**Cult.** The seeds of these plants only require to be sown in the open border. None of the species are worth cultivating except in botanic gardens.

LIN. SYST. Pentándria, Monógynía. Calyx 5-cleft, with a campanulate tube; lobes equal. Petals wanting. Stamens 5, inserted in the top of the tube, opposite the calyce lobes, short: anthers 1-celled. Style 1, somewhat emarginate at the apex. Fruit an indehiscent 1-seeded utricle, covered by the calyx. Seed hanging by a funicle, which rises from the bottom of the capsule.—A South American trailing herb, with opposite branches. Stems woolly. Leaves glabrous, oblong, opposite, exstipulate, but the petioles are connate at the base. Flowers capitate, axillary. Bracteas under each flower.

1 G. I'llECEBRiODiES (H. B. et Kunth, l. c.) \quad G. Native of South America, near Quito, in the valley of St. Jago. Illecebrum-like Guilleminia. Pl. tr.

Cult. Any common light soil will suit this plant, and it may be propagated from cuttings or seeds.

Tribe II.

QUERIA'CEÆ (this tribe contains nothing but the genus Queria). Calyx 5-parted. Petals wanting. Stamens 10, inserted in the bottom of the calyx. Capsule 3-valved. Seed 1, on a long funicle, which rises from the centre of the capsule.—Herbs, with opposite exstipulate leaves.


LIN. SYST. Decândria, Trigynia. Stamens 10, slender, unequal, sometimes 5 of which are sterile. Styles 3, very slender. Capsule membranous, 1-celled, 3-valved. Seed reniform when mature.—Small stilt annual herbs. Leaves opposite, crowded, sessile, connate, recurved at the apex. Flowers in the axils of the upper branches and superior leaves, sessile, solitary. This genus is hardly distinct from Minuartia, unless in the styles being 3; in the valves being 3, and form of the seeds, which are evidently solitary from abortion.

1 Q. HisP'Nica (Lin. spec. p. 182). \quad O. H. Native of Spain, in dry exposed places. Quer, fl. esp. 6. t. 15. f. 2. Orocent. t. 15. f. 1.


† A doubtful species.


Trichotomus Queria. Pl. ¼ foot.

Cult. The seeds only require to be sown in the open ground, in any dry situation.

Tribe III.


LIN. SYST. Pentândria, Trigynia. Sepals 5, hardly joined at the very base, quite entire. Petals or abortive stamens 5, small, alternating with the sepals. Stamens 5, opposite the sepals, and longer than the petals. Styles 3, filiform. Capsule 1-celled, 3-valved. Seeds few, fixed to the central axis.—Small annual herbs. Leaves opposite, sessaceous, 3-nerved at the base, quite entire. Flowers in the forks of the branches, and in the axils of the upper leaves, solitary, small, sessile, or on short pedicels; constituting a leafy, dense, dichotomous cyme. Petals bifid, or rather nectaries. (ex Lœfl.) Stamens 10, 5 abortive. (Steven.) Petals and stamens 10. (St. Hil.) According to several specimens examined, the stamens are 10, and the 5 alternate ones are sometimes converted into petals. The genus differs from Loeflingia in the sepals being quite entire, and from Queria in the fruit being many-seeded.

1 M. Campe'stris (Lœfl. itin. p. 122.) flowers distinctly pedicellate, equal in length, or a little longer than the floral leaves; sepals very unequal, 3 large and 2 smaller. \quad O. H. Native of Spain, in dry sandy fields. Habit almost of Bufonia. Act. holm. 1758. t. 1. f. 3.


2 M. Dichó'roma (Lœfl. l. c. p. 121. t. 1. f. 3.) flowers almost sessile, in fascicles, shorter than the floral leaves; sepals nearly equal; mucrone of leaves oblique. \quad O. H. Native of Spain, on hills. Act. holm. 1758. t. 1. f. 5. Plant stiff, dusky.

Dichotomous Minuartia. Fl. Ju. Jul. Cht. 1771. Pl. ½ to ¼ ft. 3 M. Montá'na (Lœfl. l. c. p. 122. t. 1. f. 4.) bundles of flowers about equal in length to the bracteae; sepals nearly equal; mucrone of leaves straight. \quad O. H. Native of Spain, Tauria, and Iberia, on dry hills.—Bieb. fl. taur. 1. p. 90.


LIN. SYST. Pentândria, Monogyûnia. Sepals 5, connected at the base, 3 outer ones bisetose at the base. Petals 5, small, conniving, inserted in the bottom of the calyx. Stamens 5, alternating with the petals, or 3, 2 of them being abortive! Style 1, trifid at the apex, or divided into 3 from the base. Capsule 1-celled, 3-valved. Seeds numerous, fixed to the central placenta.—Small, annual herbs. Leaves opposite, exstipulate, margined on both sides at the base, and appendiculated, these appendages probably supply the place of stipulas. Flowers in the forks of the branches, and in the axils of the upper leaves, solitary, sessile.

1 L. HisP'Nica (Lin. spec. p. 50.) flowers triandrous; style 1, trifid at the apex. \quad O. H. Native of Spain, Mauritania, and South of France, in dry sandy places. Lœfl. itin. t. 1. f. 1. Cav. icon. t. 94. L. prostrâta, Mench. Herb clammy, pubescent. Corolla white; petals obovate, emarginate.


2 L. Pentâ'nda (Cav. icon. 2. t. 148. f. 2.) flowers pentandrous; styles 3, distinct from the base. \quad O. H. Native along
the Mediterranean Sea, in the sand; and of Spain, near Val- lentia. Perhaps sufficiently distinct from the first.

Pentandrous Leflingia. Fl. Ju. Jul. Ctt. 1820. Pl. $\frac{1}{2}$ to $\frac{1}{2}$ ft.

† Species not sufficiently known.


Caspian Leflingia. Pl. $\frac{1}{2}$ foot.

4 L. ? Kefifôlia (Lag. gen. et spec. p. 2.) flowers pentan-
drous; leaves orbicularly reiniiform. O. H. Native of Mexico.

Kidney-leaved Leflingia. Pl. $\frac{1}{2}$ foot.

Cult. The seeds only require to be sown in the open border in any dry lightish soil.


Sepals from 3 (f. 25. c.)—20 (f. 30. a.), more or less united at the base, and therefore the calyx is many-parted (f. 26. b.). Petals equal in number with the sepals (f. 25. b. f. 26. a.), and alternating with them, either distinct (f. 27. b.) or united into a gamopetalous corolla (f. 26. a.), inserted in the bottom of the calyx. Stamens inserted with the petals, either equal to them in number (f. 25. c.) and alternating with them, or twice as many (f. 27. c.); those opposite the petals being shortest, and arriving at perfection after the others; filaments distinct, subulate; anthers oval, 2-celled, bursting lengthwise. Nectariferous scales several, one at the base of each ovarium sometimes obsolete. Ovaria of the same number as the petals, opposite to which they are placed around an imaginary axis, usually distinct, but in some of the anomalous genera rather concrete, all 1-celled, and tapering into 1 stigma each, opening when ripe by a longitudinal chink in front, but in the genus Dimorphæ on the back. Seeds attached to the margins of the suture, in 2 rows, variable in number. Albumen thin, fleshy. Embryo straight in the axis of the albumen, having the radicle directed to the hilum.—Fleshy herbs or shrubs. Leaves entire or pinnatifid, without stipulas. Flowers usually in cymes, sometimes rising in the forks, often arranged unilaterally along the divisions of the cymes.

The plants contained in this order are all remarkable for the succulent nature of their stems and leaves, in which they resemble Càctæe, Portulâceæ, and certain genera of Euphorbiaceæ, &c. but this analogy goes no farther. Their real affinity is probably with Saxifragæ, through Penthorræm, which is not succulent, like the rest of the genera; and with Paronychiacæ, through Tillæ'æ, as De Candolle has remarked. In both those orders, the nectariferous scales of Crassulaceæ are wanting. De Candolle observes (mem. crass. p. 5.) that there is no instance of a double flower in the order, although this might have been expected from their analogy in structure with Caryophyllææ. Sempervivæm tectûræ almost constantly exhibits the singular phenomenon of anthers bearing ovules instead of pollen.

These plants are found in the driest situations, where not a blade of grass nor a particle of moss can grow, on naked rocks, old walls, sandy hot plains, alternately exposed to the heaviest dews of night, and the fiercest rays of the noon-day sun. Soil is to them a something to keep them stationary, rather than a source of nutriment, which in these plants is conveyed by myriads of mouths, invisible to the naked eye, but covering all their surface, to the juicy beds of cellular tissue which lie be-

Refrigerent and abetstringent properties, mixed sometimes with a good deal of acridity, distinguish them. The fishermen of Madeira rub their nets with the fresh leaves of Sempervivæ glutinosum, by which they are rendered as durable as if tanned, provided they are steeped in some alkaline liquor. Malic acid exists in Sempervivæm tectûræ, combined with lime.—Turner, p. 694.

Synopsis of the genera.

Tribe I.

Crassulaææ legûtûm. Carpella distinct, opening when mature by a longitudinal fissure in front (f. 26. b.).

1 Tilæ'æ. Divisions of calyx, petals, and stamens 3-4 (f. 25. a. b. c.). Nectariferous scales none or very small. Carpels 3-4 (f. 25. d.), constricted in the middle, 2-seeded.


3 Dasyste'mon. Sepals 3-7, filiform, unequal, hardly joined at the base. Petals 3-7, often 5, hardly joined at the base, rather revolute at the apex. Stamens 5-7; filaments thick. Carpels 3-5.


8 Cu'rto'gynæ. Calyx 5-parted. Petals united into a 5-


10 Rôcha. Calyx 5-lobed. Petals 5, united into a gamo-
petalous corolla, with a spreading 5-lobed limb. Stamens 5. Glands and carpels 5.

11 Kalosa'sthies. Calyx 5-lobed (f. 26. b.). Petals united into a 5-parted corolla (f. 26. a.), with the tube cylindrical, 2 or 3 times longer than the spreading limb. Stamens 5, inserted in the tube of the corolla. Glands and carpels 5.

12 Kalanchoe. Calyx 4-parted; sepals hardly united at the base. Corolla gamopetalous, with a 4-parted, spreading O.
border. Stamens 8, adnate to the base of the tube of the corolla. Scales 4, linear. Carpels 4; styles filiform.

13 BRYOPHYLLUM. Calyx inflated before flowering, hardly 4-cleft to the middle. Corolla gamopetalous, hypogynous; lobes 4, acute. Stamens 8, adnate to the base of the tube of the corolla. Glands 4.

14 Cotyledon. Calyx 4-parted. Corolla gamopetalous, with a 5-lobed, spreadingly reflexed limb. Stamens 10, adnate at the base to the tube of the corolla. Scales oval. Carpels 5, each drawn out into a subulate style.

15 Pistisia. Calyx 5-parted. Corolla gamopetalous, with a 5-parted spreading border. Stamens 10, adnate their whole length to the tube of the corolla. Scales 5. Carpels 5, ending each in a long filiform style.


17 Echeveria. Calyx 5-parted (f. 27. a); sepals erect. Petals 5, united at the base (f. 27. b), thick, and erect. Stamens 10 (f. 27. c), united to the petals at the base. Scales 5. Carpels 5, each ending in a subulate style.

18 Sedum. Calyx 5-parted (f. 29. a); sepals turgid, leaf-formed. Petals 5 (f. 29. b), usually spreading. Stamens 10 (f. 29. c). Scales 5. Carpels 5.

19 Sempervivum. Calyx 6-20-parted (f. 30. a). Petals 6-20 (f. 30. b). Stamens twice the number of the petals (f. 30. c). Scales toothed or jagged. Carpels equal in number to the petals.

**Tribe II.**

**CRASSULACEÆ ANÓMALE.** Carpels united at the base into a many-celled capsule.


21 Penthórum. Calyx 5-parted. Petals 5. Stamens 10. Scales wanting? Carpels 5, united at the base into a 5-beaked, 5-celled capsule, which is pentagonal at the apex, and opening under the beaks. Seeds small, numerous.

**Tribe I.**

**CRASSULÆÆ** or **CRASSULACEÆ LEGITIMÆ** (this tribe contains the legitimate plants of the order). Carpels distinct; when mature opening on the inside by a longitudinal fissure.


**LIN. SYST.** Tri-Tétrádría, Tri-Tétrágynía. Calyx 3-4-parted (f. 25. a). Petals 3-4 (f. 25. b), oblong, acuminated. Scales none, or very small. Carpels 3-4, somewhat constricted in the middle, 2-seeded.—Small, glabrous, annual herbs, inhabitants of exposed sub-humid places. Leaves opposite. Flowers small, white, for the most part axillary.—Many of the exotic species may probably belong to Bulliardæ.

1 T. MUSCÓSA (Lin. spec. 186.) stems branched at the base, decumbent; leaves connate; flowers axillary, sessile, trifid. O. H. Native of Europe in many places, in dry, barren, sandy, and gravelly soil; plentiful in Britain, on the most barren sandy heaths; frequent in Norfolk and Suffolk. It is a troublesome weed in the gravel walks of Holkham, Bocc. mus. t. 22. Mich. gen. t. 20. Lam. ill. t. 90. D. C. pl. grass. t. 73. Smith, engl. bot. 116. Reich. icon. t. 191. Bocc. sic. t. 29. In exposed situations, this plant becomes reddish; but in that state it is not the T. rubrum of Gouan.


**Simple-stemmed Tillæa.** Pl. 1/2 foot. 3 T. moscháta (D. C. prod. 3. p. 382.) stem prostrate at the base; branches ascending; leaves connate, ovato-oblong; flowers 4-cleft, sessile in the axils of the superior leaves. O. H. Native of the Straits of Magellan, on the mountains; and of the Maclove Islands. Crassula mosscháta, Forst. in act. soci. goett. 9. p. 26. Bulliardæ Magellánica, D. C. bull. philom. no. 49.

**Musk Tillæa.** Pl. prostrate.

4 T. mínima (Miers, chil. 2. p. 530.) stems diffuse, branched; leaves minute, connate at the base, ovato-oblong; flowers 4-cleft, crowded into whorls in the axils of the leaves, on short pedicels; petals 4, acuminate, shorter than the calyx; carpels 1-2-seeded.


**Least Tillæa.** Pl. 1/3 foot. 5 T. verícélílléris (D. C. l. c.) stems prostrate at the base, rooting; branches ascending; leaves opposite, oblong-linear; flowers 4-cleft, crowded in whorls in the axils, some of which are sessile and others pedicellate. O. H. Native of New Holland. Tillæa pedunculátá, Sieb. pl. exsic. nov. holl. no. 173. but not of Smith. Petals acuminated, longer than the calyx. Habit almost of Illécebrum verícélíllérum.

**Verticillate-flowered Tillæa.** Pl. pr. 6 T. pedunculátá (Smith, in Rees’ cyclo. vol. 55. no. 4.) stem erect, simple leaves rather connate, lanceolate, acute; pedicels axillary, solitary, twice or thrice longer than the leaves; carpels truncate at the apex. O. H. Native about Monte Video and Buenos Ayres, in humid places. Bulliardæ Bonanígensis, D. C. bull. philom.

**Peduncled-flowered Tillæa.** Pl. 1/2 foot. 7 T. rubeéscens (H. B. et Kunth, nov. gen. amer. 6. p. 43.) stems branched, prostrate; leaves oblong-lanceolate, ovate, mucronate, rather fleshy, connate at the base; flowers 4-cleft, on long pedicels; petals shorter than the calyx. O. H. Native about Quito, near Alansi. Flowers white. Carpels 2-seeded. T. connáta, Ruiz et Pav. pl. per. 1. p. 70. t. 106. f. a., which was found in Peru, about Chancay, on humid hills, appears to differ from Kunth’s plant in the stems being rather erect.
Reddish Tillæa. Pl. pr. 

Cult. Sow the seeds among gravel, and keep it moist, either in pots or in the open ground.


LIN. SYST. Tétanària, Tetragynìa. Calyx 4-parted. Petals 4, oval or oblong, acute. Stamens 4. Scales 4, linear. Carpels 4, many-seeded.—Small, glabrous, annual, subaquatic herbs. Leaves opposite. Flowers small, white, axillary, sessile, or pedicellate. The parts of the flower are sometimes quinary, and therefore differ from Crássula in the form of the scales, and from Tillæa in the many-seeded carpels, as well as in the number of the parts of the flower.

1 B. Vaillant’n (D. C. pl. grass. t. 74.) stem erect, dichotomous; leaves oblong, acute; pedicels longer than the leaves. O. H. Native of France, at Fontainbleau, in humid shady places, &c. Vaill. bot. t. 10. f. 2. Tillæa aquatìca, Lam. ill. t. 90, but not of Lin. Tillé’a Vaillantûni, Willd. spec. p. 720. Corolla pale flesh-coloured. Stems sometimes erect and sometimes prostrate, generally rooting at the lower nodes. T. prostràta, Poir. dict. p. 7. 674 is perhaps referrible to this plant.


Cult. See Tillé’a for the manner of growing these plants.

III. DASYSTE’MON (from ‘casus, ‘dasyus, thick, and ‘stemon, a stem; in allusion to the thick filaments). D. C. prod. 3. p. 382.

LIN. SYST. Tri-Heptândria, Tri-Pentagynìa. Sepals 3-7, leaf-formed, unequal, hardly united at the base, equalling the corolla in length. Petals 3-7, but generally 5, erect, hardly united at the base, and revolutely spreading at the apex. Stamens 3-7, alternating with the petals, and longer than them; filaments thick; anthers erect. Carpels 3-5.—An Australian herb, covered all over with scaly papule. Root fibrous. Stem branched at the apex. Leaves opposite, connate, linear.


Cult. Sow the seeds of this plant thinly in pots, in gravelly soil.

IV. SEPTAS (from septem, seven; the number 7 prevailing in the fruitication). Lin. gen. 465. Haw. syn. 61. D. C. prod. 3. p. 383.—Crássula species of Thunb. and Willd.

LIN. SYST. Penta-Enneândria, Penta-Enneagynìa. Calyx 5-9-parted, shorter than the corolla. Petals 5-9, stellately spreading. Stamens 5-9; filaments slender, acuminate; scales 5-9, small, roundish. Carpels 5-9, many-seeded.—Herbs, native of the Cape of Good Hope. Roots tuberous, quiescent in winter; tubers roundish; fibres capillary. Stems simple, terete. Leaves of 2 opposite pairs, and the pairs sometimes approximate so near as to make the leaves appear in whorls. Flowers white, disposed in something like umbels. The habit of the plants is referrible to some Sazirfrágea.

1 S. Cape’-ensis (Lin. amoen. 6. p. 87.) leaves roundish, broadly crenated, tapering into the petioles; and the base of the petiole is rather connate; petals spreading. ß. D. G. Native of the Cape of Good Hope. Andr. bot. rep. 90.—Phil. alm. 340. f. 9. bad. Lam. ill. t. 276. Crássula Sétibas, Thunb. fl. cap. p. 291. There are varieties of this plant, differing in the number of the floral parts from 5-9, but generally 7; and with few-flowered or many-flowered umbels; and with leaves more or less stalked, having the crenatures either simple or subcrenated. Flowers white or red.


Cult. A mixture of sand, loam, and peat suit the species of this genus; and they should be watered but sparingly when not in a growing state. They are readily increased by separating the tubers of the roots.


LIN. SYST. Penta’tândria, Pentagynìa. Calyx 5-parted, much shorter than the corolla; sepals flatish. Petals 5, stellately spreading, distinct. Stamens 5; filaments subulate. Scales 5, ovate, short. Carpels 5, many-seeded.—Fleshy shrubs or herbs, generally natives of the Cape of Good Hope. Leaves opposite, quite entire, or sub-crenated. Flowers white, rarely rose-coloured.

§ 1. Laifòlia (from latus, broad, and folium, a leaf; leaves broad). Shrubby. Leaves broader, flat, with the surface and margins smooth.


CRASSULACEÆ. V. CRASSULA.


4 C. aegyptiaca (Lin. fil. suppl. p. 188.) leaves connate, ovate, entire, fleshy, glabrous, silvery; stem shrubby; corymbs subdecumbent. Ἰ. D. G. Native of the Cape of Good Hope. Thunb. fl. cap. p. 289. Flowers white; anthers black. Stem a foot or more in height. Leaves obtuse, with an acumen.

Silvery Crassula. Shrub 1½ foot.

5 C. telephium (Haw. rev. succ. p. 9.) stems herbaceous erect; leaves obovate-oblong, stem-clasping, minutely and punctately crenated below; flowers cymose. Ἰ. D. G. Native of the Cape of Good Hope. Leaves 3 inches long and 18 lines broad. Petals pale rose-coloured. Scales square. Habit almost of Sédum Telephium, but smaller and more humble; and differs in the stamens being 5. D. C. Perhaps Anacampseros. Burm. afr. t. 25. f. 2. is referrible to this plant.


7 C. fruticulosa (Lin. mant. p. 61.) stem shrubby, smooth; leaves opposite, subulate, acute, much spreading, and a little recurved; peduncles solitary, subumbellate. Ἰ. D. G. Native of the Cape of Good Hope. Flowers small, white, campanulate; anthers purple. Very like C. perfoliata, according to Thunberg; but it differs in the leaves being reflexed.

Var. β. Cape or (Lin. mant. p. 222.) stem suffruticose. Shrubby Crassula. Shrub 2 to 3 feet.

8 C. revolvens (Haw. phil. mag. 1824. p. 185.) stem suffruticos; slender, a little branched; branches erect, leaves linear, long, acute, revolutely reflexed, and arched, rather distant. Ἰ. D. G. Native of the Cape of Good Hope. Flowers small, white, in dense terminal heads. Perhaps not distinct from C. fruticulosa.


10 C. biflava (Haw. phil. mag. 1824. p. 186.) stem suffruticos; erect, with spreading branches; leaves erectish, smooth, subulate, acute, flat on both surfaces, channelled beneath. Ἰ. D. G. Native of the Cape of Good Hope. Very like the following. Bracteas larger. Flowers white; anthers reddish.

Biplanate-leaved Crassula. Fl. Sept. Clt. 1823. Sh. 1 ft. 11 C. acutifólia (Lam. dict. 2. p. 175.) stem suffruticos, decumbent, branched, terete; leaves opposite, fleshy, terete, subulate, spreading, glabrous; cymes small, pedunculate. Ἰ. D. G. Native of the Cape of Good Hope. D. C. pl. grass. t. 2. Allied to C. tetragona, but is rather more herbaceous, decumbent, and rooting. Leaves usually reflexed. Flowers white.


12 C. bibacteata (Haw. in phil. mag. 1824. p. 187.) plant effuse, decumbent, rooting; leaves subulate, expanded, flat or furrowed above; bracteas two on each peduncle. Ἰ. D. G. Native of the Cape of Good Hope. Flowers white; anthers sulphur-coloured, but at length becoming brown. Allied to C. acutifólia.

Var. a. minor (Haw. l. c.) plant usually rufescens; leaves less furrowed above or flat, full of rufous dots beneath.

Var. β. majus (Haw. l. c.) greenish; leaves usually furrowed above, and often dotted with brown; branches longer than in var. a.


13 C. filiculæs (Haw. in phil. mag. 1824. p. 188.) plant effusively dichotomous; leaves spreadingly recurved, lanceolate-subulate, smooth, convex beneath; branches rooting, filiform. Ἰ.? Ἰ. D. G. Native of the Cape of Good Hope. Flowers white, disposed in a kind of cyme; anthers yellow. Allied to the two preceding species.


14 C. scabra (Lin. spec. p. 405.) stem suffruticos, erect, terete, branched, covered with retrograde rugosities; leaves opposite, spreading, connate, linear-lanceolate, acute, searbose, ciliated; flowers corymbose terminal. Ἰ. D. G. Native of the Cape of Good Hope. Dill. hort. elth. t. 99. f. 117. Mart. cent. t. 24. Segments of flowers spreading, or a little revolute, white at first, but becoming at length brownish.


15 C. scabrælla (Haw. rev. succ. p. 11.) leaves linear-lanceolate, acuminate, expanded, and are, as well as the stems, rough from scales. Ἰ. D. G. Native of the Cape of Good Hope. Allied to C. scabra and C. squamulosa. Flowers white?


16 C. squamulosa (Willd. enum. suppl. p. 15.) the whole plant scaly from diaphanous papulae; leaves lanceolate; flowers capitate. Ἰ. D. G. Native of the Cape of Good Hope. Haw. rev. succ. p. 11. Flowers white. Said to be nearly allied to C. scabra.


17 C. bullula (Haw. rev. succ. p. 11.) leaves forate-lanceolate, and are, as well as the stems, roughish from whitish blisters; flowers cymose. Ἰ. D. G. Native of the Cape of Good Hope. Cotylédon, &c. Mart. cent. t. 24. Flowers said to be yellow. Allied to C. scabra, according to Haworth.


Prunose Crassula. Shrub 1 foot.
19 C. muricata (Thunb. prod. p. 55. fl. cap. p. 283.) stem frutescent, erect; branches tetragonal; leaves connate, trilobal, scariously ciliate, obtuse; flowers subumbellate. §. D. G. Native of the Cape of Good Hope. It differs from C. tetragona in the stem being erect, and in the leaves being scarious. Muricata Crassula. Shrub 1 foot.


21 C. cyclopodio'des (Lam. dict. 2. p. 173.) stem shrubby, branched, covered with leaves on all sides; leaves decussate, ovate, acute, smooth, imbricating in 4 rows; flowers axillary, sessile, bracteolate. §. D. G. Native of the Cape of Good Hope. Cr. imbricata, Ait. hort. kew. 1. p. 393. C. muscosa, Lin. spec. p. 405. Thunb. fl. cap. p. 281. ex Thunb. in litt. Corolla small, purple at the base. There is a variety of this plant having the stems naked at the base, according to Thunberg. Club-moss-like Crassula. Shrub tr.


§ 5. Perforatæ (from per, through, and fitum, a thread; in reference to the thread-like stems). Fruitescent or nearly herbaceous. Leaves flat, broader, glabrous, connate, usually glaucous. Haw. syn. p. 54.


26 C. margina'lis (Ait. hort. kew. 1. p. 306.) stem perennial, herbaceous, glabrous, pellucid; leaves connately perforate, roundish-ovate, ending in a recurved mucron, flat, spreading, glabrous, dotted within the margin; flowers disposed in umbellate corymb. §. D. G. Native of the Cape of Good Hope. Jacc. schenbr. 4. t. 471. C. marginata, Thunb. prod. p. 56. fl. cap. 287. Stems prostrate, jointed, rooting. Leaves reddish beneath, quite entire, with cartilaginous margins, which are at first reddish, but at length becoming white from farina. Peduncles terminal, with two lateral ones, rising from the axils of the upper leaves. Flowers white; petals lanceolate, acute. The characters and synonyms are taken from the manuscript of the Prince de Salm-Dyck.


28 C. pro'stra'ta (Thunb. prod. p. 56. fl. cap. p. 288.) stems herbaceous, decumbent, pellucid, glabrous; leaves lanceolate, acute; flowers subumbellate. §. D. G. Native of the Cape of Good Hope. Like C. pellícula, but differs in the form of the leaves.

Prostrate Crassula. Pl. prostrate.

29 C. centauri'o'des (Lin. spec. p. 404.) stems herbaceous, dichotomous, prostrate; leaves opposite, sessile, flat, oblong-ovate, glabrous, punctately toothed on the margins; peduncles axillary, 1-flowered. §. D. G. Native of the Cape of Good Hope. Sims. bot. mag. t. 1765. C. pellícula, Jacq. fragm. t. 44. f. 3. Flowers rose-coloured, nearly like those of C. spatulata; the ultimate ones somewhat corymbose.

Centuary-like Crassula. Pl. prostrate.


30 C. corda'ta (Ait. hort. kew. ed. 1. vol. 1. p. 396.) stem shrubby; leaves opposite, petiolate, cordate, obtuse, quite entire, dotted above, glabrous; cymes panicle-formed. §. D. G. Native of the Cape of Good Hope. D. C. pl. grass. t. 121. Jacq. schenbr. t. 431. Flowers reddish. Allied to C. perforáta. C. cordátà, Wild. spec. 1. p. 153. but the C. cordata of Thunb. appears to be a distinct plant, who says that his plant is annual, and that the flowers are solitary. Plant glaucous.


§ 7. Delto'idææ (leaves resembling in figure the Greek delta). Plants suffruticose. Leaves deltoid, sessile.

Leaves almost like those of *Mesembryanthemum deltoides*. Corymbs few-flowered; pedicels angular. Root fusiform.

**Deltoid-leaved Crassula.** Pl. ½ foot.

33 C. *corallina* (Lin. fil. suppl. p. 188.) leaves opposite, deltoid, obtuse, approximate, dotted; flowers in unumbellate corymbs; stems erect, dichotomously branched. b. Lin. 2. Thunb. D. G. Native of the Cape of Good Hope. Thunb. fl. cap. p. 290. Stem an inch high. Leaves nearly orbicular, white, and powdery at the apex, 1-2 lines long, longer than the internodes.

**Coralline Crassula.** Pl. 1 inch.


**Pubescent Crassula.** Pl. ½ foot.


35 C. *obicularis* (Lin. mant. p. 361.) radical leaves oblong, obtuse, cartilaginously ciliated, flat, rosulate; runners or twigs rising from the root; scape nearly naked; bundles of flowers opposite, pedunculate. 2. D. G. Native of the Cape of Good Hope.—Düll. elt. t. 100. f. 118. D. C. pl. grass. t. 43. C. sedioides, Mill. dict. no. 2. Herb 4-5 inches high. Petals greenish white, rose-coloured at the apex. Stigmata purple.


36 C. *rostralis* (Haw. rev. succ. p. 18.) leaves radial, obtuse, minutely ciliated, flat, rosulate; runners or twigs none; scape nearly naked; bundles of flowers opposite, pedunculate. 2. D. G. Native of the Cape of Good Hope. Very like *C. obicularis*, but differs in the plant being 3 times the size, destitute of runners, and in the flowers being 4-5-cleft and white; it is, however, probably only a variety of it.


**Strigose Crassula.** Pl. ½ foot.

§ 10. Tillaeoides (plants with the habit of *Tillaea*). Small subaquatic glabrous herbaceous plants, having 4-cleft flowers.

40 C. *nata* (Thunb. prod. p. 54. fl. cap. p. 281.) stems erect, dichotomous; leaves connate, linear-oblong, obtuse; pedicels axillary, opposite, shorter than the leaves; petals obovate, a little longer than the calyx. 2. B. G. Native about Cape Town, in ditches and other watery places. Tillaea *Capensis*, Lin. fil. suppl.

**Floating Crassula.** Fl. fl.

41 C. *ina* (Thunb. l. c.) stem erect, simple, branched at the apex; leaves perfoliate, ovate, obtuse; flowers corymbose; petals ovate-lanceolate, twice the length of the calyx. 2. D. G. Native of the Cape of Good Hope. Tillaea *perfoliata*, Lin. fil. l. c.

**Dwarf Crassula.** Pl. ½ foot.

42 C. *umbellata* (Thunb. l. c.) stem simple, erect; leaves on short petioles, ovate, obtuse; flowers umbellate. 2. D. G. Native of the Cape of Good Hope. Tillaea *umbellata*, Willd. spec. 1. p. 721.

**Umbellate-flowered Crassula.** Pl.

43 C. *decumbens* (Thunb. l. c.) stem erect or decumbent; leaves connate, terete, subulate; flowers pedicellate, fastigate at the base of the branches. 2. D. G. Native of the Cape of Good Hope. C. *Thunbergiana*, Schultes, syst. 6. p. 758. The stems are said to be decumbent in the diagnosis, but in the description erect. Scales very short, red.

**Decumbent Crassula.** Pl. decumbent.

† Species not sufficiently known.

* Leaves opposite.

44 C. *neglecta* (Schultes, syst. 6. p. 722.) stems herbaceous; leaves petiole, cordate, and are as well as the branches glabrous; flowers solitary. 2. G. Native of the Cape of Good Hope. C. cordata, Thunb. nov. act. nat. cur. 6. p. 330. fl. cap. p. 293, but not of others.

**Neglected Crassula.** Pl. ½ foot.

45 C. *expansa* (Ait. hort. kew. 1. p. 390.) stems herbaceous, dichotomous; leaves semicylindrical, subulate, channelled above, spreading; peduncles axillary, solitary, 1-flowered. 2. G. Native of the Cape of Good Hope. It is not known whether the leaves are opposite or alternate.


46 C. *diffusa* (Ait. hort. kew. ed. 1. vol. 1. p. 395.) stems herbaceous; leaves oblong, attenuated at the base, crenated; peduncles opposite the leaves and axillary, solitary. 2. G. Native of the Cape of Good Hope. Flowers pink? The rest unknown.


47 C. *subulata* (Lin. mant. p. 360.) stem herbaceous, branched; leaves opposite, terete, spreading; flowers capitate. 2. G. Native of the Cape of Good Hope. Herm. lindg. bat. 552 with a figure. Flowers white, ex Herm. and Petiv. gaz. t. 89. f. 8.


48 C. *sylvatica* (Licht. in Schultes, syst. 6. p. 726.) stem herbaceous, dichotomous, beset with stigrose hairs; leaves obovate-oblong, with the margin and base beset with stigrose hairs; flowers terminal and axillary, solitary.—Native of the Cape of Good Hope. The rest unknown.

**Wood Crassula.** Pl. ?

49 C. *abscændens* (Thunb. nov. act. nat. cur. 6. p. 341.) stem suffrutescent, decumbent; branches erect, filiform above,
and naked; leaves connate, triquetrose, entire, spreading, glabrous; corymb compound. \( \text{h}. \) D. G. Native of the Cape of Good Hope. This plant is omitted in Thunberg's flora, cap. and prod. and is therefore doubtful.

Ascending Grassula. Pl. decumbent.

50 C. ? ALBA (Forsk. descr. 60. but not of Hortul.) stem simple; leaves opposite, crowded, sheeting, lanceolate, cartilaginously ciliated; peduncles dichotomous; flowers corombose.—Native of Arabia, on the mountains of Hadie and Boka. Flowers white, 5-parted.

White-flowered Grassula. Pl. \( \frac{1}{2} \) foot.

51 C. ? LINOLEATA (D. C. prod. 3. p. 590.) stem herbaceous; leaves cordate, sessile; peduncles nearly terminal, axillary, approximate, umbel-formed. \( \text{c}. \) D. G. Native of the Cape of Good Hope. Sims, bot. mag. 1765. Flowers yellow. Mr. Haworth has placed this species between C. retroflexa and C. centaurioides; but C. retroflexa is now referrible to Grammánthes, and therefore this species is probably a species of that genus.

Lined-leaved Grassula. Fl. June, Aug. Clt. 1774. Pl. \( \frac{1}{2} \) ft.

52 C. ? AGARDHIANA (Schultes, syst. 6. p. 718.) stem suffrutescent, twisted, branched; branches naked; radical leaves ovate, imbricated; cauline ones remote, alternate. \( \text{h}. \) D. G. Native of the south of Spain. According to the description this is a species of Sédum or Sempervivum.

Agardh's Grassula. Pl. \( \frac{1}{2} \) foot.

** Alternifolíae. The leaves being alternate in the following plants, they are probably species of Sédum.

53 C. ? MICROCARPA (Sibth et Smith, fl. græc. prod. 1. p. 217.) leaves oblong; stem thickened; capsule angular, dotted, mucil. \( \circ \). H. Native of the island of Cyprus, among rocks.

Small-fruited Grassula. Pl. \( \frac{1}{2} \) foot.

54 C. ? PULCHELLA (Ait. hort. kew. ed. 1. vol. 1. p. 392.) leaves ovate-oblong, fleshy, reflexed; stem herbaceous, dichotomous; flowers pedunculate in the forks; peduncles turbinate. \( \circ \). G. Native of the Cape of Good Hope. Haw. succ. p. 12. Lobes of calyx leaf-formed, spreading, \( 2 \) short, and \( 3 \) about equal in length to the petals, which are ovate and acute. Flowers pink.

Neat Grassula. Fl. July. Clt. 1810. Pl. \( \frac{1}{2} \) foot.

55 C. ? SALSA (Ait. l. c. p. 395.) stems herbaceous; leaves alternate, rather spatulate, acute, quite entire; racemes compound. \( \text{c}. \) D. G. Native of the Cape of Good Hope. Flowers white?

Scattered Grassula. Fl. June, July. Clt. 1774. Pl. \( \frac{1}{2} \) foot.

N. B. Plants formerly included in the genus Crassula, but are now to be excluded from the order.

1 C. ? ALTERNIFOLIA (Lin. hort. cltv. p. 497, according to the figure in Burm. afr. p. 58. t. 24. f. 1.) is probably a species of Bourrignaea, and perhaps B. ciliata.

2 C. ? PINNATA (Lour. coch. p. 185.) is a plant far separated from Crassula, and most probably belonging to the order Terebinthiaceæ. C. pinnata of Dum. Cours. is a species of Bryophyllum or Kalanchœ. The C. pinnata of Lin. fil. suppl. 191. is probably the same plant as Loureiro's.

Cult. Crassula is an extensive genus of rather ornamental plants, and some of which are rather grotesque. A mixture of loam, sand, and brick rubbish, is the best soil for them. Cuttage root very readily if dried for a few days, after being cut off from the plants before being planted. The seeds of the annual species should be sown in pots, and when the plants have grown a little may be separated, and planted into other pots. All the species are well fitted for a dry stove, or to be placed on shelves erected in a greenhouse.


Lin. syst. Pentandria, Pentagynia. Calyx 5-parted, much shorter than the corolla. Petals 5, imbricated at the base, mucronulate beneath the apex. Stamen 5; filaments subulate. Scales 5, marginale. Carpels 5, flat inside, and gibbous on the outside.—Herbaceous half naked plants. Leaves for the most part radical. Inflorescence spicately thyrsoïd. Flowers in whorles, almost sessile. The species are probably all biennial.

§ 1. Linguéfolíae (from lingua, a tongue, and folium, a leaf; form of leaves). Leaves lorately tongue-formed, thick, acutish. Haw. l.c.

1 P. LINGUEFÓLIA (Haw. rev. succ. p. 14.) lower leaves distinct, opposite, tongue-formed, ciliated, pubescent; stem leafy; flowers verticillate, crowded, sessile. \( \text{Y}. \) or \( \text{c}. \) D. G. Native of the Cape of Good Hope. Crássula linguéfolia, Haw. misc. nat. p. 175. Stem simple, a foot high. Corolla ampulliform, from green to white. Perhaps only a variety of P. tomentósa.


2 P. TOMENTÓSA (Haw. rev. succ. p. 14.) radical leaves oblong-lanceolate, imbricated, bluntish, villous, ciliated; stem nearly naked; flowers verticillate. \( \text{Y}. \) or \( \text{c}. \) D. G. Native of the Cape of Good Hope. Crássula tomentósa, Lin. fil. suppl. p. 190. Stem erect, angular, villous, a foot high. Flowers white.


4 P. PERTUSÁLIA (Haw. in phil. mag. 1828. p. 184.) leaves lanceolate, recurved, beset with impressed dots on both surfaces; upper bracteas cordate, entire; scape panicled. \( \text{c}. \) D. G. Native of the Cape of Good Hope. Corolla snow white.


5 P. hírta; radical leaves lanceolate, hairy; stem herbaceous, erect, nearly naked, rather pubescent; heads of flowers verticillate. \( \text{c}. \) D. G. Native of the Cape of Good Hope. Crássula hírta, Thorn. fl. cap. 284. Like P. spicátà. Leaves fleshy, white, erect, acute. Flowers white.

Hairý Purgosia. Pl. \( \frac{1}{2} \) to 1 foot.

6 P. CEPAHOLóPHORA; radical leaves connate, linear-oblong, obtuse, entire; stem nearly naked, erect; heads of flowers opposite, pedunculate. \( \text{c}. \) D. G. Native of the Cape of Good Hope. Crássula cephalóphora, Lin. fil. suppl. p. 190. Thuin. fl. cap. 287. Flowers white. Leaves long.

Head-bearing Purgosia. Pl. \( \frac{1}{2} \) foot.

7 P. CRENULÁTA; leaves connate, lanceolate, obtuse, punc- tately crenulated, glabrous; stem herbaceous, erect, glabrous, terete; corymb decompound. \( \text{c}. \) D. G. Native of the Cape of Good Hope. Crássula crenuláta, Lin. fil. suppl. p. 189. Thuin. fl. cap. p. 287. Flowers white.

Crenulated Purgosia. Pl. 1 foot.
CRASSULACEÆ. VI. Purgosia.

§ 2. Ovatifolious (from ovas, ovate, and folium, a leaf). Leaves ovate, oval, or obovate.


Alp Purgosia. Pl. ½ foot. ɣ. D. G. Native of the Cape of Good Hope. Crassula montana, Lin. fl. suppl. p. 190. Thumb. fl. cap. 286. nov. act. nat. cur. 6. p. 336. t. 56. f. 4. Allied to Crassula montana, but differs in the leaves being more acuminate, not ciliate, in the stem being thicker, and clothed with leaves, and in the flowers being larger.

Hemispherical Purgosia. Pl. ½ foot. ɣ. D. G. Native of the Cape of Good Hope. Crassula montana, Lin. fl. suppl. p. 190. Thumb. fl. cap. 286. nov. act. nat. cur. 6. p. 336. t. 56. f. 4. Allied to Crassula montana, but differs in the leaves being more acuminate, not ciliate, in the stem being thicker, and clothed with leaves, and in the flowers being larger.


leaves obliquely cuneate-ovate, dark purple; scape or flower bearing stem, very long, and panicked. 2. D. G. Native of the Cape of Good Hope. Crassula obliqua, Haw. rev. succ. p. 204. It approaches very near G. cultrata, but differs in the florescence. Flowers white.

1/2 to 1 foot.

§ 2. Linguatæ (from lingua, a tongue; form of leaves). Leaves lorate, obtuse, convex beneath, or narrow tongue-formed, imbricating exactly in 4 rows. Stem very short or herbaceous. Scapes or floriferous stems naked. Haw. in phil. mag. 1824. p. 191.

4 G. lingua (Haw. in phil. mag. 1824. p. 28.) leaves elongated, lorate, ventricosely semi-lanceolate, culitate, and as are well as the calyces ciliated. 2. D. G. Native of the Cape of Good Hope. Leaves without dots. Flowers panicked, white; anthers yellow.

Tongue-leaved Globulea. Fl. Ju. Clt. 1823. Pl 1 ft. 5 G. lingulæ (Haw. l. c. p. 29.) leaves rather elongated, ventricosely semi-lanceolate, culitate, thin, flaccid. 2. D. G. Native of the Cape of Good Hope. Very like the preceding, but the preceding, being much larger.


6 G. capitata (Haw. rev. succ. p. 17.) leaves ventricosely lanceolate, culitate, rather convex beneath, imbricately decussate, when young hoary. 2. D. G. Native of the Cape of Good Hope. Crassula capitata, Salm-Dyck, cat. 1820. p. 14. but not of Lam. Very like G. obvallată, but larger, and the leaves are more aciniform, usually an inch and a half broad.


8 G. cænescens (Haw. syn. p. 61.) leaves all radical, decussately imbricated, ciliated, lorate lanceolate, bent, culitate, canescent. 2. or D. G. Native of the Cape of Good Hope. Crassula canescens, Salm. sect. 6. p. 734. An intermediate species between G. obvallata and G. nudicaulis.


9 G. nudicauïlis (Haw. syn. p. 61.) stemless; leaves radical, crowded, rosulate, semi-terete, subulate, acute, rather pubescent; scape nearly naked; heads of flowers somewhat ventricosely convolute, glomerated at the apex of the scape. 2. or D. G. Native of the Cape of Good Hope. Crassula nudicaulis, Lin. spec. p. 405. D. C. pl. grass. t. 132.—Dill. hort. elth. p. 115. t. 97. f. 114. Flowers white.


10 G. sulcata (Haw. rev. p. 18.) stemless; leaves incurved, subulate, semi-terete, deep green, shining, broadly channelled. 2. or D. G. Native of the Cape of Good Hope. Very like G. nudicaulis, but differs in being glabrous, and in the leaves being broadly furrowed above.


11 G. impresa (Haw. in phil. mag. 1824. p. 189.) plant stemless; leaves lorately-lanceolate, green, full of impressed dots; dots large, scattered, numerous. 


14 G. Mesembryanthemoides (Haw. l. c. p. 190.) stems suffrutiçose, bushy, erect; leaves subulate, and are as well as the branches, branchlets, and calyces hispid. 


12 G. paniculatâ (Haw. in phil. mag. 1825. p. 29.) leaves aruncate, acuminate, green, beset with minute impressed dots; branches of panicle spike-formed. 


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CRASSULACEÆ. VII. GLOBULEA. VIII. Curtogyne. IX. Grammánthes.

Florescence disposed in umbellate cymes. Flowers white. —This is an intermediate genus between Crassula and Röchea.

1 C. unduláta (Haw. rev. p. 8.) leaves oblong, or ovate-tongue-shaped, expanded: upper ones waved. 


12 G. paniculatâ (Haw. in phil. mag. 1825. p. 29.) leaves aruncate, acuminate, green, beset with minute impressed dots; branches of panicle spike-formed. 


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CRASSULACEÆ. X. ROCHEA. XI. KALOSANTHES.

LIN. SYST. Pentandria, Pentagynia. Calyx 5-lobed. Petals 5, united into gamopetalous hypocotyliform corolla; with a short tube, equal in length to the spreading limb, or shorter than it. Stamens 5, alternating with the petals, a little exserted. Glands and carpels 5.—Tall, fleshy, simple, succulent shrubs. Leaves opposite, connate at the base, thick, white. Flowers disposed in terminal corymbs, without any bracteas.


Var. β, minor (Haw. rev. succ. p. 3.) all parts of the plant smaller.

Sickle-leaved Rochea. Fl. Ju. Sept. Cl. 1795. Sh. 3 to 8 ft.


Var. β, albiflora (Haw. l. c.) flowers white. Crassula perfollata, D. C. pl. grass. t. 13.—Dill. hort. elth. f. 113. Mill. fig. t. 108. Comm. præl. t. 23. without any flower, and is therefore referrible to Aðie pertusa, Haw. in Lin. trans. 7. p. 25.


3 R. ALBIFLORA (D. C. prod. 3. p. 393.) leaves distinct, ovate, acuminate, spreading, cartilaginozously ciliated. ɣ. D. G. Native of the Cape of Good Hope. Crassula albiflora, Sims. bot. mag. t. 2391. Flowers white, disposed like those of R. falcata, but larger than those of R. perfollata. Anthers blackish, and a little more exerted than those of the other species.

White-flowered Rochea. Fl. July, Aug. Cl. 1800. Shrub 2 to 3 feet?

Cult. Large, succulent plants, elegant when in flower. Their culture, propagation, and treatment are the same as that recommended for Globolæa, p. 106.


LIN. SYST. Pentandria, Pentagynia. Calyx 5-lobed (f. 26. a.). Petals 5, united into a gamopetalous hypocotyliform corolla (f. 26. a.), with a cylindrical tube 2 or 3 times longer than the spreading limb (f. 26. a.). Stamens 5, alternating with the petals; anthers in the throat of the tube of the corolla. Glands and carpels 5. Succulent shrubs. Leaves opposite, oval, or oblong, connate, flat, cartilaginozously ciliated. Flowers disposed in cymose umbels or heads, involucrated with numerous bracteas.

1 K. COCCINEA (Haw. rev. p. 18.) leaves connate and sheathing at the base, ovate-oblong, acutish. ɣ. D. G. Native of the Cape of Good Hope. Larochea coccinea, Haw. syn. p. 50. Crassula coccinea, Lin. spec. Curt. bot. mag. t. 495. Dietrichia coccinea, Tratt. thes. t. 19.—Comm. rar. t. 24. Bradl. succ. t. 50. Burn. a. f. t. 23. f. 1. Flowers scarlet; tube an inch long. According to Breyn. prod. 3. t. 20. f. 1. there is a variety with flesh-coloured flowers; and according to Bradl. succ. t. 50. and Haw. rev. p. 8. there is a variety with white flowers, but in the gardens it is not to be found but with scarlet flowers.

Scarlet-flowered Kaloanthes. Fl. June, Aug. Cl. 1710. Shrub 1 to 3 feet.


3 K. VERSCOLOR (Haw. rev. p. 7.) leaves oblong-lanceolate, acute, connate and sheathing at the base; stem erect, branched; flowers in umbellate heads. ɣ. D. G. Native of the Cape of Good Hope, on the Table Mountain. Crassula versicolor, Burch, ex Ker. bot. reg. t. 320. Rōchæa versicolor, D. C. prod. 3. p. 394. Flowers about the size of those of K. coccinea, having the tube white, and the segments of the limb oval, white in the middle, edged with scarlet. Calyx as long as ⅔ of the tube of the corolla.


4 K. ODORATISSIMA (Haw. rev. p. 7.) leaves linear-lanceolate, gradually acuminate, connate; stem-clasping; flowers in umbellate heads; segments of the corolla oblong, acutish. ɣ. D. G. Native of the Cape of Good Hope. Crassula odoratissima, Andr. bot. rep. t. 26. Jacq. hort. schœnbr. t. 434. Larochea odoratissima, Haw. syn. p. 51. Dietrichia odoratissima, Tratt. Rōchæa odoratissima, D. C. prod. 3. p. 394. The flowers are yellow, according to Andrews; yellowish, Haworth; but with red claws and white lamina, according to Jacquin; they have the scent of those of Polyanthus tuberosus, or Tube-rose.

Var. β, alba (D. C. prod. 3. p. 394.) flowers white. ɣ. D. G. Native of the Cape of Good Hope. Crassula capitata, Lodd. bot. cab. t. 1029. Leaves less ciliated, according to the figure, than those of the species.


5 K. BICOLOR (Haw. rev. p. 7.) flowers capitata, sessile, yellow, and scarlet. ɣ. D. G. Native of the Cape of Good Hope. Very like the preceding species, but larger and more rigid, and the leaves are more acute.


Yellow-flowered Kaloanthes. Shrub 1 to 2 feet?


10 K. FASCICUL'AT'IS (Schultes, syst. 6. p. 709, under Röchea,) leaves comatose sheathing at the base, linear-lanceolate; flowers in fascicles; segments of the calyx lanceolate, acute, ciliated. ɣ. C. G. Native of the Cape of Good Hope. Crassula fasicul'aris, Lam. dict. 2. p. 171. Leaves glabrous, cartilagineously ciliated. Corolla almost as in K. cocinea, but is a little shorter.

Fascicled-leaved Kalosanthes. Shrub 1 to 2 feet.

Cult. Elegant succulent shrubs, worth cultivating in every collection for the beauty of their flowers. The culture, propagation, and treatment they require are the same as that recommended for Globularia, p. 106.


LIN. SYST. OCTÁN'DRIA, TETRAGAYÓ. Calyx 4-parted (rarely 5-parted); sepal united only at the very base, lorate, acute, sparsely recurved at the apex. Corolla gamopetalous, hypocrateriform with an obvively clavate tube, and a 4-parted (rarely 5-parted) spreading limb. Stamens 8, 4 of which are adnate to the tube, nearly to the middle, the other 4 almost to the apex. Scales 4, linear, but almost obsolete in the K. vár'ians. Carpels 4, continuous, with the filiform styles.—Succulent subshrubs, from 1 to 2 feet high, erect, a little branched. Leaves opposite, fleshy, more or less irregularly impari-pinnate, or ovate, toothed or serrated, and often of a glaucous hue. Flowers disposed in loose cymose terminal panicles, yellow, or rufescent, rarely white, scentless. This is a very natural genus.

* Leaves pinnatifid.


* * Leaves simple; but in K. vár'ians some of them are tricuspidate.


6 K. LANCEO'LÁTA (D. C. prod. 3. p. 395.) leaves lanceolate, crenated at the apex; segments, pubescent, calyces, and corollas, villous; cymes panicked. ɣ. D. G. Native of Arabia. Cotyledon lanceolátá, Forsk. desc. p. 89. Flowers said to be reddish yellow, that is, probably brown.

Lanceolate-leaved Kalanchoe. Shrub 1 to 2 feet.

7 K. BRASILÍ'NIS (St. Hili. fl. bras. 2. p. 196.) puberulous; lower leaves roundish; middle ones obovate-lanceolate; upper ones linear; all crenately serrated; cymes dense; lobes of corolla very acute. ɣ. D. S. Native of Brazil, near Rio Janeiro by the sea side. Corolla with a yellow tube, and a rose-coloured limb. This plant seems to be an exception from the exciting and acid properties peculiar to the rest of Crassuláceae, it being used by the Brazilians in their domestic medicine.

Brazilian Kalanchoe. Shrub 1 to 2 feet.


Alternating Kalanchoe. Shrub 1 to 2 feet.

9 K. RÔN'DIFÓLÍÁ (Haw. in phl. mag. July, 1825. p. 51.) plant straight and slender; leaves thick: lower ones roundish: upper ones obovate, and almost entire; flowers small. ɣ. D. G. Native of the Cape of Good Hope. Flowers rufescent or yellow.


Cult. The species of Kalanchoe being succulent, require very little water unless when growing freely; and the pots in which they are grown ought to be well drained with shers. A mixture of loam and sand appears to be the best soil for them. The species are easily increased by cuttings. A leaf taken off any
of the species, and laid on the pot of mould, or on a tan-bed, will shoot out young plants from the notches on the edges of the leaf.

XIII. BRYOPHYLLUM (from βρυο, bryo, to sprout, and φυλλον, phyllon, a leaf; plants spring from the notches on the edges of the leaves when taken off the plant, and placed in a moist situation). Salisb. par. 3. D. C. prod. 3. p. 395.—Crassovià, Comm. mass.—Physocalyçium, Vest. in fl. 1820. p. 409.—Cotalylæ species, Lam.—Calanchoê species, Pers.

LIN. SYST. Octândria, Tetrâgynia. Calyx inflates, bladdery before flowering, hardly 4-cleft to the middle; lobes 4, valvate. Corolla gamopetalous, hypogynous, having a long cylindrical tube, which is bluntly tetragonal at the base; and the lobes of the limb triangular and acute. Stamens 8, adnate to the base of the tube. Glánds 4, oblong.—A fleshy, erect, branched, glabrous shrub. Leaves opposite, thick, petiolate; some impari-pinnate, with one or 2 pairs of segments, the terminal segment large; others solitary, all ovate and crenated; crenae bearing an opaque dot in each, which is easily made to evolve into a plant. Cymes panicled, terminal. Flowers yellowish red, or green and red. Calyx almost like that of Silâne infâta.


Large-calyxed Bryophylum. Fl. April, July. Clt. 1806. Shrub 2 to 8 feet.

Cult. See Calanchoê above for culture and propagation.


LIN. SYST. Decândria, Pentâgynia. Calyx 5-parted, much shorter than the tube of the corolla. Corolla gamopetalous; tube ovate-cylindrical; limb 5-lobed, spreadingly reflexed or revolute; lobes obutate. Stamens 10, adnate to the base of the tube of the corolla; the upper part free, exserted or almost inclosed. Scales oval. Carpels 5, continuous, with the styles, which are subsulate.—Fleshy shrubs, native of the Cape of Good Hope. Leaves usually scattered. Flowers loose, panicled, purplish or orange-coloured. This genus has been divided into sections from the form of the corolla by the Prince Salm-Dyck, but the corolla being unknown in a great many of the species we cannot follow these divisions.

* Leaves opposite.

1 C. unbûlata (Haw. suppl. 20. rev. 20.) leaves opposite, rhomboïd-ovate, with an acumen, pale green; older ones large and very thick, margined with red at the apex; when young lean and waved. ἦς, D. G. Native of the Cape of Good Hope. Flowers unknown. Very similar to C. orbiculâta, but the stem is more humble, and the leaves longer, and less obtuse at the apex. Salm-Dyck, in litt.


Var. a, rotundifolia (D. C. prod. 3. p. 396.) leaves roundish.


Var. β, orbiculâta (D. C. l. c.) leaves orbiculate, margined with red.—C. orbiculâta, Haw. l. c. C. orbiculâta var. a, D. C. pl. grass. t. 76. Curt. bot. mag. t. 921.—Mor. oxon. sect. 12. t. 7. f. 39. Herm. lugd. bat. 551. with a figure.

Var. γ, orbiculata (D. C. l. c.) leaves orbiculate. C. orbiculâta, Haw. l. c.

Var. δ, orbiculata (Salm-Dyck. in litt.) leaves orbiculate, white, and mealy; stem tall, firm, a little branched. C. orbiculâta, Haw. suppl. p. 20.

Var. ε, orbiculata (Salm-Dyck. in litt.) leaves ovate-spulate, white, and mealy; caudex much branched; branches effuse. C. orbiculâta, Haw. suppl. p. 20. C. ramosissima, Mill. dict. C. orbiculata γ, Ait. hort. kew.


3 C. crassifôlia (Haw. in phil. mag. 1826. p. 272.) stem erect, shrubby; plant white from mealiness; leaves rhomboïd, obcutene, thick. ἦς, D. G. Native of the Cape of Good Hope. Leaves distant, decussately opposite, edged with brownish purple on the margin above the middle. Flowers not seen.

Thick-leaved Cotyledon. Clt. 1824. Shrub 1½ to 3 feet.

4 C. vîrîdens (Haw. in phil. mag. 1826. p. 272.) stem shrubby, erect, nearly simple; leaves ovate-cuneate, green. ἦς, D. G. Native of the Cape of Good Hope. Leaves middle-sized, lean. In habit it follows C. crassifôlia.

Green Cotyledon. Clt. 2 to 4 feet.

5 C. ramosissima (Haw. suppl. p. 25.) leaves oblong-spulate, fariâsously margined with red at the apex; caudex much branched; young branchlets erect; old ones twisted, and crowded. ἦς, D. G. Native of the Cape of Good Hope. C. orbiculata, Lin. fil. suppl. Flowers unknown. Leaves not half the size of those of the smallest variety of C. orbiculata, hardly 15 lines long, and 9 lines broad.


7 C. ungulâta (Lin. dict. 2. p. 139.) leaves opposite, semi-cylindrical, channelled, glabrous, purple, and furnished with a callous point at the margin near the apex; flowers in a kind of panicle, glabrous; caudex erect. ἦς, D. G. Native of the Cape of Good Hope. Burm. aîr. dec. 3. p. 24. t. 22. f. 1. Flowers purplish, pendulous. Very like C. orbiculata.

Claw-leaved Cotyledon. Shrub 1 to 2 feet.


9 C. tricuspidâta (Haw. in phil. mag. 1825. July, p. 32.) plant white from mealiness; leaves narrow, usually deeply tricûspîdâta. ἦς, D. G. Native of the Cape of Good Hope.
Very like *C. papillaris*, but differs in the leaves being tricuspidate.

*Tricuspidate-leaved Cotyledon.* Clt. 1823. Shrub 1 foot.

10 **C. purpurea** (Thunb. fl. cap. p. 396.) leaves opposite, linear-oblong, fleshy, concave, glabrous; flowers panicked, glabrous; caudex erect, nearly herbaceous. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope. Corolla purple, an inch long.

*Purple-flowered Cotyledon.* Shrub 1 foot.

11 **C. teretifolia** (Thunb. prod. p. 83. fl. cap. p. 397. but not of Lam.) leaves opposite, nearly terete, fleshy, hairy, obtuse, with an acumen; flowers panicked, hairy, caudex erect, simple. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope.

*Terete-leaved Cotyledon.* Shrub 1 foot.

12 **C. cuneiformis** (Haw. in phil. mag. March, 1826. p. 185.) stems short, branched; leaves crowded, obovate, mucronate, rather white from mealliness. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope. Like *C. crassifolia*, but much more humble.

*Wedge-leaved Cotyledon.* Shrub 1 foot.

**Leaves alternate, marcescent.**

13 **C. curviflora** (Sims, bot. mag. t. 2044.) leaves scattered, semicylindrical, glabrous; cicatrices of the stem, where the old leaves have fallen off, rather prominent; flowers panicked, nodding; calyces loose; tube of corolla pentagonal, incurved. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope. Flowers of a dirty yellow-colour, almost reddish, about an inch long. Styles longer than the stamens.


14 **C. tuberculosa** (Lam. dict. 2. p. 139.) leaves scattered, subcyllindrical, linear-oblong, acute; cicatrices of the old leaves tubercular; flowers subpanicled, erect; peduncles and calyces pubescent. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope.—Burman. at. 20. f. 1. **C. grandiflora**, N. L. Burm. prod. fl. cap. 13. **C. tuberculosa**, D. C. pl. grass. t. 86. Flowers showy, orange-coloured, tubular, an inch or more long; limb spreading, not repicate.


15 **C. cacaloides** (Lin. suppl. p. 242.) leaves scattered, terete, acute; cicatrices of the old leaves pitted; flowers panicked, erect, seated on a long, elongated, nearly naked stem. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope. Burman. at. 20. f. 2. Flowers yellow, rather villous, half an inch long. Leaves deciduous when the plant is in flower; hence Burmann called it *C. aphylla*.


16 **C. ventricosa** (N. L. Burm. prod. fl. cap. p. 13.) leaves scattered, linear-oblong, acute at both ends; cicatrices on old stems tubercular; flowers in loose racemes, pedicellate, erect; tube ventricose, pentagonal; lobes acute. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope. Burman. at. dec. 3. p. 51. t. 21. f. 1. Flowers greenish, almost like those of *C. hemispheirica*. Leaves like those of *C. tuberculosa*, according to Burman.

*Ventricose-flowed Cotyledon.* Shrub 1 to 2 feet.

17 **C. spuria** (Lin. spec. p. 614.) exclusive of the synonyms, leaves almost radical, terete, oblong, fleshy, obtuse, narrower at the base; caudex very short, thick; flowering stem erect, naked; flowers somewhat panicked. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope. Burman. at. 43. t. 19. f. 1. Pluk. alm. t. 323. f. 1.—Willd. spec. p. 754. **C. teretifolia**, Lam. dict. 2. p. 139. but not of Thunb.


18 **C. fasciculare** (Ait. hort. kew. ed. 1. vol. 2. p. 106.) leaves scattered, but in fascicles at the tops of the branches, cuneiform, obtuse, flat, thick; caudex thickened, branched; flowers panicked, pendulous, with revolute limbs. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope. Burman. fl. cap. p. 396. *ex* Burman. syn. *C. radians*, Bochl. nav. t. 37. Corolla with a short, greenish, broad, subpentagonal tube, and a reddish revolute limb.


**Leaves alternate, permanent.**

19 **C. triflora** (Thunb. prod. p. 83. fl. cap. p. 396.) leaves scattered, oblong-spatulate, obtuse, fleshy, of a greyish shining colour; flowers by threes, in spikes, approximate, with repicate limbs; stem suffrutescence. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope, near Zehorivier. Salm-Dyck. obs. p. 6. **C. elata**, Haw. suppl. Corolla with a green tube, and an acute limb, variegated with white and purple.


20 **C. macula** (Salm-Dyck. obs. p. 5.) leaves scattered, ovate-spatulate, somewhat auriculatus at the base, fleshy, shining, marked with dark red spots on both surfaces; flowers spicate, almost alternate; limb spreading; stem suffruticos. \(\ddot{c}.\) D. G. Native country unknown. **C. altamura**, Haw. suppl. ex Salm-Dyck. but not of Vahl. Spike terminal, generally simple. Tube of corolla green, subventricose, with the segments of the limb acute, variegated with white and purple.


21 **C. rhombifolia** (Haw. in phil. mag. 1825. July. p. 38.) leaves approximate, ovoborate-romboid, mucronate, white and mealy; stem branched, strong, decumbent. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope. Allied to *C. hemispheirica*, but more humble and branched, and the leaves are rhomboid, and more acuminate. Flowers unknown.

*Romb-leaved Cotyledon.* Clt. 1823. Shrub decumbent.

22 **C. jasminiflora** (Salm-Dyck. obs. Haw. rev. p. 20.) leaves rather crowded, green, rhomboide-spatulate, fleshy; stem humbe; peduncle terminal, branched; flowers erect, with a green tube, and a revolute limb, variegated with white and purple; pedicels long, thicken. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope. Allied to *C. hemispheirica*, but the stems are more humble, thickened from the root; the leaves longer, and the flowers with the tube and limb more ample, and more like a jasmine flower. Salm-Dyck in litt.


23 **C. hemispheirica** (Lin. spec. p. 614.) leaves scattered, ovate-roundish, thick, dotted, glabrous; flowers nearly sessile, erect, along an elongated peduncle; lobes of corolla spreading. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope.—Dill. cith. 2. t. 95. f. 111. *C. hemispheirica*, D. C. pl. grass. t. 87. Flowers small, with a green tube, and the limb variegated with white and purple.


24 **C. rotundifolia** (Haw. in phil. mag. 1826. p. 273.) shrubby, dwarf; leaves straight, crowded, roundish, dirty green; branches short, decumbent. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope. Leaves flat, convex beneath, mealy. Allied to *C. hemispheirica*.

*Round-leaved Cotyledon.* Shrub decumbent.

25 **C. mahillbris** (Lin. suppl. p. 242.) leaves scattered, crowded into something like whorls, terete, ovate, obtuse, glabrous; flowers spreading on short pedicels, which are seated on an elongated peduncle; stem creeping. \(\ddot{c}.\) D. G. Native of the Cape of Good Hope, near Olyphants Bad. Thunb. fl. cap. p. 397. *Haw. rev. p. 21. suppl. 22.* Corolla tubular, glabrous, with a green tube, and a spreading reflexed limb, which is variegated with white and purple.

ated, fleshy, hairy, with purple margins; stem erect, somewhat herbaceous, pubescent, viscid; corolla hairy. £. D. G. Native of the Cape of Good Hope.


Very like C. spatia', but differs in being higher, in the leaves being shorter, thicker, and narrower, more channelled, and without doubt incurved.


Close-like Cotyledon. Stem 1 foot. 29 C. muscouna' (Lam. dict. 2. p. 142.) leaves nearly radical, oval, flat, with undulated margins, mucronate at the apex; stem branched, very short; floriferous stem naked; flowers erect, in loose panicles. £. D. G. Native of the Cape of Good Hope. Burm. afr. p. 44. t. 19. f. 2. C. undulata, Haw. Lobes of corolla acute.


30 C. reticula' (Thumb. fl. cap. p. 393.) leaves scattered at the tops of the branches, terete, acute, erect, soft, glabrous; stem erect, shrubby, fleshy; flowers erect, in dichotomous panicles. £. D. G. Native of the Cape of Good Hope, in Carro. Caudex a hand high. Panicle compound.

Reticulated Cotyledon. Shrub ½ foot. 31 C. dichoto'ma (Haw. suppl. 27. ex rev. 22.) leaves channelled; cymes dichotomous, puberulous, bracteated by spines; tube of corolla somewhat bottle-formed, with a replicate limb. £. D. G. Native of the Cape of Good Hope.

Dichotomous Cotyledon. Shrub ½ to 1 foot. 32 C. па'vula (Bureh. cat. geogr. no. 1818. ex voy. cap. 1. p. 219.) leaves oval, rather compressed, thick; panicle dichotomously branched; pedicels erect, very long, capitillary; stem erect. £. D. G. Native of the Cape of Good Hope. Plant 6-9 inches high.

Small Cotyledon. Pl. £ to 1 foot. 33 C. та'zuka (Bureh. trav. afr. 2. p. 226.) stemless; leaves glabrous, flattened, fleshy, cuneate-oval or nearly orbicular; flowers erect, alternate on an elongated simple scape, rarely on a bifid one. £. D. G. Native of the Cape of Good Hope. Corolla cylindrical, purplish, with a short reflexed limb, and a purple throat. Carpels 3.

Trigynous Cotyledon. Pl. £ to 1 foot. 34 C. cresc'ta (Haw. phil. mag. 1827, April 1, p. 123.) leaves petiolate, cuneately triangular, curled and crested at the apex. £. D. G. Native of the Cape of Good Hope. Herb succulent, leafy, evergreen. Stem short, with the surculi densely clothed with rufous hairs. Leaves erect, an inch long, thick, purplish at the apex, beset with dots of scurfy down. Spikes terminal. Flowers small, open in the morning.

Crested Cotyledon. Pl. Sept. Cult. 1820. Pl. £ foot. 35 C. clavifolia (Haw. l. c.) leaves petiolate, club-formed, incurved, acuminated, and rather curled at the apex. £. D. G. Native of the Cape of Good Hope. Allied to the preceding species; but the flowers are about twice the size, and purple.

Club-leaved Cotyledon. Fl. Sept. Cult. 1824. Pl. fo. foot. Cult. Cotyledon is a genus of pretty succulent plants. The culture, propagation, and management of the species are the same as that for Gloibaea, p. 106.

XV. PISTORINIA (meaning unknown to us). D. C. prod. 3. p. 399. mem. crass. p. 25. t. 10. f. 5.—Cotyledon species of authors.

LIN. SYST. Decandria, Pentagynia. Calyx 5-parted, much shorter than the tube of the corolla. Corolla gamopetalous, funnel-shaped; tube long, terete; limb spreading, 5-parted. Stamens 10, adnate the whole length of the tube, but free at the throat, and exserted. Scales 5, oblong, obtuse. Carpels 5, each ending in a long filiform style.—Erect annual or biennial herbs. Leaves nearly terete, oblong, scattered, sessile. Flowers cymose, red. Habit of the plants belonging to that section of Umbilicus called Mucizionia, and the flowers like those of Cotyledon.

1 P. hispánea (D. C. prod. 3. p. 399.) 0. or z. H. Native of Spain and Barbary, in exposed sandy places. Cotyledon Hispánica, Leef. itin. p. 77. t. 1. Lin. spec. 615. D. C. pl. grass. t. 122. Cotyledon Pistorinia, Ort. mon. 1772, with a figure.


XVI. UMBILICUS (from umbilicus, the navel; hollow leaves of some species). D. C. in bull. phil. 1801. no. 49. prod. 3. p. 399. LIN. SYST. Decandria, Pentagynia. Calyx 5-parted. Corolla gamopetalous, campanulate, 5-cleft; lobes ovate, acute, erect, about the length of the tube. Stamens 10, inserted in the corolla. Scales 5, obtuse. Carpels 5, attenuated at the apex. Styles subulate.—Herbs, indigenous to the south of Europe and the Levant. Leaves rosulate or alternate, quite entire, or a little toothed. Flowers white or yellow, in branched or simple terminal racemes, never in cymes.

SECT. I. Rosula'ria (from rosa, a rose; in reference to the leaves being rosulate, or disposed like the petals in the flower of a rose). D. C. prod. 3. p. 399. Sepals equal to the tube of the corolla. Leaves radical, rosulate. Scapes subpanicled, annual.—Perennial herbs, natives of the Levant, with the habit of Semprevirem.


Houseleek-like Navel-wort. Pl. £ foot.

3 U. pàvescens (Meyer in verz. pfanz. p. 150. under Coty-

ledon,) plant pubescent; leaves linear-oblong, blunting: radical ones rosulate, cauline ones scattered, erectly spreading; racemes corymbose; corolla twice the length of the calyx, with the segments of the limb acute and spreading at the apex; stem herba-


CRASSULACEÆ. XIV. COTYLEDON. XV. PISTORINIA. XVI. UMBILICUS. 111
Pubescent Navel-wort. Pl. 1/4 foot.


Samos Navel-wort. Pl. 1/4 foot.

**SECT. II.** Micrìzònia (meaning unknown to us). D. C. prod. 3. p. 399. Cauline leaves alternate. Annual herbs, with the habit of Sedum.


**SECT. III.** Cotty (from cotyled, cottle, a cavity; in reference to the cup-like leaves). D. C. prod. 3. p. 400. Umbilicus J. and C. B. A. Roots tuberous. stems usually branched. Radical leaves petiolate, succulent, more or less peltate. Corolla hardly 5-cleft to the middle.

7 U. pendulinus (D. C. pl. grass. t. 156.) lower leaves peltate, concave, repandly crenated, roundish; racemes entire; flowers tubular, pendulous, or spreading. *H.* Native of Europe, among stones and rocks, on walls and under hedges; in Britain, on moist dripping rocks and old walls. Cotyledon Umbilicus, Lin. spec. 615. var. a. Sow. engl. bot. t. 325. Cotyledon umbilicata, Lam. C. rupéstris, Salisb. Cotyledon Umbilicus vénéris, Blackw. herb. t. 263. Root tuberous. Flower-bearing stem branched; with its branches bearing racemes. Flowers yellow.


*Horizontal-flowered Navel-wort.* Pl. 1/4 foot.

**SECT. IV.** Pistroïnoidea (plants intermediate between Pistroïnia and Umbilicus). Roots perennial, thick, woody. Leaves terete, subulate. Stems numerous, erect, simple, fustular, densely leafy, for the most part naked below, in consequence of the leaves having fallen.

11 U. lievènnii; glabrous; stems herbaceous, erect, simple; leaves scattered, crowded, nearly terete, blunted; flowers cymose; limb of corolla erect. *H.* Native of Altai, between the river Irtysh and Lake Noo-Saisan, in dry saltish fields; in fields on the mountains of Kutchurn, Arkaul, and in the rivulet called Urmichaika, near Buchtorninsk. Cotyledon Lievènnii, Led. fl. ross. alt. t. 57. fl. alt. t. 2. p. 197. Corolla fine red. Carpels 5-6.


12 U. subulata; plant quite smooth, glaceanscent; leaves all scattered, terete, subulate, acute, erectly spreading; racemes corymbose; corolla twice the length of the calyx, with the segments of the limb acute and erect; stem herbaceous, very simple. *H.* Native of Caucasus, among stones, on the mountains of Taulisch, at the altitude of 2700 to 3300 feet. Cotyledon subulata, Meyer. in verz. pl. p. 150. Very nearly allied to U. Lievènnii, but the leaves are acute and erectly spreading, and the corolla is white, twice the length of the calyx, not rose-coloured, and 4 times longer than the calyx.


**SECT. V.** Orotostachys (from ὤρας, horos, the ends, and στακχυς, stachys, a spike; the spike of flowers terminate the scapes). D. C. prod. 3. p. 400. Orotostachys, Fisch. cat. cor. 1806. p. 99. Roots not tuberous. Stems simple. Leaves not peltate nor succulent; radical ones rosulate. Corolla 5-parted.


Flowers yellow, 5-parted, on short pedicels, collected into a cylindrical spike.

* Var. *polygalachus* (Led. fl. alt. 2. p. 200.) spikes numerous, rising from the axils of the radical or cauline leaves, somewhat fastigiate.

**Sepals**.


**Soft-leaved Navel-wort.** Fl. June, July. Clt. 1810. Pl. 1 ft. 15

**Thyrse-flowered Navel-wort.** Fl. Aug. Pl. 1 ft. 17

**Cult.** The hardy perennial species of this genus thrive well on rock-work, or on old walls; they will also grow freely in pots, in a soil composed of loam, peat, and sand, which should be placed among other alpine plants; these are propagated by offsets from the roots or by seeds. The seeds of annual and biennial kinds should be sown on rock-work, or in the open border, in a sandy or gravelly soil.

XVII. Echeveria. (this genus is named after M. Echeveri, author of the fine drawings of the Flora Mexicana, commenced under the direction of MM. Sesse, Mocino, and Cervantes). D. C. prod. 3. p. 401. mem. crass. p. 28.—Cotyledon species of authors.

**Lin. syst. Decandria, Pentagynia.** Calyx 5-parted; sepals erect, referable to leaves, united at the very base (f. 27. a.). Petals 5 (f. 27. b.), also united at the base, erect, thick, sti'fis, thickest at the middle nerve, and nearly trigo'nal at the base, acute. Stamens 10 (f. 27. c.), shorter than the petals, and adnate to them at the base. Scales 5, short, obtuse. Carpels 5, ending each in a subulate style. — Fleshy shrubs, natives of Mexico. Leaves alternate, cauline, or rosulate, and nearly opposite, nerveless. Flowers sessile, disposed along the rachis or branches of the cyme, scarlet or yellow.

* Shrubs. Flowers panicked or spicate, scarlet.

1. **E. grandifolia** (Haw. in phil. mag. sept. 1828. p. 261.) leaves orbicularly cuneate; petals thick; flowers in spicate vol. iii.


**Lin. syst. Decandria, Pentagynia.** Calyx 5-parted (f. 29.a.); sepals ovate, usually turgid, leaf-formed. Petals 5 (f. 29. b.), Q

FIG. 27.
generally spreading. Stamens 10. Nectariferous scales entire, or hardly emarginate. Carpels 5.—Herbs or subshrub. Stems usually branched from the base. Sterile stems or suckers usually crowded with leaves. Leaves alternate, rarely opposite, fleshy, terete or flat, quite entire, rarely toothed. Flowers cymose, white, purple, or blue, but usually yellow; in some species the flowers are 4 or 6-7-petalled, and the stamens always double that number.

* Leaves flat. Flowers yellow.

1 S. Rhodiola (D. C. fl. fr. ed. 3. vol. 4. p. 386. pl. t. 143.) leaves oblong, serrated at the apex, glabrous, glaucous; root rather tuberous; stems simple; flowers corymbose, usually of 4 petals, ovoid-cylindrical, and diocious from abortion.  

2 H. Native of middle Europe, on the mountains; of Siberia, and of North America, on the Arctic Sea shore, and Islands; of Newfoundland and Labrador; and on the Rocky Mountains, Kotzebue's Sound, &c.; in Britain, in the north of England, Scotland, and Wales, on the mountains. Rhodiola rosea, Linn. spec. 1465. Smith, engl. bot. t. 508. fl. dan. t. 182. Plant glaucous. The flowers are yellow, and are said to be sometimes hermaphrodite, but are usually of different sexes on different plants. The root is sweetish when dried; in this state a fragrant water may be distilled from it. The inhabitants of the Faro Island use it as a remedy for scurvy. In Greenland they eat it as garden stuff. A caput of the fresh roots, applied to the forehead, is said to relieve the head-ache, and to heal malignant ulcers. The specific name is from ὅδωρ, a rose; in reference to the fragrance of the roots.


2 S. Asianicum (D. C. prod. 3. p. 401.) leaves linear-ligulate, quite entire, obtuse; umbels few-flowered; calyce segments 4, oblong, obtuse; flowers 4-petalled, hermaphrodite.  


Asiatic Rose-root. Pl. 1 1/2 foot.

3 S. elongatum (Led. fl. alt. 2. p. 193.) leaves scattered, oblong, almost quite entire, glabrous, hardly glaucosecent; root rather tuberous; stems simple; flowers in cymose corymbs; pedicels rarely exceeding the flowers in length; nectariferous scales 3 times longer than broad; carpels recurved.  

4 H. Native of Altaia, in alpine humid places, on the edges of rivulets. Plant glaucous. Flowers yellow; hermaphrodite, but sometimes dioecious or polygamous from abortion, as in S. Rhodiola. Stamens 8 or 10.


4 S. altaicum; leaves scattered, obovate-lanceolate, serrated at the apex, glabrous, glaucous; root rather tuberous; stems simple; flowers in cyme corymbs; pedicels shorter than the flowers; nectariferous scales about as long as broad; carpels erect.  


5 S. himalensis (D. Don, prod. fl. nep. p. 212.) stem erect; leaves oval-lanceolate, flat, acute, toothed, glaucous, smooth; corymbs almost simple; root thick.  

8 H. Native of Gossiasthan, in the alpine regions of the Himalaya or Emodi. Habitat of S. Rhodiola. Flowers yellow.

Himalaya Stonecrop. Pl. 3/4 foot.

6 S. aizoön (Linn. spec. 617.) leaves lanceolate, flat, serrated, alternate, glabrous; stems erect; cymes terminal, crowded.  

7 H. Native of Siberia, in woods; on shady rocks, at Lake Teletzkoi. D. C. pl. grass. t. 101.—Amn. ruth. no. 96. t. 11. Perhaps Anacampseros Aizoon, Haw. syn. p. 112.? Flowers yellow, varying with 4-6 petals and 8-12 stamens. Root branched, fascicled, thickish.


7 S. hybridum (Linn. spec. 617.) leaves cuneiform, rather concave, bluntly serrated, rather crowded, alternate, glabrous; those of the branches crowded; stems ascending, rooting at the base; cymes terminal.  

8 H. Native of Altaia and Tartary, at the bottom of the Ural mountains; on the upper Iris. Murr. nov. comm. goett. 6. p. 35. t. 5.—Gmel. fl. sib. 4. p. 171. no. 851. t. 62. f. 1. Anacampseros hybrida, Haw. l. c. Flowers sulphur-coloured. This is not a hybrid, but a true species. S. altaica, Bess. enum. sem. cren. 1823.


8 S. spatulifolium (Hook, fl. bor. amer. 1. p. 227.) glabrous; stem erect; leaves obovate-spatulate, flattened, acute; upper ones linear; cyme terminal, leafy, trichotomous; flowers pedicellate, decandrous; petals linear-spuriate, much longer than the calyx.  

9 H. Native of the north-west coast of America; common on dry rocky places of the Columbia river. Flowers yellow, very like those of S. stenopetalum. Lower parts of stems decumbent.

Spatulate-leaved Stonecrop. Pl. 1 to 2 foot.

9 S. douglasi (Hook, fl. bor. amer. 1. p. 228.) stem erect, proliferous above from recurved branches; leaves linear-subulate, very acute, flat on the inside, and a little keeled on the back, with dry membranous edges; cymes dichotomous; flowers sessile, decandrous; petals narrow-lanceolate, twice the length of the calyx.  

10 H. Native of North America; common on rocky places on the Columbia to the mountains. Flowers yellow, like those of S. stenopetalum.

Dougla's Stonecrop. Pl. 1/2 foot.

10 S. aegidius (Led. fl. ross. alt. ill. t. 418.) leaves scattered, linear, quite entire, flat, glabrous; root thick, of many necks; stems numerous, simple; cyme terminal, simple; pedicels about equal in length to the flowers; breadth of nectariferous scales exceeding their length; petals longer than the stamens.  

11 H. Native of Altaia, on the higher alps, about the fountains of the rivers Inja, Uba, and Sentelek, and on the mountains Koborga, at the sides of rivulets. Flowers at first yellow, but fading to a dirty red. Allied to S. quadrifidum.


** Leaves flat. Flowers white.

11 S. involucratum (Bieb. fl. taur. 1. p. 352.) leaves cuneiform, crenated, opposite, pubescent, ciliated; stems decinate, hairy; corymbs crowded, involucrured; petals subulate.  

12 H. Native of Caucasus, among stones, at the foot of Mount Kaischaur. Flowers white, about the size of those of S. hybridum.

Involucrated Stonecrop. Pl. 1 foot.

12 S. latifolium (Bert. amen. itin. p. 366.) leaves ovate, cordate, very blunt, serrated, glabrous, usually opposite; coryms cymose, on long peduncles; stamens longer than the corolla.  


13 S. obtusifolium (Meyer. verz. pflanz. p. 150.) plant glabrous, green; stems erect; leaves orbicular-ovate, obtuse, nearly quite entire, with scabrous margins; lower ones opposite; rays of cyme elongated, spreading, and leafy; flowers nearly sessile; petals acute, longer than the calyx.  

14 H. Native of Caucasus, on the Talusch mountains, towards Perim.
Crassulaceae.

XVIII. Sedum.

115. Native stems rare petal's foot. Flowers white; anthers purple. There is a variety of this plant with ovate leaves and few flowers, and is perhaps referrible to S. Notarjanni. Poplar-leaved or Shrubby Stonecrop. Fl. July, Aug. Clt. 1780. Shrub 1 foot.

22 S. Notarjanni (Ten. fl. neap. 1. p. 245. t. 40.) stems ascending, suffruticose; leaves petiolate, flat, ovate, bluntly and simitately toothed, glabrous; flowers solitary or few, terminal; petals lanceolate. H. Native of Naples, near Funda, among calcareous rocks. S. Notarjanni, Ten. cat. 1819. p. 43. Very like S. populifolium, but differs in the stems being almost herbaceous, in the leaves not being coriaceous, in the flowers being nearly solitary, and in the anthers being yellow.

Notarjanni's Stonecrop. Shrub 1 foot.

23 S. stella'tum (Lin. spec. 617.) leaves flat, roundish, angularly toothed, tapering into the petioles, opposite, or alternate, glabrous; flowers axillary, sessile along the branches of the cyme; petals lanceolate. H. Native of the Islands of Corsica, Melos, and of Italy, and the south of Switzerland. Smith, fl. grece. 446. Comm. hort. 7. t. 2. Col. phyt. 39. 11. Petals white, tinged with red.


24 S. Cepae'a (Lin. spec. 617.) stem herbaceous, terete, pubescent; leaves flat, quite entire; lower ones rather spatulate: upper ones oblong or linear; flowers panicled; petals ending in an awned point. H. Native of middle and south Europe, in hedges and among bushes. Smith, fl. grece. 447.—Clus. hist. 2. p. 68. with a figure.—Mor. hist. 3. p. 473. sect. 12. t. 7. f. 37. —S. paniculatum, Lam.—Anacampseros Cepae'a, Haw. Flowers white.

Var. b, galioides (D. C. prod. 3. p. 404.) upper leaves nearly opposite: lower ones in whorls, spatulate. S. galioides, All. pedem. no. 1742. t. 65. f. 3. S. verticillatum, Loutur, but not of Lin.

Var. c, alsinifolium (D. C. 1. c.) oval leaves, for the most part alternate. S. alsinifolium, All. ped. no. 1740. t. 22. f. 2. Pedals acutish. Cepaea or Purslane-leaved Stonecrop. Fl. July, Aug. Clt. 1610. Pl. 3/4 to 1 foot.

25 S. spatulatum (Waldst. et Kit. pl. rar. hang. 2. p. 108. t. 104.) stem herbaceous, terete, pubescent; leaves flat, entire, nearly all alternate, spatulate: upper ones cuneiform; flowers panicled; petals ending each in an awn. H. Native of Hungary. S. Cepae'a, var. γ, spatulatum D.C. prod. 3. p. 404. Flowers white.


26 S. tetraphyllum (Smith, fl. grece. t. 448. prod. 1. p. 309.) plant pubescent; leaves spatulate, quite entire, four in a whorl; stem branched at the base: peduncles axillary, few-flowered, the whole forming a terminalpanicled raceme; petals ending in a long point. H. Native of Greece. Ray. syn. ext. 233. Petals white, with a red keel.

Four-leaved Stonecrop. Fl. 1/4 foot.

27 S. eriocarpum (Smith, fl. grece. t. 447.) stem twisted, pubescent above; leaves smooth, alternate, oblong, obtuse; stems cymose; flowers axillary, nearly sessile; petals mucronated; calyx glabrous; ovaries hairy. H. Native of Greece. Flowers red.


*** Leaves flat. Flowers purple or red; rarely blue.

28 S. cyanèum (Rud. mem. petersb. 1811. p. 351. t. 2. f. 2.) q 2
CRASSULACEÆ. XVIII. SEDEUM.

stems simple; leaves flat, nearly linear, entire, sessile; cymes leafy.


Blue-flowered Stonecrop. Pl. ½ foot.

29 S. deltoides (Ten. cat. 1819. p. 43.) stems erectish; leaves alternate, flat, deltoidly-cuneiform, unequal, crenated, and toothed; cymes lateral. Native of the Kingdom of Naples, on Monte Novo and Goat's Island. Flowers purpure.
The rest unknown.

Deltoid-leaved Stonecrop. Pl. ½ foot.


31 S. nematodes (Mill. dict. no. 15.) stems erect, fleshy; leaves ovate, quite entire; upper ones stem-clasping; corymbs terminal. Native of Louisiana. There are two varieties of this plant, one with white and another with purple flowers. Said to be allied to S. Telephium and S. Anacampseros.


33 S. pulchrum (Michx. fl. bor. amer. 1. p. 277.) stems assurgent, glabrous; leaves scattered, linear, obtuse; cymes of many spikes; flowers sessile, of 4 petals and 8 stamens. Native of the mountains of Carolina, and Georgia, on the banks of the river Ohio. Flowers purpure. Allied to S. reflexum, according to Pursh, but according to Nutt. to S. ternatum.

Fair Stonecrop. Pl. trailing.


35 S. ibexicum (Stev. in Bieb. fl. taur. suppl. p. 312.) leaves cuneiformly oblong, reuddedly crenated, petiolate, with scabrous margins; cauline leaves opposite; cymes leafy, dichotomous; flowers nearly sessile; petals subulate. Native of the northern part of Iberia, in subalpine places. Flowers reddish. Habit of S. spurium.

Iberian Stonecrop. Pl. ½ foot.

36 S. roseum (Stev. mem. soc. nat. curt. mosq. 3. p. 263.) leaves spatulate-obovate, opposite, quite entire, fleshy, glabrous, imbricated at the tops of the surculi; stems much branched, loose, creeping; cymes terminal; petals lanceolate-subulate. Native of Eastern Caucasus, among stones.

Bieb. suppl. 314. Flowers almost like those of S. spurium, of an elegant rose-colour.

Rose-coloured-flowered Stonecrop. Pl. ½ to ¾ foot.

37 S. spurium (Bieb. fl. taur. 1. p. 852.) leaves cuneiformly-oblong, crenate toothed in front, pubescent beneath, somewhat ciliate; cauline leaves opposite; radical ones in fascicles usually alternate; cymes terminal, compound; petals lanceolate.


38 S. wederi (Lud. fl. alt. ill. t. 58. fl. alt. 2. 191.) leaves opposite, obesely dentilicate, adnate; inferior ones broad-elliptic; superior ones sessile, cordate; cymes terminal, compound; petals lanceolate, acute, a little longer than the stamens. Native of Asia Minor, on the banks of the river Otis. Flowers purpure. Stem rooting at the base.


39 S. telephioideis (Michx. fl. bor. amer. 1. p. 924.) leaves ovate, flat, acutish at both ends, corymb compound, in fascicles. Native of Virginia and Carolma, on the banks of the river Ohio. Flowers purpure. Stem rooting at the base.


40 S. telephium (Lin. spec. 616. 1. β, et γ.) leaves oblong or oval, attenuated at the base, flat, toothed, glabrous; stems erect; cymes corymbose, terminal; stamens not exceeding the corolla. Native of Europe, in exposed places; in Britain on the borders of fields, or in hedges or bushy places, on a gravelly or chalky soil. Smith, eng. bot. 1319. Curt. Lond. 3. t. 25. 210. Oed. fl. dan. 686. Blackw. 191. There are several varieties of this plant:—1, leaves opposite (Anacampseros albida, Haw. syn. p. 111.)—2, leaves in a whorl (Anacampseros triphylla, Haw. syn. p. 111. Sedum triphyllum, Haw.)—3, alternate leaves; flowers purpure (D. C. pl. grass. t. 92. Anacampseros purpurea, Haw. syn. p. 111.)—4, leaves oblong-lanceolate, sharply toothed (Anacampseros arguta, Haw. Sedum argutum, Haw.)—5, leaves cuneately obvate, slightly 4-toothed towards the apex; stems decumbent (Anacampseros paucifid, Haw. rev. p. 24.). All these are referrible to this species. A decotion of the leaves in milk is a forcible diuretic. It has been given in success with the cure of hemorrhoids.


42 S. verticillatum (Lin. amem. 2. p. 352. t. 4. f. 14. exclusive of the synonyme of Ravy.) stems erect; leaves 4 in a whorl, lanceolate, serrated; racemes axillary, few-flowered, shorter than the leaves. Native of Kantschatka. Leaves a finger in length. Flowers small, purple or pink? This species is allied to S. Telephium according to Steuer.


* * * Leaves terete. Flowers white.

43 S. Morangei (H. B. et Kunth, nov. gen. 6. p. 44.) stems branched, creeping at the base, ascending, glabrous; leaves scattered, loosened at the base, thick, fleshy, obtuse; cymes uniflorous; petals nearly sessile; petals 5, oblong-linear, blunthit. Native of Western Europe.
Native of Mexico, near Real de Moran. The colour of the flowers is unknown, but the plant is said to be very like S. Anglicum, and the flowers are therefore perhaps white.

**Moran Stonecrop.** Pl. 1/4 foot.

44 S. A'nglicum (Huds. angl. p. 196.) stems ascending, humble, branched at the base; leaves crowded, alternate, short, ovate, gibbous, loosened at the base, glabrous; cyme branched, few flowered; flowers sessile along the branches; petals acuminate

44 S. a'tritum, but perhaps only a pentandrous variety of S. dasyphyllum, and the flowers are probably white like it.

**Andegaevnny Stonecrop.** Pl. 1/2 foot.

50 S. dasy'phyllum (Lin. spec. p. 618.) stems weak, decumbent; leaves ovate, nearly globose, fleshy, glabrous, opposite, rarely alternate; sterile branches rather imbricated; cymes puberulous, few-flowered, terminal; petals bluish.


51 S. brevi'folium (D. C. r. v. 1808. p. sv. suppl. no. 3615. a, mem. crass. t. 4. f. A.) stems fruticulose, glabrous, twisted at the base; leaves opposite, ovate, obtuse, short, thick; cymes quite glabrous, loose, terminal; petals bluish.

2 H. Native of the Pyrenees and of Corsica, among rocks in dry pastures. S. sphecium, Lapeyr. abr. 1815. p. 259. Sepals of calyx thin, not so in S. dasyphyllum (to which species it is nearly allied) thick.

**Short-leaved Stonecrop.** Pl. 1/4 foot.

52 S. Cor'sicum (Duby, in D. C. syn. fl. fr. ed. 2.) stems ascending, branched at the base, twisted; leaves ovate, obtuse, hispid; sterile shoots crowded; cymes terminal, few-flowered, glabrous; petals acutish.


**Hairy Stonecrop.** Pl. 1/4 foot.

54 S. pilosum (Bieb. fl. taur. 1. p. 352.) stems ascending, leafy; leaves oblong, obtuse, rather fleshy, hairy, alternate; radical ones in fascicles; cymes terminal, coriaceous; petals lanceolate, hardly twice the length of the sepals.

2 H. Native about the port of Caucasus, among rocks. Allied to S. his'tatum, but differs in the sepals of the calyx being twice the length, and in the duration being perennial, not biennial.

**Pilos Stonecrop.** Pl. 1/4 foot.

55 S. his'pantium (Lin. spec. 618.) stems erect, branched, glabrous; leaves scattered, terete, acutish, glabrous; sterile stems rosetulate, crowded; cymes branched; flowers sessile along the branches of the cyme; petals 6, acuminate.


56 S. A'leum (Lin. spec. 619.) branches perennial, rooting, when young rather puberulous; leaves ovately club-shaped, green, nearly terete, glabrous; cymes branched, terminal, sub-


Small-flowered Stonecrop. Fl. June, July. Brit. Pl. ⅓ ft. 58 S. græc'ìle (Meyer, verz. pianz. p. 151.) plant glabrous and green; stems herbaceous, diffuse; leaves subulate, bluntrast, loose at the base, those of the sterile branches imbricated; rays of cyme elongated, much spreading; flowers decandrous, almost sessile; petals acuminate, longer than the calyx; style rather longer than the breadth of the acute capsule. *H. Native of Caucasus. Flowers white.

Var. a, minus (Meyer, l. c.) flowers smaller. On Mount Gugora at the altitude of 3300 feet.

Var. β, majus (Meyer, l. c.) flowers almost twice the size of those of var. a. On the Taulus Mountains, at the altitude of 1400 to 2700 feet.

Slender Stonecrop. Pl. diffuse.


60 S. Atho'um (D. C. prod. 3. p. 407.) stems erect, a little creeping at the base; leaves semi-cylindrical, short, remote, and are, as well as the stem, glabrous; cyme terminal, somewhat corymbose, many-flowered; petals acute. *H. Native on the top of Mount Athos. S. τύργιδιμ, D. Urv. enum. p. 51. exclusive of the synonyms. Flowers white, like those of S. album, but the petals are acute and distinct.

Athos Stonecrop. Pl. ½ foot.

** ** Leaves tereete. Flowers red or blue.

61 S. cœrûleum (Vahl. symb. 2. p. 51.) stem flat on the ground at the base, ascending; leaves oblong, alternate, obtuse, loosed at the base; cymes bifid, glabrous; petals 7, obtuse. *H. Native of Tunis, in the fissures of rocks. Shaw. tin. 550. with a figure. Sims. bot. mag. 2224. Kew. bot. reg. 526. S. azûreum, Desf. fl. atl. 1. p. 392. Flowers not blue, but at first purplish, and fading to blue (f. 28.).


62 S. heptapétalum (Poir. voy. barb. 2. p. 169. dict. 4. p. 630.) stems erect, branched at the apex; leaves ovate-orbicular, scattered, depressedly gibbous; cymes panicled; petals 7, acuminate. *H. Native of Barbary, Corsica, and Malta, on rocks by the seaside. D. C. fl. fr. 4. p. 392. Flowers purplish as in S. cœrûleum, fading to blue. S. heptapétalum, Hornt. hafn. suppl. p. 138. said to be originally from the Russian empire, is perhaps distinct from this species, but is not sufficiently known.

Small-petalled Stonecrop. Pl. ¾ foot.

63 S. bracteatum (Viv. fl. lyb. 24. t. 8. f. 3.) stems erect, branched at the apex, beset with spreading hairs, as well as the leaves; leaves alternate, linear, thick, obtuse; cymes trichotomous; flowers on short pedicels along the branches of the cyme; petals 5, elliptic, keeled. *H. Native of the Great Syrtus, in Libya on the sea shore. The colour of the flowers agrees with that of S. cœrûleum, but the habit is that of S. Hispánicum. Nectariferous scales emarginate.

Braecated-flowered Stonecrop. Pl. ¼ foot.


Var. β, pentándrum (D. C. fl. fr. suppl. p. 524.) stems 5 (especially those that are epipetalous are abortive) or 6; the 4 epipetalous ones of which having vanished.

Villosum Stonecrop. Fl. June, July. Britain. Pl. ½ to ⅓ ft. 65 S. rubens (D. C. prod. 3. p. 405.) stem erect, branched; leaves oblong, obtuse, nearly terete, sessile, spreading, glabrous; cymes branched, pubescent; flowers sessile, unilateral along the branches of the cyme, pentandrous; petals 5, acuminate awned. *H. Native of south and middle Europe, in cultivated sandy fields. Crassula ruîna, Lin. syst. veg. p. 253. D. C. pl. grass. t. 55. S. rubens β pentandrum, D. C. prod. 3. p. 405. Flowers pale red. Mature carpels puberulous. The epipetalous stamens are all or for the most part abortive, and therefore the flowers are pentandrous.


66 S. pube'sulum (D. C. mem. crass. p. 33.) stems erect, branched, puberulous; leaves scattered, terete, acutish, glabrous; cymes branched; flowers sessile along the branches of the cyme; petals 6, acuminate awned. *H. Native of Calabria. This species comes very near S. pilulìdum and S. rubens.

Puberulous Stonecrop. Pl. ½ foot.

67 S. páladium (Bieb. fl. taur. 1. p. 353.) stem erect, branched; leaves oblong, obtuse, nearly terete, spreading, glabrous; cymes branched, pubescent; flowers sessile, unilateral along the branches of the cyme, decandrous; petals acuminate awned. *H. Native of Caucasian. Flowers pale red or white. Mature carpels puberulous.


* • • • • • Leaves terete. Flowers yellow.

69 S. quadrifidum (Pall. itin. 3. p. 730. append. no. 90. t. P. f. 1.) leaves scattered, terete, bluntest; root thick, of many necks; stems numerous, erect, simple; corymbs terminal, few-flowered, simple; pedicels about equal in length; neck of neocarpferous scales exceeding the breadth; flowers octandrous, 4-cleft; stamens a little longer than the petals. Ζ. H. Native of Dahuria, the Ural Mountains, and Altaiam, in humid stony places, on the tops of the Alps. Pall. ed. gall. in 8vo. vol. 8. p. 311. t. 104. f. 4. S. quinquifidum and S. hexatéllum, Haw. rev. p. 26. ? Flowers yellow.


70 S. açere (Lin. spec. 619.) stems rather creeping at the base; branches erect; leaves ovate, adnate, sessile, gibbous, erectish, alternate, glabrous; cymes trifid; flowers sessile along the branches of the cyme; petals lanceolate, acuminate. Z. H. Native of Europe, common on walls, roofs of houses, rocks, and dry sandy ground; plentiful in Britain. Bull. herb. t. 30. D. C. pl. grass. t. 117. Smith, engl. bot. 939. Woodv. med. bot. t. 821. Curt. lond. 1. t. 32. Flowers yellow. The whole plant is acrid, and chewed in the mouth has a hot biting taste; whence, and from its common place of growth, it has the name of wall-pepper. Applied to the skin it blisters, and taken inwardly it excites vomiting. In scorbatic cases and quartern aegies, it is an excellent medicine under proper management. For the former, a handful of the herb is directed to be boiled in eight pints of beer till they are reduced to four, of which 3 or 4 ounces are to be taken every morning. Milk has been found to answer this purpose better than beer. Not only ulcers simply scorbatic, but those of a scrofulous or even cancerous tendency, have been cured by the use of this plant. It is likewise useful as an external application, in destroying fungous flesh, and in promoting a discharge in gangrenes and carbuncles.

**Var. β, diminutum** (Haw. in phil. mag. 1831. p. 416.) much smaller than the species, hardly an inch high; stem creeping. Ζ. H. Native of the higher Alps of Provence; also on Swafian Heath, Norfolk. S. açere glácti, D. C. prod. 3. p. 407. S. glácti, Clarion in D. C. fl. fr. 4. p. 393.

**Var. γ, elongatum** (Haw. l. c.) pendulous branches of 7 inches high; erect ones 4 inches; leaves loosely imbricating.

**Acrid Stenocrop.** Fl. June. Britain. Pl. ½ to ¾ foot.

71 S. sexangularè (Lin. spec. 620.) stems branched at the base, floriferous ones erect; leaves nearly terete, adnate-sessile, usually by threes on the flowering stems, and 3 in a whorl on sterile branches, imbricating in 6 spiral rows; cymes trifid; petals lanceolate, acuminate. Ζ. H. Native of Europe, in dry sandy ground, and on walls. In England, but not common; as near Northfleet, Sheerness, and on the Isle of Sheppy; on Greenwich Park wall on the south side, near the western corner; on the famous Roman walls of Old Sarum; also of Cambridgeshire. D. C. pl. grass. t. 118. Curt. lond. 4. t. 33. Smith, engl. bot. 1646. S. açere β, Huds. Lam. fl. fr. S. spirálæ, Haw. in phil. mag. 1824. no. 176.—Cam. epít. 856. with a figure. Flowers yellow. Habit of S. açere.

**Sixangled Stenocrop.** Fl. June, July. Britain. Pl. ¼ foot.

72 S. Boloniaë (Lois. not. p. 71.) stem branched at the base; floriferous ones erect; leaves nearly terete, obtuse, loosened at the base, glabrous, imbricating on all sides; cymes trifid; flowers sessile, along the branches; petals acuminate. Ζ. H. Native of sandy woods, about Bologna. D. C. suppl. 532. Root creeping. Sepals cylindric, obtuse. Branches of cyme 6-10-flowered. S. chisitósum, Lejeune, fl. spa. Flowers yellow. Perhaps sufficiently distinct from S. sexangularè.

**Bologna Stenocrop.** Pl. ¼ foot.


**Stem-clasping Stenocrop.** Pl. ½ foot.

74 S. rupe'stre (Lin. spec. p. 618.) stems branched at the base, floriferous ones erect; leaves terete-subulate, glaucous, loosened at the base; sterile stems cylindric, densely imbricating; flowers cymose, 5-7-petalled; sepals bluntish. Ζ. H. Native of Europe, on walls and rocks. In England on St. Vincent’s rock, Bristol; on Cheddar rocks, Somersetshire, and upon walls about Darlington. Englt. bot. t. 170. —Dill. elth. 2. f. 333. Reich. icon. 3. f. 459. S. minus, Haw. in phil. mag. 1825. p. 174. ? S. réflexum, D. C. pl. grass. t. 116. Flowers yellow (f. 29.)


75 S. sectangula're (Haw. syn. 116. and in phil. mag. 1834. p. 175.) glaucous; leaves imbricating in 7 rows, incurved, spreading, middle-sized, acute. Ζ. H. Native of Europe. Flowers yellow. S. rupestrè β, septangulare, D. C. prod. 3. p. 407. S. rupestrè, D. C. pl. grass. t. 115. Very like S. coeruleóscens, but is distinguished by the shorter and hardly subulate leaves, and in being more branched, and the branches shorter.

**Seven-angled Stenocrop.** Fl. June, July. Clt. 1795. Pl. ½ ft.

76 S. al'éscens (Haw. rev. succ. p. 28.) stems branched at the base; flowers erect; leaves terete-subulate, glaucous, loosened at the base; sterile stems elongated, with spreading leaves; flowers cymose, 5-7-petalled; sepals lanceolate. Ζ. H. Native of England and Denmark, on barren sandy hills and walls. In England, especially on the sides of some rough hills near Middenhall, Suffolk. S. glácti, Smith, engl. fl. 2. p. 321. engl. bot. 2471. but not of Waldst. et Kit. S. réflexum, fl. dan. t. 113. Flowers yellow.


77 S. Forsteri'ænum (Smith, comp. 71. engl. bot. 1802.) stems branched at the base; flowers erect; leaves semicylindric, bluntest, green tinged with red; sterile stems short; leaves crowded, somewhat rosulate at the tops of the branches; flowers cymose, 5-7-petalled; sepals obtuse. Ζ. H. Native of Wales, on rocks at the falls of Rhydoll, near the Devil’s bridge, Cardiganshire; on the rocks of Hisval, overhanging the little valley of Nant-Phrancon. S. Forsteriæ, Haw. syn. p. 117. S. rupestrè, D. C. pl. grass. 115. Flowers yellow.

**Forster’s Stenocrop.** Fl. July, Aug. Wales. Pl. ½ foot.

78 S. réflex'um (Lin. spec. 618. Smith, fl. brit. p. 490.) stems branched at the base; floriferous ones erect; leaves terete-subulate, green, loosened at the base; sterile shoots somewhat
cylindrical, spreading; flowers cymose, 5-7-petalled; sepal tips bluish. 2. H. Native of Europe, in fields and on walls; in Britain on walls and thatched roofs, abundant. Smith, engl. bot. t. 695.—Park. theat. 1. t. 734. f. 1. Flowers yellow.

Var. β, recurvatum (D. C. prod. 3. p. 408.) leaves glaucous; sterile stems somewhat reflexed. S. recurvatum, Willd. enum. suppl. 23. Perhaps a variety of S. albescens, according to Haw.

For. ε, cristatum (D. C. l. c.) leaves glaucouse; sterile stems spreading. S. collinum, Willd. l. c. p. 25. S. elegans, Lejeune fl. sp. 1. p. 205.?

For. γ, collinum (D. C. l. c.) leaves glaucous; sterile stems spreading. S. collinum, Willd. l. c. p. 25. S. elegans, Lejeune fl. sp. 1. p. 205.?


79 S. virens (Ait. hort. kew. 2. p. 110.) leaves scattered, subulate, green, loosened at the base; flowers cymose, petals lanceolate, much longer than the sepals. 2. H. Native of Portugal. S. reflexum, Willd. enum. suppl. p. 25. S. crassi-caule, Link. enum. 1. p. 498. Flowers yellow. Very like S. reflexum, and probably only a variety of it.


80 S. virens (Willd. enum. suppl. p. 25.) stems branched; floriferous ones erect; leaves terete-subulate, those of the sterile branches spreading and glaucous; flowering stems spreading, compressed; branches of cyme crowded, erect. 2. H. Native of Siberia. The leaves, according to Haw. in rev. p. 29. are green, and the flowers nearly white; but according to Willd. 1. e. the leaves are glaucose, and the flowers greenish-yellow, therefore two species are probably confused under this name, and perhaps both are only varieties of S. reflexum.


81 S. subcylindricum (Haw. in phil. mag. 1831. p. 414.) leaves imbricate, rostrate at the tops of the branches, somewhat glaucous, turgid, green, attenuated towards the apex, and acute. 2. H. Native of North America. Flowers not seen. From habit this species appears to come nearest S. Forsterianum.

Subcylindric-leaved Stonecrop. C1t. 1830. Pl. ½ foot.

82 S. stenopterulum (Pursh, fl. amer. sept. 1. p. 324.) stems assurgent, glabrous; leaves scattered, crowded, adnate-sessile, compressed, subulate, acute; cymes terminal, trichotomous, and dichotomous; spikes recurved; flowers sessile, decandrous; petals 5, linear, much longer than the calyx. 2. H. Native of North America, on the banks of Clark’s river, and on the Kooskoosky; and frequent on the east side of the Rocky Mountains. Flowers golden yellow. Said to be allied to S. reflexum.


83 S. coryle-sens (Haw. in phil. mag. 1825. p. 174.) leaves long, spreading, subulate, acute, bluish-glaucous, flattish above. 2. H. Native country unknown. Very like S. altissimum, but not half the size, more bluish-glaucous; leaves more distant, petals more acute, pale yellow.


84 S. altissimum (Poir. dict. 4. p. 631.) stems fruticosum, branched at the base; floriferous ones erect; leaves nearly terete, acute, glaucous, glabrous: superior ones scattered, flattish above; those of the sterile branches imbricated; cymes branched, many-flowered; flowers sessile along the branches of the cyme, which are twisted at the apex; petals 6-8, lanceolate, acute, spreading. 2. H. Native of the south of Europe. D. C. pl. grass. t. 116. Semprevivum, sediforme, Jacq. hort. vind. t. 51. and var. monstrosa, mic. t. 135. t. 5. S. fruticosum, Brot. fl. lus. 2. p. 206. S. rupestris, Tenore. fl. neap. t. 41. S. Nicaënsis, All. pedem. no. 1752. t. 90. f. 1. S. Jacquinii, Haw. in phil. mag. 1825. p. 174. S. rupestris, Gouan. S. dioicium, Donn, hort. cant. Flowers cream-coloured. Lobes of calyx bluish. A strong, bluish-glaucous plant.


85 S. ochroleuca (Smith, in Lin. trans. 10. p. 7.) stems branched; leaves glaucous, scattered, acute: lower ones terete; upper ones elliptic, depressed; cymes branched, many flowered; flowers sessile along the branches of the cyme; calyce segments acutish; petals oblong-spatulate. 2. H. Native of the south of Europe. S. altissimum, ochroleucum, D. C. prod. 3. p. 408. Flowers pale yellow. Very like S. altissimum, but rather larger.


86 S. anopetalum (D. C. rupl. 2. p. 80. suppl. fl. fr. p. 526. mem. crass. t. 8.) stems branched at the base, erect; leaves nearly terete, rather depressed, loosened at the base, glaucous, mucronate; those of the sterile branches imbricated; cyme 4-5-5, corymbose; petals lanceolate, acuminate, erect. 2. H. Native of the south of France, on calcareous rocks, and among stones. Bauh. hist. 3. p. 428. S. Hispanicum, D. C. fl. no. 1326. but not of Lin. S. rupestris, Vill. dauph. 3. p. 678. but not of Lin. S. anopetalum, Spreng. syst. 2. p. 435. exclusive of the synonyme of Tenore. Flowers cream-coloured. There is also a variety with orange-coloured flowers, according to Haworth.


87 S. urvillei (D. C. prod. 3. p. 408.) stems glabrous; erect, creeping; and branched at the base; leaves scattered, nearly terete, obtuse, dilated, and stem-clasping at the base; cyme 2-3-cleft; flowers sessile along the branches; petals acuminate awned. 2. H. Native of the Island of Lazzaretto. S. pallidum, D’Urv. enum. p. 51. but not of Bieb. Flowers yellow. Capsules pale, somewhat stellate.

D’Urvilie’s Stonecrop. Pl. ½ foot.

88 S. virens (Haw. in phil. mag. 1827. p. 183.) leaves erectish, linear-subulate, green, somewhat mucronulate on one side. 2. H. Native country unknown. Very like S. virens, and S. recurvatum, Willd. but the leaves are a little larger and flatter, greener and blunter. It is less than S. anopetalum.


89 S. litoreum (Guss. pl. rar. p. 185. t. 37. f. 2.) stem erect, branched at the base; branches ascending; leaves spatulate-cuneate, semiterete, obtuse, glabrous; flowers sessile, lateral, solitary. 2. H. Native of Calabria, among rubbish by the sea-side. Flowers pale yellow, alternate. Petals a little longer than the calyx, linear-lanceolate.

Sea-shore Stonecrop. Pl. 2 inches high.


91 S. tentæ (Meyer, verz. pl. 152.) plants glabrous, glaucous; stems herbaceous, erectish; leaves subulate, blun-

ish, loose at the base; those of the sterile branches imbricated; rays of cyme short, few-flowered, coricate; flowers deciduous,
s

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CRASSULACEjE.

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above; cymes trifid, many-flowered; petals lanceolate.
©. H.
ex Desf. fl. atl. 1. p. 360. Native of Tunis, in the fissures of
rocks.
Petals yellow, pubescent on the outside.
Pubescent Stonecrop.
PI. ^ foot.
94 S. hispidum (Desf. fl. atl. 1. p. 361. but not of Poir.)
leaves scattered, nearly
stem erect, branched above, hispid
terete, depressed above, spreading
branches of cyme filiform,
;

;

flowers pedicellate; petals 5-6, lanceolate,
acute.
Native of the north of Africa, on Mount Atlas. S.
Atlanticum, Pers. ench. no. 35.
S. filiforme, Poir.
Flowers
golden yellow.
;

Hispid Stonecrop.

PI.

-A-

121
flowers

;

* *

100

S.

racemes
ceolate.

Shrubby

species.

petals 5,

Herbaceous plants.

in Spreng. neue. entd. 3. p. 161.) floleaves lanceolate, acute, quite entire
subfastigiate ; pedicels short, secund
petals 6, lanNative of Palestine. The rest unknown.
;

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;

High Stonecrop.
101 S. Torre' yi

PI.

foot.

1

leaves roundish,

;

flat,

scattered

entire,

;

cymes terminal, trichotomous.
H. Native near the Rocky
1/
Mountains. Sedum, nov. spec. Torrey. in amer. lyc. new vork.
.

2. p.

205.

Torrey'

Stonecrop.

PI.

?

102 S. linea're (Thunb. fl. jap. 187.) stem glabrous, a little
branched leaves terete, linear, opposite, stem-clasping, acute,
spreading
cyme trifid. Native of Japan. Flowers yellow.
;

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Ziwear-leaved Stonecrop.
PI. ^ foot.
103 S. tene'llum (Bieb. fl. taur. suppl. p. 315.) stems
branched at the very base
floriferous ones erect
leaves scattered, oblong, obtuse, nearly terete, loosened at the base corymb
simple, few-flowered
petals 5, lanceolate-subulate, twice the
length of the calyx. ©.H.
Native of Caucasus, on the alps.
Flowers smaller than those of S. album, but the colour is un;

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;

;

known.
PI.

^

foot.

arista'tum (Vill. dauph. 4. p. 680. t. 45.) stems lying
on the ground at the base floriferous ones erect leaves terete,
acute at both ends, loosened at the base
those of the sterile
stems densely imbricated cymes few-flowered petals 5, acuminately awned.
H. Native of Dauphiny, near Segoyer.
1/
Petals white.
Perhaps only a variety of S. anopetalum.
Awned-petdA\ed Stonecrop.
PI. A to ^ foot.
105 S. pruina'tum (Brot. fl. lus. 2. p. 209.) stem erect,
branched at the base, glabrous, glaucous, pruinose leaves fleshy,
oblong, convexly flattish, loosened at the base
cymes bifid
sepals and petals 6, lanceolate, acuminated, spreading.
©. H.
Native of Portugal. Sempervivum pruinatum, Spreng. syst. 2.
Colour of flowers unknown.
p. 169.
Frosted Stonecrop.
PI.
foot.
106 S. confe'rtum (Delil. fl. eg. ill. no. 451.) leaves subulate, scattered, crow'ded.
Native of Egypt, about Cairo. Sedum
The rest unknown.
Crowded- leaved Stonecrop. PI. A foot.
S.

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Flowers white.

a'ltum (Clark,

stems erect

riferous

104

t Species not sufficiently known.

bractless

sessile,

.

Slender- Stonecrop.

foot.

secund,

D. G. Native of Mexico.
Habit of a species of Sempervivum.
Shrub \ foot.
Bractless Stonecrop.

lanceolate.

Flowers orange-coloured.
tude of 3000 feet.
Tender Stonecrop. PI. 1 foot.
92 S. re'pens (Schleich. in D. C. fl. fr. suppl. 525.) stems
leaves scattered,
ascending, creeping, and branched at the base
H.
semiterete, obtuse; cymes few-flowered ; petals ovate.
1/
S. Guettardi, Vill. dauph. 3.
Native of the higher Pyrenees.
S. rubens, Haenk. sud. 114?
t. 45. exclusive of the synonymes.
S. Monregalense, Balb. ?
S. annuum, All. pedem. no. 1703.?
S. atratum fi, D. C. fl. fr. no. 3615. An intermediate plant bePetals pale yellow.
tween S. atratum and S. saxatile.
Clt. 1817.
PI.
foot.
93 S. pube'scens (Vabl. symb. 2. p. 52.) stem erect, branched,
leaves alternate, elongated, obtuse, rather pilose
pubescent

—

XVIII. Sedum.
thyrse panicled

rather shorter than the pedicels ; petals acute, longer than the
calyx ; capsule truncate at the apex, and apiculated by the short
Native of Caucasus, in stony places, at the altistyles.
1/ . H.

rather panicled

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;

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95 S. nu'dum (Ait. hort. kew. 2. p. 112.) stem shrubby,
branched, erectish ; branches twisted, glabrous ; leaves scattered, oblong-cylindrical, obtuse ; cymes terminal, and are as
T?
well as the calyxes glabrous.
D. G. Native of Madeira.
Petals 5, yellow, lanceolate.
Scales orange-coloured, thick, and
Leaves almost like those of S. album.
obtuse.
96 S. laxiflorum (D. C. prod. 3. p. 409 ) stem shrubby,
branched, ascending, glabrous
branches twisted ; leaves scattered, ovate-cylindrical, thick, obtuse, glabrous
cymes loose,
divaricate
flowers pedicellate, beset with glandular pubescence.
D. G. Native of TenerifFe. Petals small, apparently white.
Sepals broad.
Lax-fiowered Stonecrop. Shrub 1 foot.
97 S. oxypetalum (H. B. et Kunth, nov. gen. amer. 6. p.
45.) stem shrubby, glabrous, branched ; leaves alternate, flat,
quite entire, obovate-spatulate, rounded at the apex, and somewhat emarginate ; cymes terminal, somewhat dichotomous
flowers secund, sessile ; petals 5, linear, each ending in a narrow
acumen.
• E.
G. Native of Mexico, in gardens. Flowers
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reddish.

Sharp-petalled Stonecrop.
Shrub 5 feet.
98 S. denbroideum (Moc. et Sesse, fl. mex. icon. ined. ex
D. C. prod. 3. p. 409. mem. crass, t. 9.) stem shrubby, branched,
erect
leaves scattered or opposite, obovate-cuneated, glabrous
those of the sterile branches rosulate
thyrse panicled, much
;

;

divided

;

flowers secund, sessile, bractless

;

petals 5, lanceolate.

D. G.

Native of Mexico.
Flowers yellow. Very like a
species of Sempervivum.
Tree-like Stonecrop.
Shrub 1 to 2 feet.
99 S. ebractea'tum (Moc. et Sesse, fl. mex. icon. ined. ex
D. C. prod. 3. p. 409. mem. crass, t. 6. f. /3.) stem shrubby,
fleshy, twisted at the base, creeping
flowering stems erect
leaves scattered, glabrous, ovate, thick, obtuse
those of the
flowering stems spreading, those of the sterile stems imbricated
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VOL.

III.

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107 S. Quite'nse (H. B. et Kunth, nov. gen. amer. 6. p. 46.)
stems herbaceous, glabrous
leaves alternate, flat above, convex beneath, spatulately-lanceolate, acutish, quite entire racemes elongated flowers pedicellate petals 5, oblong, acuminated. 7/ D. G. Native of South America, among rubbish,
near Guamcabamba, and on the walls of the town of Quito.
Flowers orange-coloured.
Perhaps a species of Echeveria.
There is a variety of this plant having the leaves margined
with red.
PI. ^ foot.
Quito Stonecrop.
108 S. bi'color (H. B. et Kunth, 1. c. p. 45.) stem herbaceous, glabrous leaves alternate, flat, obovate-spatulate, acutish,
quite entire
racemes terminal, flowers pedicellate petals 5,
oblong, acute.
Native near Caraccas, in humid
1£. D. G.
places, and among rocks at Meneses, near Pasto.
Petals yellow
inside, and red or orange-coloured outside. Perhaps the flowers
are truly racemose, and the plant is therefore probably a species
of Echeveria.
Two-colour ed-fi owered Stonecrop.
PI. \ foot.
109 S. Borya'num (D. C. prod. 3. p. 410.) stems naked,
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erect; flowers yellow, disposed in short recurved spikes; leaves linear, scale-formed, reflexed.—Native of Spain, on the rocks called Borrequislos, in Sierra Nevada. Perhaps a species of Sempervivum, ex Bory. ann. gen. 3. (1820) p. 14. The rest unknown.

Bory's Stonecrop. Pl. ½ foot.
110 S. melananthæ rum (D. C. prod. 3. p. 410.) stems weak; leaves ovate, attenuated at the apex; flowers in corymbose panicles.—Native of Spain, in Sierra Nevada, on the rocks of Borrequislos. Flowers small, densely paniced, rather sweet scented. Antlers black. The rest unknown.

Black-aneathed Stonecrop. Pl. ½ foot.
† Species only known by name.
1 S. stoloniferum (Gmel. itin. 3. t. 35. f. 2.)
2 S. lilacium (Led. ex Steud. nom.)
3 S. procumbens (Schrak, hav. p. 726.)
4 S. Monregalense (Balb.)
N.B. Rhodiola biternata, Lour. coch. p. 627, is totally different from Rhodiola, Lin. and is perhaps a plant belonging to Sepiandaece.

Cult. The greater part of the species being quite hardy, and all succulent, they therefore succeed best on rock-work, for which they are well adapted. Some of the rarer kinds may be grown in small pots. They succeed best in light, sandy soil, or one composed of loam and brick rubbish. All are readily increased by cuttings. The seeds of the annual species only require to be sown on rockwork. There are a few of the species marked greenhouse; these will require the same treatment as that recommended for the species of Globularia, see p. 106.

XIX. SEMPERVIVUM (from sempervivo, to live for ever; the tenacity of life of the Houseleek tribe is well known). Lin, gen. no. 612. Lam. ill. t. 413. D. C. in bull. philom. no. 49. prod. 3. p. 411.

Lin. syst. Dodecánandra, Dodecagynía. Calyx 6-20-parted. Petals 6-20, oblong, acute. Stamens double the number of the petals. Scales at base of carpels toothed or jagged at the apex. Carpels equal in number to the petals.—Herbs sometimes stemless, with young plants rising from the axils; or calecent, without any young plants; or shrubby and flaccid. Leaves usually revolute. Branches of cymes sometimes disposed into a corymb, and sometimes into a panicle. Petals yellow, white, or purplish.

Sect. I. Chronòbium (χρονός, chronos, time, and βιος, bious, to live; plants living only for a time, and are not so tenacious of life as those of the following section). D. C. pl. rar. gard. gen. no. 21. Young plants, none from the axils. Flowers usually yellow, rarely white. Species all natives of the Canary Islands.

* Shrubby species.

1 S. aizoides (Lam. dict. 3. p. 290.) stem frutescent, erect, branched; leaves scattered, obovate, flat, quite entire, glabrous; flowers corymbose; petals 5-8, spreading. ½. D. G. Native of Madeira. Sedum aizoides, D. C. pl. grass. t. 4. Sédum diversicàtum, Ait. hort. kew. ed. 1. vol. 2. p. 108. Perhaps also Anacàmpseros diversicàta, Haw. syn. p. 113.? Flowers yellow.


3 S. villòsum (Haw. syn. p. 166. rev. 65. but not of Ait.) stem frutescent, erect, twisted; leaves oblong-obovate, crowded, gibbous beneath, villous; scales of flower fringed. ½. D. G. Native of the Canary Islands. Flowers yellow. Leaves 5 lines long and 3 lines broad. S. villòsum, Ait. is referrible to S. stellàtum.

4 S. cilìatum (Wild. enum. 1. p. 508. mem. crass. t. 10.) stem frutescent, glabrous; leaves oblong-obovate, somewhat spathulate, mucronate, cartilagineously ciliated; thyrse paniced, having the branches crowded, with flowers at the apex; petals 6-7. ½. D. G. Native of the Canary Islands. Coll. hort. rip. append. 4. t. 7. Flowers pale yellow.

Ciliated-leaved Houseleek. Clt. 1815. Shrub 1 to 1½ feet.

6 S. glutinòsum (Ait. l. c. p. 147.) stem frutescent; leaves cuneiform, hispid, rather scattered, fringed with adpressed, cartilagineously ciliate; petals 8-10. ½. D. G. Native of Madeira. Jacq. hort. schönb. 4. t. 464. Sims, bot. mag. t. 1965. Ker. bot. reg. t. 294. Branches of panicle loose. Flowers golden yellow. The stem rises to the height of 2 feet, and even more, according to Prince de Salm-Dyck. The fishermen of Madeira rub their nets with the fresh leaves of this species, by which they are rendered as durable as if tanned, provided they are steeped in some alkaline liquor. (f. 30.)

7 S. vèrècum (C. Smith, ms. Horn. suppl. p. 66. Haw. in phil. mag. 1827. p. 125.) stem frutescent, erect, leafy at the top; leaves broad, cuneiform, glabrous, cartilagineously ciliated on the margins, running into the petiole at the base, broad and blunt at the apex, and ending in a small point. ½. D. G. Native of the Canary Islands, on the walls of towns and the roofs of houses. Leaves green. Flowers yellow. Perhaps the same as S. latifòlum. Hoffm. verz. 2. p. 208. Haworth's plant is probably the same as that of Hornemann.

8 S. retùsum (Haw. in phil. mag. 1827. p. 125.) stem frutescent, simple, leafy at the apex; leaves broadly cuneate, expanded, smooth, ciliate, somewhat cuneate at the apex, truncate and retuse. ½. D. G. Native of Teneriffe, on walls and the roofs of houses. Flowers yellow. Very like S. ursìcum, but differs in the form of the leaves.

Smith, fl. græc. 473. Shrubs from 3-6 feet. Flowers golden yellow.

Var. β, variegatum; leaves margined with white or purple.

Tree Houseleek. Fl. Mar. Dec. Clt. 1640. Sh. 3 to 6 ft. 10 S. fruticæs (Haw. phil. mag. 1857. p. 125.) stem shrubby, simple; leaves crowded in a rosulate manner at the tops of the branches, spathulately cuneate, green, ciliated. ¹⁺. D. G. Native of Teneriffe. Flowers yellow. Very like S. arboresum, but the plant is not above half a foot high.

Frutescens Houseleek. Fl. Mar. Dec. Clt. 1824. Pl. ¾ to 1 ft. 11 S. Table-forhæm (Haw. suppl. p. 69. rev. 69.) stem frutescens, erect, simple; leaves spatulate, flat, ciliated, attenuated at the base, crowded at the top of the stem, and forming a rosulate flat disk, in consequence of the leaves being so closely imbricated over each other. ¹⁺. D. G. Native of Madeira. Stems branching after the first time of flowering. Petals 10-12, linear-lanceolate, very pale sulphur-coloured. Glands minute, pedunculate.

Table-formed Houseleek. Fl. Jul. Jul. Clt. 1817. Pl. 1 ft. 12 S. Canariense (Lin. spec. p. 604.) stem short, frutescens; radical leaves expanded, rosulate, obturately-spataluate, villous, large; leaves scattered along the flowering stem, ovate; branches of panicle expanded; flowers pedicellate; petals 9-10. ¹⁺. D. G. Native of the Canary Islands.—Comm. hort. amst. 2. t. 95. D. C. pl. grass. t. 141. Petals white, linear.


Var. β, hybridum (Salm-Dyck, and Haw.) all parts of plant larger.

Bearded Houseleek. Fl. Jul. Aug. Clt. 1815. Sh. 1 to 2 ft. 15 S. caespitosum (C. Smith, in hort. berol. p. 38.) stem frutescens, very short, at length a little branched, leafy at the apex; leaves oblong-linear, glabrous, stiffly ciliated, marked with brown lines on both surfaces, crowded in a rosulate manner, but the ciliate ones are scattered; flowers in cymose corymbs, with the branches dichotomous; petals 7-8, spreading. ¹⁺. D. G. Native of the Grand Canary Island, on rocks on the highest mountains. D. C. rapp. jard. bot. 1822. no. 13. S. ciliare, Sims, bot. mag. t. 1785. but not of Wild. S. ciliare, Haw. rev. p. 64. S. Simsi, Sweet, hort. suburb. p. 230. S. barbatum, Horn. suppl. p. 61. but not of Smith. Flowers yellow. This plant survived 18 months in paper in the herbarium of C. Smith, and afterwards when put into the earth grew.


16 S. Dordanale (Wildl. enum. p. 508.) stem herbaceous, erect, glabrous; leaves flat, glabrous, quite entire; radical ones obovate, attenuated at the base, disposed in a spreading rosulate manner; ciliate ones erect, oval, sessile, obtuse at both ends; cymes corymbose; petals 20. ¹⁺. D. G. Native of the Canaries. D. C. mem. crass. t. 11. Pedicels puberulous. Corymbs few-flowered. Petals linear; pale when dried.


Stellate Houseleek. Fl. Jul. Aug. Clt. 1790. Pl. ¼ foot. 20 S. dichotomum (D. C. jard. gen. t. 21.) stem herbaceous, terete, erect, dichotomous, beset with soft spreading hairs; leaves obovate-spataluate, tapering into the petiole, dotted with soft villi; flowers in loose corymbs; petals 8-9, spreading; scales of flower 2-lobed, small. ¹⁺. D. G. Native of the Canary Islands, among rocks. S. laxum, Haw. rev. 65. Nearly allied to S. hisimum, ex Buch. cat. Flowers yellow. This plant is nearly allied to S. tortuosum, but differs in being herbaceous.


P zwyiny Houseleek. Pl. 1 inch.

Sect. II. Jovibarba (Jupiter, Jovis, Jupiter, and barba, a beard; Jupiter's beard; application not evident). D. C. pr. gen. no. 21. obs. prod. p. 341. Young plants rising from the axis of the lower leaves. Flowers purplish or pale yellow.—European species.

* Flowers yellowish.


Var. β; offsets rather loose; petals 12. ¹⁺. H. Sims, bot. mag. 2115. More villous and pale than the species.
**CRASSULACEÆ.**


obelisci, or leaves. 

**September.**

**Flowers purplish.**

24 S. **tectorum** (Lin. spec. p. 664.) leaves ciliated; offsets spreading; petals 5-9, spreading; scales of flowers cuneiform, carunculate. 2. H. Native of Europe, on rocks and roofs of houses; also in many parts of Britain, on walls and cottage roofs, but perhaps not properly indigenous. D. C. pl. grass. t. 104. Smith, engl. bot. 1320. Curt. lond. 3. t. 29. Oed. fl. dan. 601. Blackw. t. 366. Sèdum tectorum, Scop. cart. ed. 2. no. 529. Flowers purplish. Stems sometimes changed into carpel according to Pet. Thours, in bull, phil. nov. 1807. The juice of the common house-leek either applied by itself, or mixed with cream, gives present relief in burns, and other external inflammations; it is also said to cure corns. With honey it is a useful application in the throat. Boerhaave found 10 ounces of the juice beneficial in dysenteries, and others have found it useful in gonorrhæa; but it is not admitted into modern practice. The house-leek had several names formerly, as sengreen and aygreen, both translations of Semprevium. It has also been called Jupiter's eye, bulbuck's eye, and Jupiter's beard. In German it is called hauswurz; in French la grande joubarde, and in Italian sempervivo maggiore.


25 S. **flagelliforme** (Fisch. in Link, enum. 2. p. 20.) leaves ovate, mucronate, papillosé, with papillously ciliated margins; offsets spreading, lateral; branches of cyme bifid. 2. H. Native of Siberia. Allied to S. montanum, but differs in being larger, and in the offsets being at the ends of long flagella. The leaves of the offsets terminate in a stiff brown point; caule leaves narrower. Corolla reddish.


26 S. **montanum** (Lin. spec. p. 665.) leaves of the offsets obovate-oblong, shortly acuminate, beset with glandular pubescence on both surfaces, obsolescently ciliated, entire, pubescent; offsets rather contracted; flowers rotate; petals 10-14, lanceolate, acuminate, spreading, 3 times longer than the calyx, scales of flowers small, nearly quite entire; style discoloured at the apex. 2. H. Native of the Pyrenees and the Alps of Europe, &c. on rocks. D. C. pl. grass. t. 105. Jacq. fl. aust. 5. append. t. 41. Flowers deep red. This species differs from S. tectorum in the smaller stature, and in the nectariferous scales being almost wanting; and from S. arachnoideum in the absence of the cobwebbed wool. Scales of flower red and retuse.


27 S. **Funkii** (Braun, in bot. zool. Jan. 1832. p. 4. t. 1.) leaves of the offsets oblong, shortly acuminate, beset with glandular pubescence on both surfaces, with ciliated margins; flowers rotate; petals lanceolate, acuminate, about 3 times longer than the calyx; germins dilated, ovate; style discoloured at the apex. 2. H. Native of the Alps of Europe, as in Switzerland, Piedmont, &c.


28 S. **arachnoideum** (Lin. spec. 665.) leaves covered with interwoven cobwebbed hairs or wool; offsets globose; petals 8-9, spreading; scales of flower truncate emarginate. 2. H. Native of the Alps of Europe and the Pyrenees, &c. among rocks. D. C. pl. grass. t. 106. Curt. bot. mag. t. 68. Jacq. austr. 5. append. t. 42. Flowers purple.


29 S. **fulmidum** (Bieb. fl. taur. 1. p. 381.) leaves lanceolate, acute, ciliated by long hairs; offsets globose; stem few-flowered; petals 12, hairy. 2. H. Native of Caucasus, at the torrent of Terek, on rocks. Flowers red. Very like S. arachnoideum, but differs in the hairs on the leaves being distinct, not cobwebbed.


**Fine-leaved House-leek.** Pl. ½ foot.


† **Species hardly known.**

32 S. **africanum** (Mill. dict. ed. 8. no. 7.) margins of leaves serrately toothed; offsets spreading. 2. D. G. Native of the Cape of Good Hope. Haw. syn. p. 367. This species has never been seen except by Miller; it is therefore doubtful. Sprengel says it is the same as S. arboréum.

**African House-leek.** Clt. 1768. Shrub.

33 S. **seguei** (D. C. prod. 3. p. 414.) stem herbaceous, erect; leaves opposite, obovate.—Native on Mount Baldo. Sèdum perterræum, &c. Scarella in Seg. ver. 2. p. 360. t. 17. S. stellatum, Poll. fl. ver. 2. p. 114. exclusive of the synonyme of Smith. It is probably a variety of Sèdum dasyphylæum, but the flowers are said to be yellow. The plant is therefore very doubtful.

**Seguer's House-leek.** Pl. ½ foot?

34 S. **hispanicum** (wild. enum. p. 508.) leaves subulate, semi-terete, ciliate, imbricated; cymes bifid. 2. H. Native of Spain. The rest unknown. Perhaps a species of Sèdum.

**Spanish House-leek.** Pl. ½ to ¾ foot.

35 S. **clavulatum** (Sieb.) These two species are only 36 S. muta'nil ex Schlecht. † known by name.

**Cult.** The greenhouse kinds of house-leek are chiefly natives of the Canary Islands. A mixture of sand, loam, and brick-rubish is a good soil for them; and care must be taken not to give them too much water when not in flower. Cuttings taken off the plants, and laid to dry a few days, will strike root freely without any covering of glass. Cuttings of some species are difficult to obtain, such as of S. tabuliforme, &c.; the best way in such cases is to cut the top out, and lateral shoots will be immediately produced. The hardy kinds are well fitted for rock-work, or to grow on walls; and they are easily increased by the offsets, which are issued in great abundance. A light soil suits them best.

**TRIBE II.**

**CRASSULA'E ANOMALÆ** (the plants contained in this
XXI. PENTHORUM (from πεντα, pente, five, and ἄπατος, apate, a boundary; in reference to the 5 leaves which terminate the capsule). Lin. gen. no. 580. Gærtn. fruct. 1. p. 312. t. 65. D. C. prod. 3. p. 414.

Lin. syst. Decandra, Pentagynia. Calyx 5-parted. Petals 5. Stamens 10. Scales wanting? Carpels 5, united at the base, in a 5-seaked 5-celled capsule, which is pentagonal at the apex, and opening under the beaks. Seeds numerous, small, fixed on every side of the broad placenta, and probably exalbominous. —Erect perennial herbs, with scattered, membranous, oblong-linear, unequally serrated leaves: and unilatral cymes, which are turned back at the points. 1. P. sedoïdes (Lin. spec. p. 620.) stem a little branched; leaves lanceolate; cymes numerous, panicked, many-flowered; seeds scrobiform. 2. H. Native of North America, in bogs, from New England to Carolina, and on La Grande Chaudière. Lam. act. ups. 1744. t. 2. Lam. ill. t. 390. Flowers white or pale yellow.

Stonecrop-like Penthorum. Fl. July, Aug. C1t. 1768. Pl. 1 ft. 2. P. Chinensis (Pursh. fl. amer. sept. 1. p. 323. in obs.) stem simple; leaves long, linear-lanceolate; cymes few, corymbose, few-flowered; seeds ovate, horny. 2. H. Native of China. D. C. mem. crass. pl. 13. Very like P. sedoïdes, but the seeds are certainly distinct. Stems, as in it, terete at the base, and angular at the apex.

China Penthorum. Pl. 1 foot. Cult. The species of this genus grow freely in light sandy soil, and are easily increased by dividing at the roots. Cuttings also strike freely under a hand-glass. P. Chinensis, if ever it should be introduced to the gardens, will require protection in winter until its hardness be ascertained.


Calyx constantly of a definite number of sepalos, usually 5, but varying from 4 to 8, more or less united at the base, either cohering with the ovary, or almost distinct from it, equal or unequal, quincuncial or valvate in stivation. Petals indefinite, coloured, narrow, a little combined at the base, sometimes wanting, but in that case the inside of the calyx is coloured. Stamens indefinite, arising from the calyx, distinct; anthers oblong, incumbent. Ovarium distinct, or adnate to the calyx, many-celled, crowned by numerous distinct stigmas. Capsule either girdled by the fleshy calyx or naked, usually many-celled, but often 5-celled, opening in a stellate manner at the apex. Seeds attached to the inner angle of the cells, definite or indefinite. Embryo lying on the outside of a mealy albumen, curved.—Shrubby or herbaceous plants, variable in habit. Leaves fleshy, opposite, simple. Flowers usually terminal.

The curved embryo and mealy albumen, along with the superior calyx, and distinctly perigynous stamens, characterise these among their neighbours, independently of their succulent habit. With Crassulaceæ, Chenopodiaceæ, and Caryophyllaceæ they are more or less closely related. Reumurioæ and Nitrariiæ are families different in affinity. The hottest sandy plains in the Cape of Good Hope nourish the largest part of this order. A few are found in the south of Europe, north of Africa, Chili, China, Peru, and the South Seas. The succulent leaves of a few of the species are eaten, as of Tetragonia expansa, Mesembryanthemum edule, and Sesuvium portulacastrum; others yield an abundance of soda. Mesembryanthum nodiflorum is used in the manufacture of Moroquin leather.

Synopsis of the genera.

1 Mesembryanthemum. Calyx of 5, rarely of 2-8 sepalos. Petals indefinite, linear. Stamens indefinite, inserted in the top of the calyx along with the petals. Capsule adnate to the calyx, from 4 to many-celled; cells many-seeded.

2 Tetragonia. Calyx 4, rarely 3-cleft; lobes coloured inside. Petals wanting. Stamens variable in number. Capsule 3-8-celled; cells 1-seeded.


4 Aizoon. Calyx 5-parted, coloured inside. Petals wanting. Stamens about 20, inserted in the bottom of the calyx, 3-5 in each fascicle. Capsule 5-celled; cells many-seeded.

5 Glauces. Calyx 5-parted, coloured inside, with 3 inner sepals and 2 outer ones. Petals 5-20, tongue-shaped, 2-4-cleft at the apex. Capsule covered by the calyx, 5-celled; cells many-seeded.


Lin. syst. Icandrina, Tetra-Polygynia. Calyx of 5, rarely of 2-8 sepalos; sepalos united to themselves, and to the ovary even to the middle; lobes unequal, usually leaf-formed. Petals innumerable, in one, but more often in many series, united among themselves at the base. Stamens indefinite, disposed in many series, inserted with the petals at the top of the calyx. Ovarium adnate to the calyx, many celled inside (4-20), but usually 5-
celled. Stigmas 4-20, but usually 5. Capsule many-celled, opening stellately at the apex, adnate to the permanent calyx. Seeds numerous. Embryo curved at the side of a mealy albumen. Cotyledons thick, very blunt.—Subshrub, rarely herbs, almost all natives of the Cape of Good Hope. Leaves usually opposite, thick, fleshy, flat, terete or trigonal. Flowers terminating the branches, white, yellow or purple, the greater part of which open in the heat of the sun, very few of them opening in the evening. Fruit opening in a humid atmosphere, and relieving the seeds, which are then dispersed by the wind along with the sand.

In consequence of this genus being very large, we think it necessary to give a synopitical table of the sections, in order to render a reference to the species more easy.

### Synopitical Table of the Sections.

<table>
<thead>
<tr>
<th>Leaves</th>
<th>Stem</th>
<th>Flowers</th>
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<tbody>
<tr>
<td>not papulose</td>
<td>plants evidently with stems</td>
<td>leaves crowded at the tops of the branches</td>
</tr>
<tr>
<td>papulose</td>
<td>leaves disposed along the branches</td>
<td>petals separating</td>
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<tr>
<td></td>
<td>stems erect or prostrate, not creeping</td>
<td>petals nearly closed</td>
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<tr>
<td></td>
<td>leaves triquetrous</td>
<td>petals connate or sheathing</td>
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### Subdivision I. Acaulis (acaulis, without a stem; plants stemless or nearly so). Haw. rev. succ. p. 81. Stems wanting or very short. Root perennial. Leaves large, variable in form and thickness, but not flat.

§ 1. Sphaeroida (from σφαρος, sphaira, a sphere; in reference to the leaves being joined together into a globe). Salm-Dyck.—

**Minima et Sphaeroida, Haw. rev. succ.** Plants stemless. Leaves opposite, very blunt, joined even to the apex into a globe, but separating at length at the apex, and becoming marcescent, but still sheathing at the base. Flowers solitary, sessile, central. Calyx 4-5-cleft. Stigmas 4-5. Petals joined into a loose tube.

1. *M. minutum* (Haw. obs. 126. misc. 21. rev. 82.) plant stemless, obconical, glaucous, without spots; flowers long, tubular. 2. D. G. Native of the Cape of Good Hope. Sims, bot. mag. t. 1376. Plant hardly the size of a common bean. Petals pale reddish in the free part, spreading; tube slender, half an inch long, inclosing the ovary.

**Minute Fig-marigold.** Fl. Sept. Nov. Pl. ½ inch.

2. *M. minusculum* (Haw. obs. 126. misc. 21. syn. 203. rev. p. 82.) plant stemless, obconical, glaucous, with confluent rather branched spots; ovary exserted. 2. D. G. Native of the Cape of Good Hope. Petiv. gaz. t. 39. f. 3. ? ex Haw. Flowers very pale yellow, almost white, sessile. The cultivated plants of this species are sometimes somewhat caulescent. Offsets fewer from this species than from the other allied species.


3. *M. perpusillum* (Haw. rev. p. 82.) plant stemless, obconical, green, with strong confluent branched dots; ovary inclosed. 2. D. G. Native of the Cape of Good Hope. Very nearly allied to *M. minimum*, but the colour of the flowers is deeper, and the offsets more numerous.


5. *M. obconium* (Haw. misc. 21. syn. 203. rev. 82.) plant stemless, obconical, green, with confluent rather tubercle-formed dots; ovary inclosed. 2. D. G. Native of the Cape of Good Hope. Calyx 4-cleft. Corolla white.


**Fig-formed Fig-marigold.** Fl. Feb. Oct. Clt. 1819. Pl. ½ inch.


**Button-shaped Fig-marigold.** Fl. 2 Clt. 1795. Pl. ½ inch.

9. *M. turbiniforme* (Haw. rev. p. 84.) plant stemless, obconical, exactly truncate, and therefore top-formed, obscurely dotted. 2. D. G. Native of the Cape of Good Hope. Burch. cat. 1630. 2. voy. 1. p. 310. This species is twice or thrice the size of *M. truncatum*.

**Top-shaped Fig-marigold.** Pl. 2 inches.
10 M. uveförmë (Haw. rev. p. 84.) plant stemless, nearly globose, green, form and size of a grape berry, with small, rather confluent deeper dots. 

Grape-formed Fig-margd. Fl. 1790. Pl. 1 inch. Native of the Cape of Good Hope. Burm. afr. t. 10. F. 55.

§ 2. Subquadrifolía (the plants belonging to this section are usually furnished with about 4 leaves). Salm-Dyck, obs. 17—Semicôta and Observ., Haw. rev. p. 85. Plants almost stemless. Leaves 4-6, decussate, quite entire, obtuse, flat convex beneath. Flowers nearly sessile, solitary. Calyx 4-6-cleft. Stigmas 4-6. The upper leaves are usually commate, as in section Spheroideae, and at length separate, but more distinctly.

11 M. unciförmë (Haw. obs. 129, misc. 22. syn. 204. rev. 84.) plant stemless, glaucous, without dots, nearly spherical; tops of leaves unequal, distinct, flat above. 

Nut-formed Fig-margd. Clt. 1790. Pl. 1 inch. Native of the Cape of Good Hope. Flowers unknown.

§ 3. Moniliförmë (from monile, a bracelet, and forma, form; appearance of stems). Haw. and Salm-Dyck, i. c. Stems very short, moniliform, leafless in the summer. The two first leaves united even to the apex, and deciduous; the two following leaves elongated, and joined at the base, marcescent, and deciduous. Calyx 4-6-cleft, and is, as well as the leaves, full of crystalline papulae. Stigmas 7-8.

18 M. risfoförmë (Haw. misc. 23. syn. 205. rev. 93.) leaves full of crystalline papulae; the first two united into the form of a pea; the following 2 semi-terete; cædæx much branched, and very dwarf. 

Pea-formed Fig-margd. Clt. 1796. Pl. 1 inch. Native of the Cape of Good Hope. The first leaves are produced in autumn, and the second in winter. Flowers unknown.

Pea-formed Fig-margd. Clt. 1796. Pl. 1 inch. Native of the Cape of Good Hope. The first leaves are produced in autumn, and the second in winter. Flowers unknown.


20 M. noibile (Haw. in phil. mag. 1823. p. 881.) plant rather caulescent; leaves coarsely and triquetrously ciliate, obtuse, somewhat recurved, rather concave above, marked by large elevated tubercles. 

21 M. magnipunctatum (Haw. rev. p. 86.) plant stemless; leaves perfect, usually about 4, large, clavately triquetrous, very thick, glaucous, flat above, keeled beneath, obtuse at the apex, marked with very large and numerous dots. 

22 M. Caœnæ (Haw. obs. 158. misc. 25. syn. 219. rev. 87.) but not of Salm-Dyck,) plant stemless; leaves hoary, semi-terete at the base, attenuated, gibbously keeled at the apex. 

25. M. digitatum, Ait. hort. kew. 2. p. 181. Flowers white, according to Thunberg. Leaves alternate. Perhaps belonging to a different section.

Finger-shaped Fig-margd. Clt. 1775. Pl. 1 inch. Native of the Cape of Good Hope. Flowers unknown.


20 M. noibile (Haw. in phil. mag. 1823. p. 881.) plant rather caulescent; leaves coarsely and triquetrously ciliate, obtuse, somewhat recurved, rather concave above, marked by large elevated tubercles. 

21 M. magnipunctatum (Haw. rev. p. 86.) plant stemless; leaves perfect, usually about 4, large, clavately triquetrous, very thick, glaucous, flat above, keeled beneath, obtuse at the apex, marked with very large and numerous dots. 

22 M. Caœnæ (Haw. obs. 158. misc. 25. syn. 219. rev. 87.) but not of Salm-Dyck,) plant stemless; leaves hoary, semi-terete at the base, attenuated, gibbously keeled at the apex. 

25. M. digitatum, Ait. hort. kew. 2. p. 181. Flowers white, according to Thunberg. Leaves alternate. Perhaps belonging to a different section.

Finger-shaped Fig-margd. Clt. 1775. Pl. 1 inch. Native of the Cape of Good Hope. Flowers unknown.

§ 5. Albinota (from albus, white, and nota, a mark; plants marked with white). Haw. in phil. mag. Aug. 1826. p. 126. Plants almost without stems, tufted. Roots perennial. Leaves decussate, entire, obliquely incurved, green, spreading, full of large tubercular white dots, semi-terete at the base, acainiformly triquetrous at the apex, or nearly equal-sided, more or less mucronulated. Flowers sessile, central, sessile, yellow. Staminodes erectly spreading, as in those of section Ringèntia.

24 M. albinotæ (Haw. in phil. mag. Aug. 1826. p. 126.) leaves acainiformly triquetrous upwards, with a recurved
FICOIDEÆ. I. MESEMBRYANTHEMUM.

26 M. mutisellum (Salm-Dyck and Haw. suppl. p. 87. rev. p. 89.) plant almost stemless, green, full of pellucid dots; leaves triquetrous, gradually thickening towards the apex, ciliately toothed, pulsatilis gibbous on the inside at the base; flowers on short pedicels; calyx 4-cleft. 4. D. G. Native of the Cape of Good Hope. Salm-Dyck, obs. 1830. p. 9. Flowers yellow, expanding in the evening, sweet-scented.

Weasel-chop Fig-marigold. Clt. 1820. Pl. 1/4 foot.


Var. β, mágus (Haw. l. c.) corolla yellow, red at the apex.


28 M. agnus (Haw. in phil. mag. Aug. 1826. p. 126.) plant almost stemless, canescent, wrinkled from dots; leaves semi-terete, serrulate from elevated dots, and hence somewhat toothed, pulsatilis on the inside at the base. 4. D. G. Native of the Cape of Good Hope. Leaves with a large white pustule on the inside at the base. Flowers sessile, solitary, central, expanding in the evening.

Var. β; plant a little smaller; leaves of more obscure.

Var. γ; leaves more erect, entire.


29 M. murinum (Haw. obs. p. 165. misc. p. 30. syn. 217. rev. 90. phil. mag. 64. p. 111.) plant almost stemless, glaucescent; leaves ciliately denticulated, 3 rows on each side, and full of tubercular dots, with the margins and keel ciliately denticulated at the apex; flower sessile. 4. D. G. Native of the Cape of Good Hope. Flowers small, yellow. Styles 5, very short, erect, green, a little thickened towards the apex.


31 M. lupinum (Haw. in phil. mag. 64. p. 111.) plant stemless; leaves glaucous, marginal ciliate very long, and very numerous. 4. D. G. Native of the Cape of Good Hope. Very like M. felinum, but differs according to Salm-Dyck in the leaves being narrower, more attenuated, and in the ciliate being more numerous, but probably it is only a mere variety of it.

Wolf-chop Fig-marigold. Pl. 1/4 foot.


33 M. caninum (Haw. obs. p. 159. syn. 217. rev. p. 87.) plant almost stemless; leaves glaucescent, carinately triquetrous, rather club-shaped, incurved towards the apex, and somewhat toothed, as well as the bracteas; peduncles longer than the leaves. 4. D. G. Native of the Cape of Good Hope. D. C. pl. grass. t. 95.—Dill. elth. f. 231.—Bradh. succ. t. 17. M. ringens a, Lin. spec. 698. Flowers of a yellowish orange colour, opening after meridian.


34 M. vulpinum (Haw. syn. p. 417. rev. p. 88.) plant almost stemless; leaves glaucescent, carinately triquetrous, rather club-shaped, with large teeth at the apex or entire; old leaves horizontal; bracteas entire; peduncles longer than the leaves. 4. D. G. Native of the Cape of Good Hope. M. caninum β, Haw. misc. p. 32. Very like M. caninum, but taller, and the leaves are longer and greener, with fewer teeth. It is, however, perhaps only a variety of it. Flowers yellow.


35 M. nympheum (Haw. syn. 218. rev. p. 88.) plant stemless, smooth, white; leaves semi-terete, entire, carinately triquetrous above, and a little thickened, ending in a recurved mucron each. 4. D. G. Raised in the gardens from the seeds of M. albiflorum, impregnated by the pollen of M. caninum.

Hybrid Fig-marigold. Fl. May, Oct. Pl. 1/4 foot.

36 M. musevitum (Haw. in phil. mag. Nov. 1826. p. 328.) margins and keel of leaves usually bearing but one tooth each; branches prostrate, half a foot long. 4. D. G. Native of the Cape of Good Hope. Flowers yellow, opening in the morning, scentless. This plant is very like M. murinum, but differs in the prostrate branches, and in the teeth of the leaves being fewer. It comes perhaps nearest in habit to M. erissonum, but differs in the petals being a line broad, not capillose.


37 M. albidum (Lin. spec. p. 699.) plant stemless, smooth, whitish; leaves thick, subulate, triquetrous, obtuse, with an acumen, but semi-terete at the base; all quite entire. 4. D. G. Native of the Cape of Good Hope.—Dill. hort. clth. f. 232. Bradl. succ. t. 43. Sims, bot. mag. t. 1824. Haw. rev. p. 88. Flowers large, yellow, opening early in the morning, but afterwards remaining expanded throughout the whole day, sweet-scented. Stigmas 11. This plant is intermediate between the section Ringuetia and Rostrata.


38 M. denticulatum (Haw. obs. 149. misc. syn. 215. rev. 91.) plant stemless; leaves very glaucescent, subulate triquetrous, compressed, dilately keeled at the apex; keel usually
**SALM-DYCK**

*Salvia.* 

1. **FIOCHIE.** 1. Mesembryanthemum.

Small-branched Fig-marigold. Fl. March, Nov. Ch. 1791. Pl. 1/4 foot.


* Disticha* (from *distichus*, distichs, having two rows, a distich; leaves disposed exactly in two opposite rows), *Haw. misc.* p. 82. —**Linguiforumia**, *Haw. rev.* p. 93. —Glossoeidae, *Spreng. syst*. 2. p. 514. Leaves exactly distich.—Perhaps all the plants contained in this name are nothing more than varieties of one species, and probably of garden origin. The whole have been collected under the name of *M. linguiforme* in *Linn. spec.* p. 699. and *D. C. pl. grass*. no. 71.


48 M. *pra6anum* (Salm-Dyck, obs. 1830. p. 8.) plant almost stemless; leaves tongue-shaped, thick, one side rather convex, and obtuse at the apex, the other side thrown out into a keel; flower on a short peduncle. 2. D. G. Native of the Cape of Good Hope. *Haw. rev.* p. 95. Hoffmans. *verz.* 1. p. 220. Otto et Link, *abw.* t. 43. Flowers fragrant, yellow, 5 inches in diameter. Calyx 5-cleft. Allied to *M. sclaphatum*, but the leaves are narrower and thicker.

Fragrant Fig-marigold. Fl. Aug. Pl. 1/2 foot.


50 M. *grandiflorum* (Haw. in *phil. mag.* nov. 1826. p. 328.) leaves broad tongue-shaped, long, thick, having a large pustule on the inside at the base; petals very broad. 2. D. G. Native of the Cape of Good Hope. Flowers yellow, almost sessile, large, sessile; petals 3-4 lines broad. Leaves 3/4 inches long, and 15 lines broad. Capsule subconical. This is the largest species in the present section.

Var. *β* (Haw. l. c.) leaves deeper green.

Great-flowered Fig-marigold. Fl. July. Ch. 1824. Pl. 3/4 foot. 51 M. *medium* (Haw. *suppl.* p. 88. rev. p. 95.) plant almost stemless; leaves tongue-formed, sloping, cultrate, deep green, without any claw-like point at the apex; peduncles longer than the flowers. 2. D. G. Native of the Cape of Good Hope. Leaves 4 inches long, and an inch broad. Peduncles an inch long. Flowers yellow.


52 M. *cultratum* (Salm-Dyck, obs. 1820. p. 7.) plant almost stemless; leaves distich, exactly tongue-shaped, cultrate at the margin and apex; peduncles compressed, rather longer than the

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Var. β, rufescens (Haw. syn. p. 221.) leaves very closely imbricated, rufescent.


Var. β, brève (Haw. rev. p. 99.) leaves short, very blunt, depressed on the ground; capsule small, depressed.


59 M. DEPRESSUM (Haw. misc. p. 221. rev. 190.) plant almost stemless, prostrate; leaves pale, narrow-tongue-shaped, obtuse, recurved, depressed, variously incurved at the apex; capsule depressed. *L. D. G. Native of the Cape of Good Hope.—Dill. elth. f. 226? Flowers yellow.

Var. β, bifidum (Haw. l. c.) leaves of a livid rufescent colour.

Depressed Fig-marigold. Fl. Sept. Nov. Cl. 1795. Pl. ½ ft.

* Crucifera (from crucis, a cross; leaves disposed crosswise more or less). Haw. syn. p. 222.—Crucifera and Difforia, Haw. rev. 100. and 101. Leaves more or less cruciate, usually obliquely decussate.


Cross-leaved Fig-marigold. Fl. May. Nov. Cl. 1792. Pl. ¼ ft.

60 M. TAURUM (Haw. syn. p. 224. rev. 100.) plant almost stemless; leaves disposed in 2 rows, obliquely cruciate, semi-terete, obtuse, very thick, of a yellowish green colour, incurved; flowers sessile; calyx bifid? *L. D. G. Native of the Cape of Good Hope. Calyces segments unequal. Styles 6. Old stem branched at the base, half a foot high. Flowers yellow.


61 M. SALMI (Haw. suppl. p. 89. rev. p. 100.) plant nearly stemless; leaves decussate, semi-cylindrical, attenuated and acute at the apex, or oblique and bluntish; flowers exactly sessile; calyx 4-cleft; capsule half closed. *L. D. G. Native of the Cape of Good Hope. Salm-Dyck. obs. bot. 1820. Link. et Otto. agg. g. t. 44. Flowers large, yellow. Leaves pustulate at the base, according to Haworth.

Var. β, semi-cruciatum (Salm-Dyck. l. c.) leaves obliquely distinct, straight, and more tongue-shaped than the species.


62 M. SUBREPTUM (Haw. rev. p. 101.) leaves decussate, erectish, or spreading, more or less semi-terete, subulate, acute, soft, usually pustulate at the base; ovary exserted, somewhat pustulate. *L. D. G. Native of the Cape of Good Hope. Flowers yellow.


63 M. HETEROPHYLLUM (Haw. obs. p. 420. misc. 36. syn. 225, rev. 101.) plant stemless; leaves green, divided, without dots; upper ones the longest. *L. D. G. Native of the Cape of Good Hope. Flowers yellow. Leaves obliquely cruciate; lower ones like those of M. canum; upper ones like those of M. difforium.

Variable-leaved Fig-marigold. Cl. 1795. Pl. ½ foot.

64 M. AUGUSTUM (Haw. obs. 176. misc. p. 34. syn. 222, rev. p. 101.) plant almost stemless; leaves linear-tongue-shaped, semi-cylindrical, very long; flowers nearly sessile; calyx 4-cleft. *L. D. G. Native of the Cape of Good Hope. Flowers yellow, having the petals broader than any other species of this section. Calyx 4-cleft; stigmas 10, according to Haworth.


Var. β, brevicaule (Haw. rev. p. 103.). Cauliflor shorter.

Difforium Fig-marigold. Fl. Aug. Cl. 1732. Pl. dec.

66 M. BIIFERATUM (Haw. in phil. mag. nov. 1825. p. 239.) leaves obliquely somewhat cruciate, semi-cylindrical, pale green, varying at the apex, usually with 2 gibbosities; capsule depressed. *L. D. G. Native of the Cape of Good Hope. Very like M. difforium, but smaller and slenderer. Flowers yellow.

Two-bunched-leaved Fig-marigold. Fl. Aug. Cl. 1820. Pl. ¼ foot.

67 M. BIDENATUM (Haw. suppl. p. 89. rev. p. 103.) plant stemless; leaves semi-cylindrical, thick, soft, oblique at the apex, and divided, bearing 2 large, almost opposite, fleshy teeth in the middle. *L. D. G. Native of the Cape of Good Hope. Flowers large, yellow, on short peduncles; petals erosely toothed at the apex. Capsule a little depressed.—The figure in Dill. hort. elth. f. 241. is referrible to this plant and not to the next.

Bidenate-leaved Fig-marigold. Fl. Aug. Cl. 1818. Pl. ¼ ft.

68 M. SEMICYLINDRUM (Haw. obs. p. 238. misc. p. 36. syn. 225. rev. p. 103.) plant rather canescent; leaves very narrow, tongue-shaped, semi-terete, oblique towards the apex, furnished
with 1 oblique tooth on one side, and another stronger one on the other; flowers on short pedicels; calyx 4-cleft. 2. D. H. Native of the Cape of Good Hope.—Pluck. mant. t. 325. f. 4. Flowers yellow, size of those of *M. linguiforme*. Styles 8.


70 M. *Carinans* (Haw. rev. p. 90.) plant nearly stemless; leaves elongated, somewhat incurved and spreading, semiterete at the base, compressed at the apex, and dilated into a keel, whithis and dotted. 2. D. G. Native country and flowers unknown. M. cænum, *Salm-Dyck*. obs. p. 20. but not of Haw. Flowers by threes, yellow, expanding, very in the like M. dolabrilforme.


Obsubulate-leaved Fig-marigold. Clt. 1796. Pl. ½ foot.


80 M. *Teretiu'sculum* (*Haw*. obs. 410. misc. 27. exclusive of the synonymes) plant stemless; leaves triquetroously terete, firm, thick, green, dotted. 2. D. G. Native of the Cape of Good Hope. Leaves 2 inches long. Flowers unknown, but probably red.

*Nearly terete-leaved Fig-marigold*. Clt. 1794. Pl. ½ foot.

§ 13. *Bellidiflora* (from *bellis*, a daisy, and *flos*, a flower; the flowers bear some resemblance to those of the daisy). *Haw*. rev. p. 106. Plants stemless or caulescent. Leaves triquetrous,
acut at the angles, toothed at the apex. Flowers solitary, pedicellate. Petals purple on the ribs and white on the margins. *Calyx* 5-cleft. Capsule 5-celled. Stigmas numerous, small, hair-formed.

81. *M. bellidiformis* (Lin. spec. p. 630.) caudex short, subfruticose; leaves triquetrous, compressed, rather acinaciform, denticulat at the apex; pedicels short. .getFullYear(). D. G. Native of the Cape of Good Hope. Petals red and white.

*Var. β*, glaucoscens (Haw. rev. p. 105.) leaves rather glaucous, with the teeth in 3 rows at the apex.—Dill. elth. f. 233.

*Var. γ*, viride (Haw. rev. p. 105.) leaves pale green, toothed beneath on the keel.

*Daisy-flowered* Fig-margold. Fl. June, Aug..Ct. 1717.

Pl. 3/4 foot.

82. *M. subulatum* (Mill. dict. ed. 8. no. 10.) caudex branched; leaves rather glaucous, triquetrously subulate, denticulate at the apex. .getFullYear(). D. G. Native of the Cape of Good Hope. Haw. syn. 208. *M. bellidiformis* simplex, D. C. pl. grass. t. 41.

*Flowers reddish.* The plant is very like *M. bellidiformis*, but is much smaller and more branched.


83. *M. Burgmanni* (Haw. rev. p. 106.) leaves succulent, simple; leaves triquetrous, with 3 rows of teeth at the apex; pedicels rather elongated. .getFullYear(). D. G. Native of the Cape of Good Hope.—Burn. afr. t. 25.

*This species is hardly known.*

Burmann’s Fig-margold. Pl. 3/4 foot.


*Plants stemless or nearly so.* Leaves semiterete, subulate, incurved, triquetrous at the apex, green, full of peduncled dots. *Flowers pedicellate; petals deep purple.* *Calyx* 5 cleft. *Stigmas 10?*


85. *M. functum* (Haw. obs. p. 411. rev. 107.) plant smooth, stemless; leaves semiterete, triquetrous at the top, flat above, full of peduncled dots, pale green, furnished with a minute white point at the apex. .getFullYear(). D. G. Native of the Cape of Good Hope. Flowers unknown. Perhaps only a variety of *M. diminutum*.

*Dotted-leaved* Fig-margold. Fl. April, Nov. Ct. 1793. Pl. 3/4 foot.


*Var. β*, cauliculatum (Haw. suppl. 90. rev. 107.) stem half erect; leaves longer, and with larger dots, but is perhaps only an old plant.

*Diminished* Fig-margold. Fl. Apr. Ct. 1789. Pl. 3/4 ft.


87. *Macrorhizum* (Haw. l. c. D. C. l. c.) stem very short; root large, tuberous; leaves connate, bluntly triquetrous, crowded, spreading; branches erect, bent; flowers 1-3 together, nearly terminal, pedicellate. FullYear(). D. S. Native of the Island of Bourbon, among scoria near the sea. Stems 8 inches high. Flowers small, white, numerous. The leaves have an acid taste when eaten, as those of *Salsola*. La Lavangere, Comm. mss. and figure. *Ficoide*, De Pet. Th. mel. bot. p. 37.


**Subdivision II. Cephalophylla** (from κεφαλή, cephale, a head, and ψιλλόν, phyllon, a leaf; in reference to the leaves being collected in heads at the tops of the branches). *Haw.* rev. 108.

*Stems suffrutescent, decumbent.* Leaves long, triquetrous, or nearly cylindrical, disposed in heads. Flowers pedunculate, yellow. *Calyx* 5-cleft. *Stigmas 10-20.* This division is perhaps not very natural.


*Var. β*, congestum (Haw. l. c.) plant more greenish; lower pair of leaves very long.


*Var. β*, brevifolium (Haw. l. c.) leaves shorter than in any of the other varieties.

*Var. γ*, latifolium (Haw. l. c.) leaves pale green.

*Var. c*, atroirens (Haw. l. c.) leaves dark green.


90. *M. decipiens* (Haw. rev. p. 110.) stems prostrate, with rather distant nodis; leaves rather crowded, long, areately ascending, triquetrously semi-cylindrical, green, shining, minutely and finely wrinkled. FullYear(). D. G. Native of the Cape of Good Hope. *Flowers pale yellow.*

*Deceiving* Fig-margold. Fl. May. Ct. 1820. Pl. pr.

91. *M. Dubium* (Haw. misc. p. 39. syn. 231. rev. 110.) stems prostrate, nearly terete, with the nodis contiguous; leaves rather crowded, longish, triquetrously semi-cylindrical, ascending, green, shining; stigmas 12. FullYear(). D. G. Native of the Cape of Good Hope.—Brasil. succ. t. 40. Petiv. gaz. 77. f. 10. Leaves 2 inches long, but shorter than those of *M. corniculatum*. Peduncles terminal, shorter than the leaves. *Petals sulphur-
coloured on the inside, and of an orange red colour on the outside.

**Doubtful Fig-marigold.** Fl. May, Nov. Clt. 1800. Pl. pr.


**Horned Fig-marigold.** Fl. May. Clt. 1732. Pl. pr.

§ 17. **Procumbêntia** (procumbens, procumbent; plants). Haw. in phil. mag. dec. 1826. p. 329. Old stems procumbent. Leaves connate at the base, long, semiterete or cylindrical.

93 M. PROCUMBENS (Haw. rev. 111.) stems flexuous, procumbent; leaves by pairs, recurved, corniculate, semi-cylindrically triquetrous, glaucescent. § D. G. Native of the Cape of Good Hope. M. dubium, Salm-Dyck. obs. p. 22. Allied to *M. tricolor*, but the leaves are shorter and more expanded, &c.


95 M. PURPUREUM (Haw. in phil. mag. dec. 1826. p. 329.) branches short, angular, prostrate, furrowed, yellowish; leaves green, triquetrous semi-cylindrical, full of little dots, upper ones crowded. § D. G. Native of the Cape of Good Hope. Peduncles filiform. Flowers showy; petals white, polished, naked, with a broad, dark, purple line. Styles 10, redish.

**Purple and white-flowered Fig-marigold.** Fl. Aug. Clt. 1824. Pl. pr.

§ 18. **Capitata** (from capitatus, headed; leaves crowded into heads at the top of the stems or branches). Haw. syn. 227. rev. 111. Salm-Dyck. obs. p. 30. Caudex erect, much branched. Leaves crowded at the tops of the branches, alternate, very long, triquetrous, or semi-terete, without either dots or papule. Florigerous branches disposed in something like whorls, decumbent. Peduncles bracteate at the base. Flowers large, yellow. Calyx 5-lobed; lobes elongated. Petals ciliated at the base. Stigmas 10-20. The species are very nearly allied to each other.

96 M. FUGITIVUM (Lin. spec. 699.) stem suffruticoso, erectish; branches few, terete, decumbent; leaves alternate, crowded at the tops of branches, glaucous, triquetrous; petals shorter than the calyx; stigmas 15, expanded. § D. G. Native of the Cape of Good Hope.—Dill. elth. f. 269. Bradt. succ. t. 14. D. C. pl. grass. t. 82. Haw. misc. 42. syn. 218. rev. 112. Flowers large, pale yellow. Perhaps the flesh-coloured and purple-flowered varieties mentioned in Breyn. cent. p. 164. belong to this species.


97 M. CAPITATUM (Haw. misc. p. 41. syn. 228. rev. 112.) stem simple, suffruticoso, with the leaves alternate and crowded at its top, rather glaucous, and triquetrous; petals length of calyx; stigmas 16, straight, setaceous. § D. G. Native of the Cape of Good Hope. Ker. bot. reg. 494. M. pugionifórmef Haw. obs. p. 396. Stem simple. Flowers pale yellow.

**Var. β, ramigerum** (Haw. l.c.) stem a little branched. **Capitata Fig-marigold.** Fl. Jul. Sept. Clt. 1717. Sh. 1 ft. 98 M. BREVICÂULÉ (Haw. suppl. p. 91. rev. 113.) caudex suffruticoso, simple, erect, with the leaves alternate, greenish, triquetrous, and crowded at its apex. § D. G. Native of the Cape of Good Hope. Breyn. cent. p. 165. Much smaller than *M. capitatum*. Flowers pale yellow.

**Short-stemmed Fig-marigold.** Fl. Jul. Sept. Clt. 1820. Sh. ½ ft. 99 M. CORUSCANUM (Haw. suppl. 90. rev. 113.) stem shrubby; leaves alternate, dagger-shaped, long, glittering, crowded at the top of the stem. § D. G. Native of the Cape of Good Hope. Flowers yellow.


**Var. γ, minus** (Haw. l.c.) corolla a little smaller; petals hardly ciliated. Ker. bot. reg. t. 493.


**Elongated Fig-marigold.** Fl. May. Clt. 1793. Sh. 1 foot.


101 M. GEMINIFORUM (Haw. rev. 114.) stem shrubby, diffuse; branches elongated, slender, creeping; leaves triquetrous, nearly equal-sided, rather connate at the base, acute, and a little hooked at the apex, dotted; pedicles twin or tern; stigmas 5. § D. G. Native of the Cape of Good Hope. M. geminiyum, Jacq. fragm. t. 50. but not of Haw. Petals purple. Flowers hardly half an inch in diameter. Leaves 12-15 lines long, scarious from elevated dots.

**Twin-flowered Fig-marigold.** Clt. 1819. Pl. creeping.

102 M. SIMILE (Haw. rev. p. 115.) stems shrubby, firm, procumbent; leaves triquetrous, equal-sided, glaucescent, full of very small dots, straight at the apex, longer than the internodes: margins not serrated. § D. G. Native of the Cape of Good Hope. Flowers unknown. Allied to *M. geminiiforum*, but the branches are shorter; and to *M. lâxum*, but the internodes are shorter.

**Similar Fig-marigold.** Clt. 1819. Pl. pr.

103 M. LâXUM (Wild. enum. p. 536.) stem loose, diffuse, shrubby; branches creeping, very slender; leaves connate, compressed, triquetrous, more green than the others, tubercularly dotted, usually shorter than the internodes: with the margins and keel finely denticulated. § D. G. Native of the Cape of Good Hope. Haw. rev. 115. Flowers reddish.

**Loose Fig-marigold.** Fl. May. Clt. 1820. Pl. creeping.

104 M. SARMENTOSUM (Haw. syn. 238. rev. 115.) stem shrubby, diffuse; branches prostrate, rooting, sarmentaceos; leaves crowded, compressed, triquetrous, pale green, roughish on the edges; peduncles club-shaped above; stigmas 5. § D. G.

_Twiggy Fig-marigold._ Fl. April. Clt. 1805. Pl. pr.

105. **M. rigidicaule** (Haw. rev. p. 116.) stem firm, procumbent, not pendulous; leaves long, triquetrous, equal-sided, straight, with roughish margins. ɣ. D. G. Native of the Cape of Good Hope. The rest unknown.


106. **M. Validum** (Haw. in phl. mag. dec. 1826. p. 329.) leaves long, pale green, with roughish margins; branches robust, stiff, decumbent; flowers usually by threes; keel of bracteas entire. ɣ. D. G. Native of the Cape of Good Hope. Flowers showy, rose-colored, with a deeper colored line in the middle.

**Strong Fig-marigold.** Fl. May. Ju. Clt. 1824. Pl. pr.


108. **M. repans** (Ait. hort. kew. vol. 2. p. 185.) stems filiform, very slender, creeping; leaves much crowded, triquetrous, acute, glaucous, scabrous from large pellucid dots. ɣ. D. G. Native of the Cape of Good Hope. Flowers reddish. (ex Ait.), yellow (ex Salm-Dyck.), rarely flowering (ex Haw. obs. p. 349. misc. 80. syn. 212. rev. 121.).


110. **M. de Bile** (Haw. in phl. mag. dec. 1826. p. 331.) plant smooth; branches filiform, a little compressed; leaves crowded about the knots of the creeping stems, bluntly and aciciniformly triquetrous, glaucous. ɣ. D. G. Native of the Cape of Good Hope. This species differs from **M. repans** in being smooth, not rough. Flowers unknown.

_Weak Fig-marigold._ Clt. 1824. Pl. creeping.

111. **M. Clayellatum** (Haw. misc. 79. syn. 242. rev. 122.) branches angular, creeping; leaves crowded, expanded, obliquely triquetrous, firm, clavate, very blunt, mucronulate, green; peduncles rather compressed; stigmas 5, very slender. ɣ. D. G. Native of New Holland. Flowers like those of **M. crasifolium**, but more beautiful and of a deeper red. Calyx 5-cleft; stigmas setaceous, green.


114. **M. Serrulatum** (Haw. misc. 77. syn. 239. rev. 117.) stem shrubby, when young erect; branches erectly decumbent; leaves compressed, triquetrous, rather aciciniform, and rather glaucous, usually longer than the internodes, with the margins minutely serrulat, but hardly cartilaginous; flowers solitary; stigmas 7-8, ramentaceous. ɣ. D. G. Native of the Cape of Good Hope. Flowers reddish, and ternately disposed, as in **M. rubricaulis**; lateral ones usually abortive.

_Var. β. viridus** (Haw. l. c.) leaves green.


115. **M. Rubricaulis** (Haw. misc. p. 77. syn. 239. rev. 117.) stem shrubby, when young erectish; branches opposite, rather effuse; leaves compressed, triquetrous, usually shorter than the internodes, cartilaginous and serrulat on the margins; flowers solitary; stigmas 5, expanded. ɣ. D. G. Native of the Cape of Good Hope. Willd. enum. p. 536. Flowers middle-sized, pale purple. There is a more dense variety, and a greenish one.


116. **M. Edule** (Lin. spec. 695.) branches expanded, with quite entire angles; leaves equally triquetrous, dotted, a little channelled, attenuated at both ends, with the keel serrulat; stigmas 8. ɣ. D. G. Native of the Cape of Good Hope.—Dill. elth. 272. Seb. thes. 1. t. 19. f. 6. Haw. obs. 392. misc. 76. syn. 234. rev. 110. Flowers large, yellow. Calyx 5-cleft. Capsule 8-celled, with the baccate calyx edible. Rarely flowering in the gardens.

_Edible Fig-marigold or Hottentot Fig._ Fl. July. Aug. Clt. 1690. Shrub pr.

Flowers large, reddish. There are two varieties of this species, one with short and the other with longer branches.


118 M. _levigatum_ (Haw. syn. 233. rev. 118.) stems rather procumbent, long; leaves aciciniform, smooth, glaucous, with cartilaginous, entire margins. ‡. D. G. Native of the Cape of Good Hope. Flowers unknown. Allied to _M. aciciniforme_, but differs in being smaller, and the branches being angular. &c.

_Smooth_ Fig-margold. Fl. June. C1t. 1802. Pl. pr.

119 M. _rubrocentral_ (Haw. syn. p. 284. rev. 118.) stems rather procumbent, long; leaves aciciniform, with rough red edges and keel. ‡. D. G. Native of the Cape of Good Hope. There is a variety of this species with thicker and more compressed leaves.

_Red-bordered-leaved_ Fig-margold. Fl. May. C1t. 1811. Pl. pr.

120 M. _subala'num_ (Haw. misc. 76. syn. 235. rev. 199.) branches 2-edged at the apex, somewhat undulated winged; leaves compressed, triquetrous, equal-sided, dotted, rather aciciniform, with cartilaginous margins, which are scabrous on both sides. ‡. D. G. Native of the Cape of Good Hope. Flowers unknown, but probably reddish.

_Rather-winged_ Fig-margold. C1t. 1796. Shrub pr.

121 M. _lacerum_ (Salm.-Dyck. obs. 1820. p. 31.) stem shrubby, erect; branches erectly spreading, 2-edged; leaves rather aciciniform, acutely triquetrous, rather compressed, glaucous, full of pellucid dots: with the keel laterately toothed; stigmas 10, very short, approximated. ‡. D. G. Native of the Cape of Good Hope. _M. aciciniforme_, D. C. pl. grass. t. 80. _M. dimidiatum_, and probably _M. lacerum_, Haw. rev. 119. and 131. M. Miller, Wild. enum. suppl. 31. and _M. gladiatum_, Jacq. ex Salm.-Dyck. Leaves large, red, opening in the sun; petals linear, very numerous. Calyx 5-cleft; lobes leaf-formed. Stigmas for the most part 10, but sometimes even to the number of 20.

_Jagged-keeled_ Fig-margold. C1t. 2. Shrub 1 to 2 feet.

122 M. _viexns_ (Haw. rev. 121.) stem erectish; branches at length spreading; leaves compressed, triquetrous, rather aciciniform, smooth, dotted, green, pubescent on the inside at the base, having the keel roughish at the apex. ‡. D. G. Native of the Cape of Good Hope. Flowers reddish, disposed by threes. This species hardly belongs to this section, according to Salm-Dyck.

_Green_ Fig-margold. Fl. June. C1t. 1821. Pl. 1 foot.


Stems usually elongated, weak, prostrate, and creeping: when young thick and fleshy. Leaves triquetrous, with the sides nearly equal, thick, usually soft. Flowers solitary, terminal, reddish, large, showy, and hexagonous. Capsule pulpy on the outside, even when ripe.

123 M. _equilaterale_ (Haw. misc. 77. syn. 237. rev. 120.) stems weak, prostrate; leaves almost equally triquetrous, greenish; peduncles angular, thickening towards the top; calyx 5-cleft; stigmas 5, short, erect. ‡. D. G. Native of New Holland. Flowers showy, reddish.

Var. _β_. _decagonum_ (D. C. prod. 3. p. 429.) stigmas 10; branches shorter.

_Equal-sided-leaved_ Fig-margold. Fl. Ju. C1t. 1791. Sh. pr.

124 M. _glauceae_ (Haw. syn. p. 236. rev. 120.) stems robust, decomprocumbent, somewhat prostrate; young leaves a little incurred, triquetrous, with the sides equal, soft, glaucous: with cartilaginous, smoothish margins; flowers solitary, sessile; stigmas 5. ‡. D. G. Native of New Holland. Branches furrowed at the top. Calyx 5-cleft. Petals pale purple.


125 M. _Rosii_ (Haw. rev. p. 120.) stems decomprocumbent; leaves aciciniform, or decomprocumbent triquetrous, glaucous, with cartilaginous, smoothish margins; flowers solitary, sessile; stigmas 5. ‡. D. G. Native of Van Diemen's Land. Flowers unknown. Very like _M. glaucum_.

_Rosii's_ Fig-margold. C1t. 1820. Shrub pr.

126 M. _Abbreviatum_ (Haw. in _phil. mag._, dec. 1826. p. 330.) plant tufted; stems short, coarse, and prostrate, crowded; leaves acutely triquetrous, thick, green, much longer than the internodes, which are short. ‡. D. G. Native of New Holland. This species comes very near to _M. glaucum_, but the leaves are more crowded. Flowers not seen.

_Short-stemmed_ Fig-margold. C1t. 1825. Shrub pr.

127 M. _virescents_ (Haw. syn. p. 236. rev. 120.) stems decomprocumbent; leaves triquetrous, with the sides nearly equal, greenish; peduncles terminal, solitary, 2-edged, winged; calyx 4-cleft; stigmas 8, filiform. ‡. D. G. Native of New Holland. Corolla showy, pale red; petals white at the base, and obtuse at the apex.


_Subdivision IV. Perfoliata_ (from per, through, and folium, a leaf; stem running through the leaves). _Haw._ rev. p. 133. Usually erect shrubs, with erect or decumbent branches. Leaves opposite, connate, and sheathing at the base, usually triquetrous towards the top, and for the most part looked at the apex. Flowers white, red, or reddish. Calyx 5-cleft. Stigmas 5.

§ 24. _Forfexita_ (from forfex, a pair of scissors; form and disposition of leaves). _Salm-Dyck_, obs. p. 33._—_Forfexita Geminita_, &c. _Haw._ Stems frutescent; branches erect or decumbent. Leaves opposite, triquetrous, compressed, scissor-shaped, erect, with the corolla angle drawn out. Flowers reddish, solitary, on short peduncles. Calyx 5-cleft; petals very narrow. Stigmas 5, short, thick.

128 M. _heterophyllum_ (Haw. misc. 67. syn. 294. rev. 128.) stem shrubby, short; branches crowded, ascending; leaves crowded, glaucous, compressed, triquetrous, rather aciciniform; with cartilaginous edges, and a jagged keel; petals unequal, shorter than the calyx, which is large and 5-horned; stigmas 5, very short. ‡. D. G. Native of the Cape of Good Hope. Wild. enum. suppl. 36. Petals white.

_Various-leaved_ Fig-margold. Fl. May. Aug. C1t. 1794. Shrub 1 to 2 feet.

129 M. _mutabile_ (Haw. obs. 377. misc. 74. syn. 294. rev. 133.) stem shrubby, erect; branches 2-edged; leaves nearly distinct, crowded, triquetrous, dotted; with a cartilaginous, entire keel; petals subulate; stigmas 5, short, thick. ‡. D. G. Native of the Cape of Good Hope. Flowers reddish.

_Changeable_ Fig-margold. Fl. Jul. Sept. C1t. 1792. Sh. 1½ ft. 130 M. _glaucum_ (Haw. suppl. 97. rev. 132.) stem shrubby, erect; leaves much crowded, compressed, triquetrous, rather aciciniform, glaucous, entire, with subcartilaginous edges, a little dotted; petals subulate; stigmas 5, short, thick. ‡. D. G. Native of the Cape of Good Hope. Flowers reddish. Perhaps sufficiently distinct from _M. mutabile_.


_White-edged-leaved_ Fig-margold. C1t. 1793. Shrub ½ ft. 132 M. _inclu'dens_ (Haw. syn. 295. rev. 133.) stem shrubby; leaves triquetrous, rather deltoid, smooth, green, with a gibbous
FICOIDÆ. 1. MESEMBRYANTHEMUM.


**Embracing Fig-marigold.** Fl. Ju. Sept. Clt. 1805. Sh. 1 to 2 feet.

133 M. FORICATUM (Lin. spec. 695.) stems suffrutescent, decumbent; leaves opposite, compressed, triquetrous, green, ending in a spinulos mucrone at the apex; peduncles angular; petals in 1 series; stigmas 5, very short. η. D. G. Native of the Cape of Good Hope. Haw. obs. 394. descript. misc. p. 78. syn. 280. rev. 123. Jacq. vind. 1. t. 3. M. filamentosum β. D. C. Petals purplish, with a deeper-coloured keel.


Shrub decumbent.

134 M. EXIMA (Haw. misc. p. 92. syn. 280. rev. 123.) stem suffruticos, dwarf; branchlets dichotomous, ascending; leaves connate a long way, triquetrous, erect, glaucous, smooth, cartilaginous at the margins. η. D. G. Native of the Cape of Good Hope. Flowers unknown, but probably white.


135 M. ROSELLATUM (Haw. rev. 123.) stems branched, prostrate; leaves beaked, connate, semi-terete, subulate, recurved, dotted, green; peduncles clavate, bibracteate at the base; stigmas 5, spreading. η. D. G. Native of the Cape of Good Hope. Calyx with 5 long lobes. Corolla expanded before meridit, whitish, tipped with red.

**Little-beaked-leaved Fig-marigold.** Fl. Ju. Clt. 1820. Sh. pr.


Var. β. monacanthum (Brd. succ. f. 26.) keel of leaves furnished with only one tooth beneath.


**Perfoliata-leaved Fig-marigold.** Fl. June, Aug. Clt. 1714. Shrub 1 to 3 feet.

137 M. UNCINELLUM (Salm-Dyck, in litt. and Haw. rev. p. 124.) stem shrubby, erect, with numerous branches; leaves connate and sheathing at the base, rather decurrent, triquetrous, thick, whitish, dotted, recurved at the apex; keel furnished with one tooth beneath. η. D. G. Native of the Cape of Good Hope.—Dill. elth. f. 239. Flowers reddish.

**Small-hooked-leaved Fig-marigold.** Fl. June, Aug. Clt. 1819. Shrub 1 foot.

138 M. SEMIDENTATUM (Haw. suppl. 95. rev. 125.) stem shrubby, with simple striated branches; leaves connate and sheathing at the base, triquetrous, compressed, white, dotted; keel furnished with 1-4 teeth. η. D. G. Native of the Cape of Good Hope. Salm-Dyck, obs. 1850. p. 9. Leaves 2 inches long. Flowers on short peduncles, reddish. Differ in the length of the leaves from M. perforiatum.

**Half-toothed-leaved Fig-marigold.** Fl. Aug. Clt. 1820. Shrub 1 foot.

139 M. UNCINA (Mill. dict. ed. 8. no. 18.) stem shrubby, erect; leaves connate, and sheathing at the base, rather decurrent, green, dotted, triquetrous, furnished with 1-2 spines underneath at the apex. η. D. G. Native of the Cape of Good Hope. Brd. succ. f. 27. M. uncinatum a, Lin. spec. 692. D. C. pl. grass. t. 54. Flowers red.

**Hooked-leaved Fig-marigold.** Fl. Aug. Clt. 1725. Shrub 1 to 2 feet.

140 M. VIRIDE (Haw. obs. p. 314. misc. 93. syn. 282. rev. 126.) stem shrubby; leaves connate and sheathing at the base, quite entire, deep green, dotted, smooth, uncinately recurved at the apex; stigmas 7, subulate. η. D. G. Native of the Cape of Good Hope. Peduncles clavate, bibracteate, axillary. Calyx 5-cleft. Petals pale red, expanded both by night and by day.

**Green Fig-marigold.** Fl. July. Clt. 1792. Shrub 1 foot.

141 M. UNIDENTIS (Haw. in phil. mag. Dec. 1826. p. 391.) plant depressed, stiff; branches crowded; leaves rather acneciform, white, with large dots; keel bearing one tooth near the top. η. D. G. Native of the Cape of Good Hope. Leaves less perfoliate than any other of the section. Flowers not seen.

**One-toothed Fig-marigold.** Clt. 1824. Shrub 1/2 to 1 foot. § 27. Paniculata (from panicula, a panicle; disposition of flowers). Haw. syn. 283. Salm-Dyck, obs. p. 33.—Vagnata, Linéa, and Tumidula, Haw. rev. 126-129. Shrubby, erect; branches hard. Leaves connate and sheathing at the base, with the longitudinal lines of the sheath more or less distinct, for the most part glaucous and triquetrous. Flowers panicked, numerous. Peduncles bracteate. Calyx 5-cleft. Stigmas 5. Petals white, rarely reddish.

142 M. TUMIDULUM (Haw. syn. p. 286. rev. p. 129.) stem erect, with spreading branches; leaves connate and sheathing at the base, remote, green, smooth, rather recurved at the apex; sheaths tumid at the top. η. D. G. Native of the Cape of Good Hope. Leaves an inch and a half long. Flowers reddish.

**Tumid-sheathed Fig-marigold.** Fl. March. Clt. 1802. Shrub 2 feet.

143 M. FOLIOSUM (Haw. misc. 97. syn. 287. rev. 130.) stem erect, much branched; branches crowded, hardly erect; leaves connate and sheathing at the base, rather glaucous, smooth, crowded, obtuse, ending in a rather recurved mucrone; sheaths thickened at the top. η. D. G. Native of the Cape of Good Hope. Leaves an inch long. Petals reddish, with a deeper coloured line. Stigmas 5, expanded at length.

**Leafy Fig-marigold.** Fl. Sept. Clt. 1802. Shrub 2 to 3 ft.


**Umbellate-flowered Fig-marigold.** Fl. June, Sept. Clt. 1727. Pl. 2 to 3 feet.

145 M. IMBRICATUM (Haw. obs. p. 317. misc. 96. syn. 285.)
rev. 128.) stem and branches erect, subtubercular; leaves connate and sheathing at the base, glaucous, remote, smooth, dotted, rather compressed, triquetrous; calyx tubinicate, much attenuated at the base. ʒ. D. G. Native of the Cape of Good Hope. Peduncles bracteate even to the calyx. Corolla white, nearly an inch in diameter. Leaves nearly an inch long.

Var. β, majus (Haw. syn. 285.) leaves green, an inch and a half long.

Imbricated-leaved Fig-margold. Fl. July. Clt. 1792. Shrubs 2 to 3 feet.

146 M. MULTIFLORUM (Haw. obs. p. 318, misc. 96, syn. 285, rev. p. 128.) stem and branches erect; leaves connate and sheathing at the base, remote, glaucous, somewhat compressed, triquetrous, smooth, dotted; calyx cylindrical, hardly attenuated at the base. ʒ. D. G. Native of the Cape of Good Hope. Peduncles bracteate even to the calyx. Flowers white, larger than those of M. imbricatum.—Pluk. phyt. t. 117. f. 1.

Var. γ, rubrum (Haw. rev. p. 128.) leaves glaucous; calyx turbinate, much attenuated at the base. Perhaps a variety of M. imbricatum.

Var. δ, pâtens (Haw. l. c.) stem spreading; flowers solitary. M. pâtens, Willd. enum. suppl. p. 37.

Var. ε, nitens (Haw. l. c.) smooth; branches spreading; leaves green. Perhaps a proper species.


147 M. kÎndem (Haw. misc. 95, syn. 283, rev. 127.) stem erect; branches very stiff, spreading a little; leaves connate, and sheathing at the base, horizontal, and are, as well as the sheaths, glaucous, but with the keel scabrous at the apex. ʒ. D. G. Native of the Cape of Good Hope. Allied to M. tenellum. Leaves 3 lines long. Peduncles bracteate nearly to the apex. Petals snow white, shining.


148 M. TÉRELLUM (Haw. obs. 315, misc. 94, syn. 283, rev. 127.) stem erect, bushy; branches filiform, decumbent; leaves connate and sheathing at the base, rather spreading, slender, and are, as well as the sheaths, scabrous at the margins. ʒ. D. G. Native of the Cape of Good Hope. Flowers panicked, snow white. Calyx 4-5-cleft. Stigmas 5, erect, subulate. Leaves 3 lines long, glaucous.


149 M. cîrtum (Haw. syn. p. 284, rev. 126.) stem erect, bushy; leaves connate and sheathing at the base, usually approximative, incurved, smooth, green, with the angles rough at the top. ʒ. D. G. Native of the Cape of Good Hope. Flowers unknown, but probably white.


Var. γ, nitens (D. C. prod. 3. p. 432.) smaller in all its parts. M. hamatum, Willd. ex Haw. Perhaps a proper species.

Short-sheathed Fig-margold. Shrubs 1 to 1 ½ feet.

150 M. ACUTA (Haw. in phill. mag. 64. p. 424.) stem erect, bushy; leaves connate and sheathing at the base, forming a kind of rectangle, triquetrous, acuminate, incurved, green, with roughish margins. ʒ. D. G. Native of the Cape of Good Hope. Allied to M. cîrtum, but much more dwarf. Flowers unknown.

Acuteangled Fig-margold. Clt. 1821. Shrubs ½ to 1 foot.

151 M. VAGINATUM (Haw. misc. 95, syn. 284, exclusive of var. β, rev. 127. but not of Lam.) stem erect, bushy; leaves spreading, straight, remote, triquetrous, rather recurved at the apex, and are, as well as the sheaths, green and glaucous, but with the angles rough near the top. ʒ. D. G. Native of the Cape of Good Hope. Flowers panicked, white, small, numerous. Leaves an inch long.


152 M. PARVIFLORUM (Haw. misc. 95. syn. 284, rev. 127. but not of Jacq.) stems and branches erect; leaves connate and sheathing at the base, glaucous, erectish; keel finely serrulater. ʒ. D. G. Native of the Cape of Good Hope. Peduncles bracteate even to the calyx. Corolla white, small. Leaves half an inch long.

Small-flowered Fig-margold. Fl. Aug. Clt. 1800. Shrubs 1 to 2 feet.

153 M. LINEOLATUM (Haw. rev. p. 130.) stem short, depressed; branches spreading; leaves connate, incurved and a little recurved, obtuse, triquetrous, with nearly equal sides, and having the keel roughish at the apex; sheaths with a short impressed line. ʒ. D. G. Native of the Cape of Good Hope. Flowers small, terminal at the tops of the branches, solitary. Peduncles an inch long, compressed, smooth, bibracteate at the base. Calyx 5-cleft, wrinkled. Petals in one series, obtuse, reddish, with a deeper coloured middle line, expanded, rather incurved. Stamens collected; filaments white at the base, and reddish at the apex; anthers pale yellow. Styles 5, subulate, diverging in a stellate manner. This is rather an anomalous species, but it approaches nearest to the section Uneinata.

Var. β, minus (Haw. l. c.) margins of leaves roughish.

Var. γ, nitens (Haw. l. c.) leaves shining, greener.


Subdivision V. Trique'tra (from triquetrous, triangular; triangular leaves). Haw. rev. 135. Subshrubs. Leaves opposite, distinct more or less, triquetrous. Flowers usually solitary, terminal. Calyx 5-cleft. Stigmas 5.


Caulescens Fig-margold. Fl. May, July. Clt. 1731. Shrub 1 foot.


Deltoid-leaved Fig-margold. Fl. May. Clt. 1731. Sh. 1 ft.

156 M. MIRICATUM (Haw. obs. p. 364, misc. 75, syn. 297. rev. 139.) stem erect, branched; leaves crowded, deltoid, glaucous, and are, as well as the bractees, and lobes of calyx trifuriously denticulated. ʒ. D. G. Native of the Cape of Good Hope.—Dill. elth. f. 246. Flowers red. Very like the two

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preceding species, but smaller. Stigmas erect, hardly the length of the filaments. Capsule more depressed.

**Muricate Fig-margold.** Fl. May. Cilt. 1731. Sh. 1½ foot.


* * Flowers aggregate, reddish.


**Lunate**-leaved Fig-margold. Fl. July. Cilt. 1812. Sh. 1 ft.

159 M. *falciforme* (Haw. syn. 299. rev. 127.) stem suffruticosité, at length decumbent; leaves much crowded, small, thick, falcate, aciciniform, glaucous, largely toothed; flowers somewhat fastigate. D. G. Native of the Cape of Good Hope. Flowers reddish, showy, an inch and a half in diameter.


160 M. *falcatum* (Lin. spec. 694.) stem woody, erect; branches numerous, panicked, filiform; leaves minute, distinct, compressed, *triquetrous*, falcate, rather glaucous. D. G. Native of the Cape of Good Hope.—Dill. elth. f. 275. and 276. Haw. obs. 366. misc. 72. syn. 298. rev. 136. Flowers small, numerous, pale red, expanded through the day, sweet scented.

**Falcate**-leaved Fig-margold. Fl. June, Aug. Cilt. 1727. Shrub 1 foot.


**Twiggy** Fig-margold. Fl. Feb. Apr. Cilt. 1793. Sh. 2 to 3 ft.

* * Flowers solitary, rose-coloured or pale red.

163 M. *decumbens* (Haw. obs. 352. misc. 69. syn. 300. rev. 136.) branches much crowded, decumbent; leaves compressed, *triquetrous*, incurved, attenuated at both ends, very glaucous. D. G. Native of the Cape of Good Hope. Flowers 2 inches in diameter, almost white, or very pale red.


165 M. *incunatum* (Haw. obs. p. 69. syn. 300. rev. 136.) stem suffruticosité, erect; branches slender, effuse, leafy; leaves compressed, *triquetrous*, very glaucous, attenuated at both ends, aciciniform. D. G. Native of the Cape of Good Hope. Flowers pale red.

Var. *γ*, *roseum* (Wild. enum. p. 535.) leaves obtuse, attenuated at the base.

Var. *δ*, *multiradiatum* (Jacq. fragm. t. 53. f. 2.) leaves acute, spreading, blunt on the back.

**Incurred**-leaved Fig-margold. Fl. June. Cilt. 1802. Sh. 1½ ft.

164 M. *confluentum* (Haw. syn. p. 301. rev. 137.) stem erect, much branched; leaves *triquetrous*, crowded, robust, incurred, very glaucous. D. G. Native of the Cape of Good Hope. Flowers showy, pale red. Perhaps only a variety of *M. incuinum*.


§ 30. *Stenax* (from *steno*, stenosph, narrow; leaves and petals). Haw. in phil. mag. Sept. 1831. Small subshrubs, with the branches nearly half a foot high, effuse, and are, as well as the leaves, filiform. Petals very narrow, or setaceous, very pale red.

165 M. *stenum* (Haw. in phil. mag. 1831. p. 420.) branches effusely decumbent, flexuus, filiform; leaves slender, falcate incurred, *triquetrous* terete, mucronate, with few dots, glaucous; flowers 1 or 3 together, terminal. D. G. Native of the Cape of Good Hope. Flowers expanding before meridian, of a violaceous reddish-colour.

**Narrow** Fig-margold. Fl. Aug. Cilt. 1829. Shrub ½ foot.

166 M. *dehile* (Haw. in phil. mag. Nov. 1826. p. 331.) smooth; branches filiform, a little compressed; leaves crowded at the nodes of the repent stems, bluntly and aciciniforme *triquetrous*, glaucent; flowers few, terminal. D. G. Native of the Cape of Good Hope. Flowers very pale red, or nearly white, expanding before meridian.


**Small-leaved** Fig-margold. Fl. May. Cilt. 1795. Sh. dec.


169 M. *pygmeum* (Haw. suppl. 99. rev. 134.) stem very short, branched; leaves conuate at the base, oblong-ovate, semiterete, awnless, in winter united nearly to the top. D. G. Native of the Cape of Good Hope. Flowers unknown, but probably pale red.

**Pygmy** Fig-margold. Cilt. 1805. Shrub ½ foot.

§ 32. *Scábrida* (a dim. of *socber*, rough; rough or scabrous leaves). 
*Haw.* misc. 71.— *Scábrus*, *Salm-Dyck*, obs. 27.— *Asperifólia*, *Haw.* rev. 138. Stems suffruticosse; branches expanded, filiform. Leaves more or less triquetrous, rather compressed, scabrous from dots, usually a little incurred. *Flowers pedunculate, reddish, middle-sized.*

*Stamens collected.*

171 *M. Scábrus* (Lin. spec. 692.) stem shrubby, branched; leaves rather triquetrous, green, straight, very rough from shining warts; lobes of calyx ovate, acuminate; petals crenated at the apex; stamens collected. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope. — Dill. elth. f. 251. — Haw. obs. 345. misc. 71. syn. 267. rev. 138. Flowers rose-coloured.} \)

*Var. \( \beta \), purpureum; flowers purple.*

*Scabrous Fig-marigold.* 
*Fl. July.* Clt. 1731. Sh. 1 foot.

172 *M. versicolor* (Haw. misc. 71. syn. 268. rev. 139.) stem shrubby, branched; leaves almost triquetrous, glaucous, scabrous from warts; lobes of calyx ovate, acuminate; petals somewhat bidentate at the apex; stamens collected. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope. Petals variable, expanding in the heat of the sun, of a shining white or silvery colour, but when closed in the morning and evening they are pale reddish.} \)

*Party-coloured-flowered Fig-marigold.* 
*Fl. May,* Clt. 1795. 
Shrub 1 foot.

173 *M. retrofléxum* (Haw. misc. 71. syn. 269. rev. 139.) stem suffruticosse; branches decumbent; bark white; leaves rather triquetrous, very glaucous, scabrous; lobes of calyx retroflexed; petals distant; stamens collected. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope.} \)

*Emarginate-petalled Fig-marigold.* 
*Fl. May,* Clt. 1724. 
Shrub dec.

174 *M. imbericans* (Haw. suppl. p. 94.) stem erect, shrubby; leaves linear, obsolesly triquetrous, smoothish, of a whitish glaucous-colour, imbricated at the tops of the canescent branches. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope. Flowers red. Said to be allied to } M. \text{ retrofléxum.} \)

*Imbricating-leaved Fig-marigold.* 
*Fl. May,* Clt. 1818. 
Shrub 1 foot.

175 *M. defléxum* (Ait. hort. kew. 2. p. 187.) stems shrubby, rather crowded, deflexed; leaves rather triquetrous, glaucous, roughish, attenuated downwards; petals numerous, much imbricated; stamens collected. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope.} \)

*Deflexed-branched Fig-marigold.* 
*Fl. July,* Clt. 1774. 
Shrub 1 foot.

176 *M. polyanthum* (Haw. syn. 270. rev. 140.) branches bushy, expanded, crowded; bark on young stems rufous; leaves small, glaucous, triquetrous, scabrous; flowers very numerous, panicked; petals imbricated. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope. Flowers small, very pale red. } M. \text{ flexile, Haw. rev. 141. is only a variety of this species in a younger state, which has been confirmed by Salm-Dyck.} \)

*Many-flowered Fig-marigold.* 
Shrub 1 1/2 foot.

177 *M. polyphyllum* (Haw. rev. 141.) branches bushy, decumbent, assurgent; leaves much glomerated, rather robust, somewhat incurvally recurved, clavately and bluntly triquetrous, compressed, scabrous from dots, glaucous. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope.} \)

*Many-leaved Fig-marigold.* 
*Fl. June,* Clt. 1819. 
Shrub 1 to 2 feet.

178 *M. violaceum* (D. C. pl. grass. t. 84.) stem shrubby, erect; branches expanded; leaves triquetrously semi-terete, rough from dots, acute, glaucous; peduncles 1-flowered, naked or bacteate at the very base; lobes of calyx spreading, unarmed, but prickle-formed. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope.} \)

*Violaceous-branched Fig-marigold.* 
*Fl. June,* Clt. 1820. 
Shrub 1 to 2 feet.

179 *M. emarginatum* (Lin. spec. 692.) branches expanded; leaves triquetrous, scabrous, glaucous; peduncles bibracteate; lobes of calyx unarmered, but spine-formed; petals deeply emarginated at the apex. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope. — Dill. elth. f. 250. — Haw. obs. 340. misc. 70. syn. 268. rev. 142. Flowers pale red, like those of } M. \text{ violaceum.} \)

*Emarginate-petalled Fig-marigold.* 
*Fl. June,* Clt. 1792. 
Shrub 1 to 2 feet.

§ 33. *Bracteata* (bracteatus, bacteate; flowers girded by bracteas). *Salm-Dyck*, obs. 28. *Haw.* rev. 143.— *Addinca Inclusíentía*, *Haw.* syn. 288. Stems erect, shrubby; branches much decomposed. Leaves distinct, triquetrous, hooked at the apex, more or less scabrous from dots. *Flowers girded by 2-4 broadly ovate keeled bracteas, which clasp the calyx, solitary, reddish, always expanded; inner petals thread-formed.*

180 *M. bracteatum* (Ait. hort. kew. 2. p. 185.) stem shrubby, erect; branches compressed, of a reddish brown colour; leaves green, triquetrous; bracteas 4, broadly ovate, keeled, claspine the calyx. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope.} \)

*Bracteate Fig-marigold.* 
*Fl. July,* Clt. 1774. 
Shrub 1 1/2 foot.

181 *M. ançeeps* (Haw. syn. 289. rev. 143.) stem shrubby; branches decomposed, 2-edged, of a brownish canescent-colour; leaves acinaciformly triquetrous; sides rather membranous below; dots large, pellucid, elevated. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope. Flowers of a deep red colour.} \)

*Var. \( \beta \), pálldídum* (Haw. rev. 143.) branches of a rufous coppery colour; leaves rather incurved; petals pale reddish. 
*Two-edged-branched Fig-marigold.* 
*Fl. Sept.* Clt. 1811. 
Shrub 1 1/2 foot.

182 *M. gracile* (Haw. rev. 144.) stem shrubby; branches very slender, straight; leaves glaucous, slender, rather scabrous; bracteas ovate, acute, almost clasping the calyx. \( \text{F}. \text{G}. \text{D}. \text{Native of the Cape of Good Hope.} \)

*Slender Fig-marigold.* 
*Fl. Aug.* Clt. 1794. Sh. 1 1/2 ft.

183 *M. radiaííum* (Haw. obs. 232. misc. 90. syn. 289. rev. 144.) stem shrubby; branches crowded; bark canescent; leaves glaucous, attenuated, and hooked at the apex; bracteas
broadly ovate, clasping the peduncles above.  M. D. G. Native of the Cape of Good Hope.—Dill. elth. f. 249. Corolla reddish, larger than those of its allies.


184 M. compres'sum (Haw. obs. 326. not 416. misc. 91. syn. 289. rev. 144.) stem shrubby; branches rather compressed; leaves glaucous, triquetrous, with equal sides, very rough; bracteas ovate, acute, clasping the top of the peduncles.  M. D. G. Native of the Cape of Good Hope. Flowers middle-sized, reddish. Perhaps M. compres'sum, Horn. hort. haft. 2. p. 454. is the same species.

**Compressed-branched Fig-margold.** Fl. July, Sept. Cilt. 1792. Shrub 1½ foot.

185 M. pat'tatum (Haw. syn. p. 334. rev. 145.) stem shrubby; branches hardly erect; leaves linear, half erect, glaucous, roughish from pellucid dots.  M. D. G. Native of the Cape of Good Hope. This species comes near to M. compres'sum, but is less stiff; the leaves shorter and thicker, and the flowers are larger and paler.

**Spreading Fig-margold.** Fl. Oct. Nov. Cilt. 1811. Sh. 1½ ft.

186 M. Aspereum (Haw. rev. p. 145.) stem shrubby; leaves compressed, triquetrous, long, of a bluish green-colour, all of pellucid dots, very sebaceous, hooked at the apex; keel furnished with one tooth.  M. D. G. Native of the Cape of Good Hope. Flowers unknown. Perhaps this species does not belong to the present section.

**Rough Fig-margold.** Cilt. 1818. Shrub 1½ foot.

187 M. serra'tum (Linn. spec. 696.) stem erect, branched; leaves opposite, distinct, triquetrous, subulate, having the carinal angle serrated, with the serratures turned backwards.  M. D. G. Native of the Cape of Good Hope.—Dill. elth. f. 238. Flowers solitary, terminal, pedunculate. Calyx 5-crenate, attenuated at the base. Petals yellow, copper-coloured at the apex. Stigmas 5, short, obtuse, approximate. This species was formerly cultivated by Dillenius, but has now vanished from the gardens, and is therefore very little known.

**Serrate-keeled Fig-margold.** Fl. June, July. Cilt. 1707. Shrub 1 to 2 feet.

§ 34. **Conferta** (from confertus, crowded thick together; branches). *Haw.* syn. 240. *Salm-Dyck,* obs. 29.—*Eximia* and *Blánda,* Haw. rev. 145-147. Stems shrubby; branches crowded, ascending. Leaves opposite, rather concave, crowded, triquetrous, entire, acute, with the angles smooth. Flowers pedunculate, solitary or by threes, shonny, expanding in the sun, reddish or pale rose-coloured.

188 M. ama'rum (Salm-Dyck in litt. ex D. C. prod. 3. p. 436.) stem branched, shrubby; leaves green, crowded, elongated, nearly triquetrous, bluish, with a mucron; flowers terminal, showy, disposed by threes.  M. D. G. Native of the Cape of Good Hope. Flowers red.

**Pleasing Fig-margold.** Shrub 1 foot.

189 M. fornòsum (Haw. rev. 145.) stems suffruticoso, humble; branches rather decumbent, elongated; leaves triquetrous, long, green, glittering in sunshine, much crowded, but more remote on the branches; flowers terminal, disposed by threes; stigmas 5-6, shorter than the filaments, rather lanceolate.  M. D. G. Native of the Cape of Good Hope. Petals beautiful red, blurr.

**Beautiful Fig-margold.** Fl. Aug. Sept. Cilt. 1828. Sh. 1 ft.

190 M. spectac'ulare (Haw. obs. 385. misc. 68. syn. 240. rev. 145.) stems rather humble; floriferous ones ascending or erect; leaves glaucous, triquetrous, and are, as well as the branches, crowded; stigmas 5, obovate, one-half shorter than the stamens, which are white.  M. D. G. Native of the Cape of Good Hope. Curt. bot. mag. t. 396. D. C. pl. grass. t. 153. Leaves rather connate, sometimes furnished with one tooth at the top of the keel. Flowers beautiful reddish, 2 inches in diameter.

**Showy Fig-margold.** Fl. May, Aug. Cilt. 1787. Shrub 1 ft.

191 M. conspicuum (Haw. syn. 240. rev. 146.) floriferous stems erect; leaves green, glittering in sun-shine, triquetrous, and are, as well as the branches, crowded; stigmas lanceolate, length of the stamens.  M. D. G. Native of the Cape of Good Hope. Flowers middle-sized, reddish. Perhaps M. conspicuum, Spreng. nov. prov. 27. but the leaves are there said to be semi-terete. Flowers beautiful red.

**Conspicuous Fig-margold.** Fl. Sept. Oct. Cilt. 1806. Sh. 1 ft.

192 M. turbinátum (Jacq. hort. vind. t. 476.) stem shrubby, branched, diffuse; leaves glaucous, elongated, acute, triquetrous, crowded; flowers on long peduncles, reddish; ovary contracted into a neck beneath the calyx.  M. D. G. Native of the Cape of Good Hope. Petals numerous, linear, spreading much. Salm-Dyck. In litt.

**Turbinate Fig-margold.** Shrub 1 foot.

193 M. blán'dum (Haw. suppl. 95. rev. 147.) stem shrubby; branches numerous, compressed, ascending; leaves compressed, triquetrous, crowded, narrow, acutish, smooth; peduncles equal, longer than the bracteas; stigmas 5, short, ramentaceous.  M. D. G. Native of the Cape of Good Hope. Branches rufous or bay-coloured. Leaves twice the thickness of those of *M. blándum,* to which it is nearly allied, and the corolla is less open. It is, however, perhaps only a variety of it.

**Curred-leaved Fig-margold.** Cilt. Ju. 1818. Sh. 1½ ft.


195 M. tetra'gonum (Thunb. prod. 91.) stem erect, tetragonal, shrubby; leaves cylindrically trigonal.  M. D. G. Native of the Cape of Good Hope. Haw. rev. 149. Corolla yellow. This species is omitted by Haworth.

**Tetragonally-stemmed Fig-margold.** Shrub 1 foot.

196 M. stríc'tum (Haw. misc. 82. syn. 262. rev. 149.) stem woody, branched, very stiff, straight; leaves triquetrous, obtuse, expanded, glaucous, beset with large dots.  M. D. G. Native of the Cape of Good Hope. This species grows 2 or 3 feet high in the gardens, but has never yet flowered. But from a specimen of it received from the Cape by Haworth, they are said to be showy and yellow.

**Straight Fig-margold.** Cilt. 1795. Shrub 2 to 3 feet.

197 M. cymifórmia (Haw. obs. 264. misc. 82. syn. 263. rev. 149.) stem suffruticoso; branches erectish, filiform, crowded; leaves triquetrous, boat-shaped, spreading, glaucous.  M. D. G. Native of the Cape of Good Hope. Flowers unknown. Perhaps *M. süssile,* Thunb. fl. cap. 419. belongs to this species, which Thunberg says has red flowers.

**Boat-formed-leaved Fig-margold.** Cilt. 1793. Sh. 1 ft.

198 M. slóile (Ait. hort. kew. 2. p. 192.) branches crowded, 2-edged, decumbent; leaves spreading, turgidly triquetrous, firm, canescent, with the margins blunt, and lined with dots.  M. D. G. Native of the Cape of Good Hope. Haw. obs.
FICIOIDE. 1. MeseMbranthemum.


200 M. Cymborium (Haw. in phil. mag. 1824. vol. 64. p. 424.) stem shrubby, erectish; branches few, 2-edged, hoary; leaves trigonal, boat-shaped, pale green, beset with large dots. § D. G. Native of the Cape of Good Hope. Flowers unknown. This species appears to be intermediate between M. aureum and M. cymbiforme.

Boat-leaved Fig-marigold. Clt. 1822. Shrub 1 to 2 feet.

§ 36. Aérea (from aureus; of gold; in reference to the yellow flowers). Haw. rev. 148.—Equisetaria, Salm-Dyck, obs. 33.—Frequentiflora, Haw. syn. 263. exclusive of some species. Stems suffruticosum, and as we are as the branches erect. Leaves distinct, dotted, blunter or acutely triquetrous, elongated, glaucous. Flowers large, solitary, yellow, or copper-coloured, expanding in sun-shine. Stigmas thick.


Subdivision VI. Teretiu’scula (a dim. of teres, cylindrical; leaves nearly cylindrical). Haw. rev. 150. Subshrubs. Leaves distinct, rarely connate at the base, nearly terete, without any papule. Calyx 5-cleft. Stigmas 5, except in one of the species, which vary to 7.


204 M. verruculatum (Lin. spec. 696.) stem erect; leaves much crowded, very glaucous, cylindrical, hardly triquetrous, obtuse, and a little mucronate, sebaceous, longer than the internodes. § D. G. Native of the Cape of Good Hope.—Dill. edth. 259. D. C. pl. grass. t. 36. Haw. obs. 260. misc. 81. syn. 258. rev. 165. Flowers small, yellow, subumbellate, expanding in the evening. The stigmas are said to be 5, but Dillenius has seen them varying from 5-7.

Warted Fig-marigold. Fl. May, Ju. Clt. 1731. Sh 1 ½ ft.

§ 38. Croceum (from croceus, like saffron; colour of flowers). Haw. in phil. mag. Aug. 1826. p. 128. Subshrubs with second branches. Leaves thick, of a bluish glaucous colour, semi-terete at the base, oblong-ovata at the apex. Flowers terminal, solitary, small or middle-sized, scentless, at first yellow, but as they become older change to a copper-coloured. Peduncles succulent.

Calyx succulent, unequal.

205 M. lute’um (Haw. in phil. mag. Aug. 1826. p. 128.) leaves obtuse; flowers small; stem branched, erect, and the nodes tumid, and throwing out roots. § D. G. Native of the Cape of Good Hope. This species comes very near M. croceum, var. γ, lute’olum, but is taller, more slender, and more branched, and the leaves and flowers are much smaller. Corolla pale yellow, but becoming of a deeper colour as they fade.


206 M. lute’olium (Haw. l. c. p. 129.) leaves crowded, acute at the apex, and a little recurved; branches slender and dense; flowers small. § D. G. Native of the Cape of Good Hope. M. laeve, Thunb. prod.? Flowers yellow, and more numerous than those of the last species. It differs from the last in the leaves and in the more dwarf stature.


207 M. croceum (Jacq. fragm. t. 11. f. 3.) stem erect; leaves crowded, semi-cylindrical, mealy, glaucous, bristly, shorter than the internodes, somewhat sebaceous; lobes of calyx somewhat unequal. § D. G. Native of the Cape of Good Hope. Haw. rev. 156. Leaves evidently connate. Petals obtuse, copper-coloured.

Var. β, purpureo-croceum (Haw. obs. 257. misc. 81. syn. 259. rev. 155.) flowers copper-coloured, purple on the outside. M. insititu, Willd. enum. 536. Hardy distinct from the species, and ought probably to be joined with it, according to Salm-Dyck, in lit.

Var. γ, luteo-croceum (Haw. rev. 155.) flowers yellow on both sides, but as they fade become copper-coloured.


§ 39. Frequentiflora (from tenuis, slender, and flos, a flower; slender flowers). Salm-Dyck, obs. 24. Haw. rev.—Frequentiflora, Haw. syn. 263. exclusive of the species. Stems shrubby; branches slender, effuse. Leaves opposite, distinct, nearly terete, rather triquetrous or somewhat compressed, without papule. Flowers solitary, pedunculate, expanding in the morning, yellow or scarlet. This section is nearly allied to Aérea.

208 M. cocce’um (Haw. obs. 247. misc. 85. syn. 265. rev. 150.) stem shrubby, erect; leaves teretely triquetrous, rather compressed, obtuse, glaucous; peduncles smooth at the base; calyx of calyx bluish, nearly equal. § D. G. Native of the Cape of Good Hope. D. C. pl. grass. t. 83. Lodd. bot. cab. t. 1033. Curt. bot. mag. 59. M. bicolorum minus, Haw. obs. 246. M. bicolorum cocceum, Willd. spec. 2. p. 1039. Leaves shorter than in the following species. Petals scarlet on both surfaces. There are 2 varieties of this plant, the one with obtuse leaves and the other with acute leaves.

209 M. bicolorum (Lin. spec. ed. 1. p. 485.) stem shrubby, erect; leaves rather triquetrous, acute, green; peduncles and calyxes scabrous; calyce lobes unequal. Æ. D. G. Native of the Cape of Good Hope.—Dill. eth. f. 258. Haw. obs. 241. misc. 85. syn. 265. rev. 151. This species is usually confused with M. coccineum, but the leaves are longer and the petals are yellow inside and scarlet outside. Stigmas shorter than the filaments. There are 2 varieties of this plant, one with erect branches and the other with spreading branches.


210 M. inaequalle (Haw. syn. 266. rev. 151.) stem shrubby, erectish; branches effusely decumbent; leaves rather triquetrous, deep green; fructiferous peduncles compressely clavate; lobes of calyx very unequal. Æ. D. G. Native of the Cape of Good Hope. Bradl. succ. 7. bad. ex Haworth. Very like M. bicolorum, but differs in the branches being effuse, the flowers being paler on the outside, and in the calyce lobes being longer than the membrane.


211 M. tenutifolium (Lin. spec. 693.) stem shrubby, erectish; leaves semi-terete, rather compressed, subulate, green, glabrous, longer than the internodes; peduncles elongated, naked. Æ. D. G. Native of the Cape of Good Hope. Petals yellow, at length becoming reddish. There are varieties of the species with distant and crowded leaves and branches.


212 M. variaible (Haw. misc. 85. syn. 266. rev. 152.) stem shrubby, effuse, rather decumbent; leaves somewhat triquetrous, compressed, glaucous, scabrous; lobes of calyx nearly equal. Æ. D. G. Native of the Cape of Good Hope. Petals yellow, at length becoming reddish. There are varieties of the species with distant and crowded leaves and branches.


§ 40. Adéncæ (from adunca, hooked; leaves hooked at the apex). Salm-Dyck, obs. 25. Haw. rev. 152.—Adénca claudéntia, Haw. misc. 87. Stems suffruticoso, hardly half a foot high. Leaves nearly terete, subulate, usually incurved, acutely hooked at the apex. Flowers solitary, expanding before meridian, and closing in the evening, small, reddish. Petals usually striated or white at the base.

213 M. spiniförmé (Haw. obs. 240. misc. 87. syn. 291. rev. 152.) stem suffruticoso, with erect branches; leaves cylindrical, subulate, spine-formed, erect, recurved at the apex; peduncles and keels of the bracteas rather scabrous. Æ. D. G. Native of the Cape of Good Hope. Bark of branches dark. Flowers small, pale red, with the petal paler at the base.

Var. β. subalbidum (Haw. suppl. 96. ex rev. 152.). Leaves less hooked.


214 M. curviförmé (Haw. misc. p. 88. syn. 290. rev. 152.) stems suffruticoso; branches firm, erectish, roughish, angularly compressed; leaves rather distant, expanded at the base, and incurvously recurved at the apex. Æ. D. G. Native of the Cape of Good Hope. Flowers numerous, middle-sized, pale red. Stigmas blackish. M. ceratophyllum, Willd. enum. suppl. p. 37. is referred to this species by the Prince de Salm-Dyck, but this is doubted by Haworth, who gives a different character to the plant.


215 M. flexiförmé (Haw. suppl. 98. rev. 153.) stem suffruticoso; branches filiform, compressed, flexuous, decumbent; leaves subulate, triquetrous, incurved below, recurved and rather flexuous above, and a little hooked at the apex. Æ. D. G. Native of the Cape of Good Hope. This plant is 3 times smaller than the preceding species, and more depressed. Flowers unknown. There are varieties of this species with pale green and dark green leaves.


216 M. inconspicuum (Haw. in phil. mag. aug. 1826. p. 128.) stems suffruticoso, very stiff; leaves trigonal-semi-terete, small, hooked; flowers solitary, minute, terminal. Æ. D. G. Native of the Cape of Good Hope. A small, bushy shrub, with spreading, ascending, or incurved, hard, glistering branches; leaves glittering in the sunshine from papule. Flowers deep red, expanding in the morning.


217 M. aduncus (Haw. syn. 291. rev. 153.) stem shrubby; branches erect, much crowded; leaves crowded, semi-cylindrical, acuminate, very much recurved at the apex. Æ. D. G. Native of the Cape of Good Hope. Peduncles elongated, flexuous, bibracteate in the middle. Petals pale red inside, but of a deeper colour on the outside, and more so at the apex. Stigmas erect, subulate, green.


218 M. filicau'le (Haw. syn. 291. rev. 153.) stems tufted, suffruticoso, filiform, very weak, creeping; leaves much crowded, semi-cylindrical, acuminate. Æ. D. G. Native of the Cape of Good Hope. Peduncles elongated, flexuous, bibracteate in the middle. Petals pale red inside, but of a deeper colour on the outside, and more so at the apex. Stigmas erect, subulate, green.


219 M. produc'tum (Haw. in phil. mag. 1824. p. 424.) stem suffruticoso, erect; branches finely decussate, numerous; leaves crowded at the tops of the branches, semi-cylindrical, glaucous, rather incurved, full of pellucid dots; flowers terminal, by threes; calypce lobes unequal, two of which are long and the other three short. Æ. D. G. Native of the Cape of Good Hope. Corolla rose-coloured. Stigmas 5, erect.

Produced-calyxed Fig-margarid. Fl. May, June. Clt. 1822. Shrub 1 foot.

220 M. stipula'ceum (Lin. spec. 693.) stem shrubby, and is as well as the branches erect; leaves teretely triquetrous, long, subulate, incurved, glaucous, full of pellucid dots, margined at the base. Æ. D. G. Native of the Cape of Good Hope.—Dill. eth. f. 267 and 268. Haw. obs. 256. misc. 65. syn. 301. rev. 154. Axes usually bearing leaves, hence the metaphorical name of stipulaceum, there being no stipules. Corolla light red, paler on the under side, 2 inches in diameter.

Stipulaceus Fig-margarid. Fl. May, Ju. Clt. 1723. Sh. 1 ft.

221 M. Haworthiánum (Willd. enum. suppl. 36. Dom. hort. cant. ed. 6.) stem shrubby, erect; leaves crowded, compressedly cylindrical, attenuated at both ends, erect when young, but spreading and glaucous when old. (Salm-Dyck. in litt.). Æ. D. G. Native of the Cape of Good Hope. Haw. syn. 302. rev.
Mesembryanthemum.

Native leaves. Native D. Haw.


228 M. stelligerum (Haw. in phil. mag. 1824. p. 61. but not of his syn.) branches procumbent, elongated; leaves remote, half-erect, terminating in 5-6 radiating hairs at the apex; calyx glabrous at the base; lobes 5, nearly equal. D. G. Native of the Cape of Good Hope. M. barberatum, Haw. syn. 277. rev. 190. but not of phil. mag. Bradl. succ. t. 5. Curt. bot. mag. 70. Perhaps merely a variety of M. barberatum.


229 M. intonsum (Haw. in phil. mag. 1824. p. 62.) branches erectly decumbent, effuse, hispid; leaves terminating in 10-15 radiating hairs at the apex; calyx girded by a black beard. D. G. Native of the Cape of Good Hope. Flowers reddish.

Flowers reddish. Common in the sand and earthy soils of the bays of the Cape of Good Hope.


230 M. vulgatum (Haw. in phil. mag. 1824. p. 428.) leafy, procumbent; branches rather villous; leaves horizontal, crowded, terminating in 10-15 radiating hairs. D. G. Native of the Cape of Good Hope. Root referable to that of M. intonsum; the root of the plant comes nearest to M. intonsum. Flowers middle-sized, reddish.


232 M. brevissum (Haw. obs. p. 302. misc. 105. syn. 279. rev. 191. phil. mag. 1824. p. 62.) plant densely tufted; leaves semiterete, scabrous from pulpule, terminating in many radiating hairs, rather ciliated at the base, greenish; peduncles very hairy as well as the calyx, which is 6-lobed. D. G. Native of the Cape of Good Hope. —Dill. elth. f. 236. without a flower. Sims, bot. mag. t. 1220. Old stem thick, branched, very short. Flowers expanding in the heat of the sun, purple, larger than those of M. stellatum.

Dense Fig-margold. Fl. May, Aug. Clt. 1732. Sh. ½ foot.

— Echinata (from echinatus, set with prickles; leaves). Salm-Dyck. obs. 27. Haw. rev. 189. — Hispifolia, Haw. syn. 275. Stems suffruticose, much branched. Leaves nearly terete, distinct, more or less hispid all over, as well as the branches. Lobes of calyx 5, leaf-formed. Corolla white or pale yellow. Stigmas 5.

233 M. echinatum (Ait. hort. kew. 2. p. 194.) stem erect, branched; leaves oblong-ovate, filled, rather triquetrous, gibbous, ramentaceous-echinated; lobes of calyx leaf-formed, unequal. D. G. Native of the Cape of Good Hope.

Var. álbum. (Haw. l. c.) flowers white.

Hedge-hog Fig-marigold. Fl. Jul. Oct. Ct. 1774. Sh. $\frac{1}{2}$ to $\frac{3}{4}$ ft. 234 M. strúmosúm (Haw. rev. 190.) stems decumbent, branches; leaves crowded, depressingly cylindrical, hispid all over; lobes of calyx nearly equal; root at length tuberous. $\gamma$. D. G. Native of the Cape of Good Hope. Corolla pale straw-coloured or white.

Strúmosúm Fig-marigold. Fl. Aug. Ct. 1820. Sh. $\frac{1}{2}$ to $\frac{3}{4}$ ft.


235 M. calyctínum (Haw. rev. 187.) branches effuse; leaves cylindrical, rather filiform, obtuse, papillose; two of the calyceal lobes are foliaceous, much exceeding the other three in length; stems longer than the stigmas. $\gamma$. D. G. Native of the Cape of Good Hope. Flowers white.

Long-calyced Fig-marigold. Fl. Jul. Aug. Ct. 1819. Sh. $\frac{2}{3}$ ft. 236 M. türberculátum (D. C. in Pers. ench. 29. p. 44.) stems decumbent, much branched; branches ascending; leaves terete, acute, papillose, soft; branches, peduncles, and calyces hispid; calyx campanulate at the base; stamens hardly exceeding the stigmas. $\gamma$. D. G. Native of the Cape of Good Hope. M. hispidúlum, Haw. suppl. 94. rev. 189. Petals rose-coloured, but purplish above, with a deeper-coloured middle line. There is also a variety of this with white flowers.


237 M. attenuátem (Haw. rev. 183.) plant slender; branches decumbent, filiform; leaves semi-cylindrical, filled, obtuse, or nearly terete, papillose; peduncles elongated; calyces hairy at the base. $\gamma$. D. G. Native of the Cape of Good Hope. Petals at first white, or with a rose-coloured middle line, whence there is a rose-coloured circle in the flower.


238 M. striátum (Haw. obs. 289. misc. 188.) stem erect; leaves semi-cylindrical, subulate, papillose; calyx woolly; stamens collected, length of stigmas. $\gamma$. D. G. Native of the Cape of Good Hope. Capsule angular at the apex.

Var. a. roșéum (Haw. rev. 183.) petals paler rose-coloured, with a deeper-coloured line in the middle.—Dill. elth. f. 231.

Var. b. pálínns (Haw. l. c.) petals white, each with a red line at the base. D. C. pl. grass. t. 132.

Striated-flowered Fig-marigold. Fl. May, Oct. Ct. 1727. Shrub $\frac{3}{4}$ foot.

239 M. floribundum (Haw. misc. p. 100. syn. 274. rev. 187.) branches spreading, very numerous; leaves almost cylindrical, somewhat incurved, papillose, obtuse; calyces hemispherical, beset with papillose pili; stamens not equaling the stigmas in length. $\gamma$. D. G. Native of the Cape of Good Hope. M. hispidum $\beta$. pallidum, Haw. obs. 279. Flowers numerous, pale red, with the petals white at the base.

Var. b. torquátum (Haw. rev. 187.) flowers fewer, larger and more remote; stamens exceeding the stigmas. According to Salo-Dyck this is not distinct from M. floribundum, which are both perhaps referrible to M. striátum, var. $\beta$.

Bundle-flowered Fig-marigold. Fl. May, Oct. Ct. 1704. Shrub $\frac{3}{4}$ foot.


Var. a. glaucoscens (Salm-Dyck. in litt.) leaves glaucous. M. cândens, var. a, minus, Haw. in phil. mag. dec. 1831. p. 425.

Var. b. viréscens (Salm-Dyck. in litt.) leaves greener; branches less elongated. M. cândens $\beta$, virédeus, Haw. l. c.

Glittering Fig-marigold. Ct. 1820. Shrub pr.

241 M. hirtéllum (Haw. obs. 284. exclusive of the synonyms, misc. 102. syn. 274. rev. 186.) stem erect, bushy; leaves crowded, cylindrical, very blunt, beset with glistering papula; calyx turbinate, beset with papulose pili; stamens equal in length to the stigmas. $\gamma$. D. G. Native of the Cape of Good Hope. Flowers larger than those of any other species of this section, showy; petals pale red, white at the base.

Brísty Fig-marigold. Fl. May, Nov. Ct. 1792. Sh. $\frac{1}{2}$ to $\frac{3}{4}$ ft. 242 M. subcompressum (Haw. in phil. mag. Aug. 1826. p. 183.) plant erect and twiggy; leaves greenish-canaceous, compressely semi-terete, obliquely obtuse; upper part of branches rather pilose. $\gamma$. D. G. Native of the Cape of Good Hope. Flowers of a reddish violaceous colour.

Var. b. minus (Haw. l. c.) plant not half the size of the species.


243 M. furfuréllum (Haw. in phil. Dec. 1831. p. 421.) shrub bushy; branches crowded, straightish, stiff, furfuraceous; leaves cylindrical, very blunt, and are, as well as the calyx, beset with obsolete crystalline papula; flowers small, numerous. $\gamma$. D. G. Native of the Cape of Good Hope. Flowers terminating the branches, usually solitary, very pale red.

Furfuraceous Fig-marigold. Ct. 1830. Shrub 1 foot.

244 M. hispidum (Lin. spec. 691.) stem erect, bushy; leaves cylindrical, very blunt, green, glabrous, and covered with glistering papula, as well as the calyx, which is conical; stamens exceeding the stigmas. $\gamma$. D. G. Native of the Cape of Good Hope.—Dill. elth. f. 278. D. C. pl. grass. t. 66. M. hispidum a, Haw. obs. 277. M. hispidum, Haw. syn. 273. rev. 186. Flowers deep purple.

Hispid Fig-marigold. Fl. May, Oct. Ct. 1704. Sh. $\frac{1}{2}$ to 1 ft. 245 M. subhispidum (Haw. in phil. mag. Dec. 1831. p. 421.) stem erect; branches and peduncles usually without hairs; leaves cylindrical, very blunt, and are, as well as the obconical calyces, glabrous, greenish, and covered with glistering papula. $\gamma$. D. G. Native of the Cape of Good Hope. M. hispidum $\beta$, platypétalum, Haw. rev. 186. Petals pale purple, whitish at the base, emarginate at the apex. Very like M. hispidum, but taller, less branched; but the branches are longer, more erect, and straight, and the flowers paler.


§ 46. Aspericádium (from asper, rough, and caulis, a stem; stems rough). Haw. misc. 97. rev. 182. Salm-Dyck. obs. 26. Stems shrubby, hardly a foot and a half high; branches filiform, scabrous. Leaves distinct, remote, nearly terete, glistering from papula. Flowers expanding before meridian; reddish or copper-coloured. Calyx 5-cleft. Stigmas 5, but in one of the species the calyx is 6-cleft, and the stigmas are 6.

* Flowers reddish.

246 M. pulvéruléntum (Haw. obs. 265. misc. 89. syn. 279. rev. 185. but not of Willd.) stem erect; branches crowded; leaves cylindrically trigonous, obtuse, dotted with white, powdery, scabrous; calyx 6-cleft. $\gamma$. D. G. Native of the Cape
of Good Hope. Flowers almost like those of *M. barbatum*, reddish. Stigmas 6, recurved at the apex.

**Pondery Fig-marigold.** May. Clt. 1792. Sh. 1/2 to 1 foot.

247 M. *seisile* (Thunb. fl. cap. 419.) stem erect, terete; branches flexuous, divaricate; leaves globose-trigonal, very blunt, glabrous; flowers sessile.  

D. G. Native of the Cape of Good Hope. Leaves a line long. Flowers red.

**Sessile-flowered Fig-marigold.** Shrub 1 foot.

248 M. *subglobosum* (Haw. syn. 273. rev. 185.) branches numerous, filiform, divaricate, rather decumbent; leaves expanded, rather papillose, very short, cylindrical subgloboso.  


**Subglobose-flowered Fig-marigold.** Fl. July, Oct. Clt. 1795.  

Shrub 1 foot.

249 M. *brevifolius* (Ait. hort. kew. 2. p. 188.) stems erect; branches diffuse, filiform, numerous; leaves cylindrical, very blunt, spreading, papillose.  


**Short-leaved Fig-marigold.** Fl. July, Oct. Clt. 1777. Sh. 1 ft.

250 M. *parvifolium* (Haw. rev. 184.) but not of Lam.) stem erect; branches rather crowded, filiform, rough, hard; leaves grain-formed, expanded, bluntly triquetrous, rather splitting from papillose.  

D. G. Native of the Cape of Good Hope. Corolla expanding in the day time, deep purple, nearly like that of *M. hircinum*, but one-half smaller. Stigmas 5, erect, green.

**Small-leaved Fig-marigold.** Fl. Aug. Clt. 1820. Sh. 2 to 1 ft.

251 M. *oralrum* (Haw. rev. 183.) but not of Wild.) stem erect; branches filiform, hard, roughish, erectish; leaves distant, cylindrical, obtuse, small, glancing from papillose, with one of the pair deflexed, and the other opposite it ascending.  


**Oblique-leaved Fig-marigold.** Fl. Aug. Clt. 1819. Sh. 1 ft.

**Flowers copper-coloured or yellow.**

252 M. *flavum* (Haw. rev. 183.) stem erect; branches very slender, scabrous from dots; leaves nearly terete, rather attenuated at both ends, glancing from papillose, erectly incurved or variously bent; lobes of calyx obtuse, nearly equal.  

D. G. Native of the Cape of Good Hope. Corolla expanded half an inch broad, of a golden yellow-colour, rather reddish on the outside; filaments white.

**Yellow-flowered Fig-marigold.** Fl. Aug. Clt. 1820. Shrub 1 1/2 to 1 foot.

253 M. *means* (Lin. spec. 606.) stem erect; branches scabrous; leaves semi-cylindrical, bluntish, rather recurved, glancing from papillose; lobes of calyx and petals acutish.  


**Glittering Fig-marigold.** Fl. May, Aug. Clt. 1704. Sh. 1 1/2 ft.

254 M. *maculatum* (Haw. syn. 271. rev. 182.) stems erect, covered with rough spots; leaves expanded, remote, obtuse, semi-cylindrical, and rather compressed, papillose.  


**Spotted-stamened Fig-marigold.** Clt. 1732. Shrub 1 1/2 foot.

255 M. *speciosum* (Haw. obs. 367. misc. 98. syn. 270. rev. VOL. III. 182.) stem erect, with scabrous branches; leaves semi-cylindrical, subulate, acutish, incurved, glittering a little from papillose; lobes of calyx and petals obtuse; corolla rather funnel-shaped.  

D. G. Native of the Cape of Good Hope. Corolla large, deep scarlet, with a green base, less than that of *M. micans*, expanding in the height of the sun.

**Elegant Fig-marigold.** Fl. May, Oct. Clt. 1793. Shrub 1 1/2 ft.

§ 47. **Trichotoma** (the flowers are disposed by threes, or in a trichotomous manner). *Haw. rev. 178.* Tuberous. Salsa-Dyck, obs. 25. Erect branched subshrubs. Leaves usually nearly cylindrical, and glancing in the sun from papillose. Calyx 5-cleft. Flowers small, disposed by threes, of various colours, but usually of a yellowish coppery-colour.—An artificial section.

256 M. *tuberosum* (Lin. spec. 693.) stem erect, branched; leaves rather triquetrous, compressed, beset with minute papillose, recurved at the apex; flowers trichotomous; root tuberos, hard.  


**Tuberous-rooted Fig-marigold.** Fl. June, Oct. Clt. 1714. Shrub 2 to 3 feet.

257 M. *megatherum*; root large, tuberous; stem erect, branched; leaves recurvly hooked; branches erect, thong-formed, flexible.  

D. G. Native of the Cape of Good Hope. Very like *M. tuberosum*, but differs from it in the principal stem being more equal in thickness; and in the flowers being more numerous and white. *M. macrorhizum*, Haw. in phil. mag. Nov. 1826. p. 332. but not of D. C.

**Large-rooted Fig-marigold.** Fl. May, Aug. Clt. 1824. Shrub 2 feet.

258 M. *testaceum* (Haw. suppl. 97. rev. 178.) stem shrubby, erect; leaves semi-terete, rather triquetrous, glaucenose; flowers disposed in trichotomous umbels.  

D. G. Native of the Cape of Good Hope. Stems 2-3 feet high. Flowers small, of a coppery-colour, pedunculate. Petals in one series. Both the fertile and sterile stamens are snow white, collected into a cone.

**Testaceus-flowered Fig-marigold.** Fl. Aug. Sept. Clt. 1820. Shrub 2 to 3 feet.

259 M. *trichotomum* (Thunb. fl. cap. 419.) stem straight; branches divaricate; leaves connate, trigonal, obtuse, flowers terminal, sessile; calyx 4-cleft.  

D. G. Native of the Cape of Good Hope. It differs from *M. geniculiflorum* in the leaves being connate, and without papillose, and in the flowers being red. Stigmas 4, purple, short.

**Trichotomous Fig-marigold.** Shrub 2 to 3 feet.

260 M. *sulpinanium* (Haw. in phil. mag. Dec. 1824. p. 427.) stem firm, branched, erect; leaves expanded, compressed, trigonal, rather canescent, soft, recurved, and mucronulate at the apex; flowers terminal, disposed by threes; lobes of calyx 5, unequal.  

D. G. Native of the Cape of Good Hope. Flowers middle-sized, snow white, expanding before meridian. This species is most nearly allied to *M. trichotomum*.

**Rather-hoary Fig-marigold.** Fl. Aug. Sept. Clt. 1820. Sh. 2 to 3 feet.

261 M. *decussatum* (Thunb. fl. cap. 414.) stem shrubby, trichotomous; branches erect; leaves connate, linear-semiterete, rather papillose; flowers pedunculate, solitary.  

D. G. Native of the Cape of Good Hope. Flowers spreading, snow white. Calyx 5-cleft.

**Decussate-leaved Fig-marigold.** Shrub 2 to 3 feet.

262 M. *brachiatum* (Ait. hort. kew. 2. p. 119.) stem much branched; branches trichotomous, papillose; leaves cylindrical, U...
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265. **M. spinuliferum** (Haw. obs. 206. and 443. misc. 57. syn. 252. rev. 176.) caudex and branches erect and thickened; leaves linear, channelled, and are, as well as the branches, papulous; old leaves permanent, long, hard, and spine-like; flowers usually solitary; peduncles strong, subclavate. \( \gamma \). D. G. Native of the Cape of Good Hope. Petals pale yellow or straw-coloured. Stigmas 5, erect.

266. **M. caulicola** (Haw. obs. 218. misc. 57. syn. 253. rev. 177.) stems procumbently prostrate, filiform; leaves linear-semiterete, covered with shining papulose. \( \gamma \). D. G. Native of the Cape of Good Hope. Corolla pale rose-coloured. Old stems half a foot high.

267. **M. viridiflorum** (Ait. hort. kew. 2. p, 196.) caudex thickened; branches diffuse, knotted; leaves semiterete, beset with papulose hairs; calyx hairy, pedunculate. \( \gamma \). D. G. Native of the Cape of Good Hope. Curt. bot. mag. t. 326. D. C. pl. grass. t. 159. Jacq. fragm. t. 52. f. 2. Petals very narrow, greenish. Stigmas 5, joined in one body.

268. **M. gróssum** (Haw. misc. p, 57. syn. 252. rev. 176.) caudex thickened; branches effusely decumbent; leaves linear, nearly terete, obtuse, attenuated at both ends, papulose. \( \gamma \). D. G. Native of the Cape of Good Hope. \( \gamma \). D. G. Native of the Cape of Good Hope. M. gróssum, M. cárnée, and M. aggregátum, Haw. obs. 205, 206. and 410. Corolla middle-sized, pale, at length becoming of a reddish straw colour.

270. **M. ni'tidum** (Haw. obs. 412. misc. 57. syn. 243. rev. 177.) stem erect; branches slender, efluse, knotted; leaves semiterete, beset with glistering papulose; flowers terminal, usually by threes. \( \gamma \). D. G. Native of the Cape of Good Hope. Flowers yellow. Salm-Dyck ex Spreng. nov. prov. 37. M. brachiatíum, D. C. pl. grass. t. 129. M. prínsósum, Thunb. fl. cap. 425. ex Salm-Dyck and Spreng. but according to Haworth this species differs in the stem being decumbent, and in the branches being bent.

271. **M. noctíflorum** (Lin. spec. 689.) stems suffruticoso; branches erect, with white bark; leaves rather remote, obsolescently semi-serrulato, glaucous; peduncles binate. \( \gamma \). D. G. Native of the Cape of Good Hope. Haw. rev. 179. Lodd. bot. cab. 495.


273. **M. clávatum** (Jacq. hort. schenbnr. t. 108.) stem erect, sparingly branched; leaves nearly terete, remote, horizontal; peduncles clavate, aggregatum. \( \gamma \). D. G. Native of the Cape of Good Hope. M. delófíatum, Haw. misc. 83. rev. 181. Flowers white.


275. **M. simplex** (Jacq. fragm. t. 52. f. 2.) stems erect, sparingly branched; leaves nearly terete, remote, horizontal; peduncles clavate, aggregatum. \( \gamma \). D. G. Native of the Cape of Good Hope. M. delófíatum, Haw. misc. 83. rev. 181. Flowers white.


277. **M. clávatum** (Jacq. hort. schenbnr. t. 108.) stem erect, sparingly branched; leaves nearly terete, remote, horizontal; peduncles clavate, aggregatum. \( \gamma \). D. G. Native of the Cape of Good Hope. M. delófíatum, Haw. misc. 83. rev. 181. Flowers white.


§ 51. Splendencia (from splendens, shining; in reference to the leaves, which are covered with glittering papule, which shine in the sun). D. C. prod. 3. p. 445.—Digitiflora and Crassulina, Haw. rev. 170. and 172. —Teretsicia albidiflora, Salm-Dyck. phys. p. 23. Stems suffruticoso, branched, erect. Leaves opposite, distinct, somewhat cylindrical, when young, farrowed above, beset with papille more or less, which glitter in the sun. Flowers middle-sized, solitary, rarely by threes, white, expanding before meridian. Calyx generally 5-lobed, rarely 4 or 6-lobed, usually leaf-formed. Stigmas as many as there are calyceine lobes.

275 M. crassulina (D. C. prod. 3. p. 445.) stem suffruticoso, erect, decumbent; branches numerous, rather effuse; leaves crowded, thick, linear-lanceolate, channelled, almost without papule, green; flowers solitary; 3 of the segments of calyx membranous at the base, and 2 larger than the rest. h. D. G. Native of the Cape of Good Hope. M. crassuloides, Haw. rev. 170. Flowers expanding before meridian; petals 4 lines long, white, but at length becoming pale rose-coloured. Stigmas 5, which after fecondation are very conspicuous above the anthers.


276 M. inscrutum (Haw. suppl. 96. rev. 171.) stem suffruticoso, branched, bushy; leaves crowded, rather papule, evenly imbricating, semi-terete, firm, almost subulate; flowers by threes; peduncles clavate; lobes of calyx finger-shaped, acute. h. D. G. Native of the Cape of Good Hope. Plant half a foot high, pale green. Corolla snow white. Stigmas 5, ramentaceous, equal in length to the anthers.


278 M. sulcatum (Haw. rev. p. 173.) stem shrubby, erect; leaves crowded, linear-subulate, semi-terete, channelled, pale-green, adult ones expanded, semi-terete; lobes of calyx leaf-formed, acute. h. D. G. Native of the Cape of Good Hope. Flowers Stigmas 5, erect, not exceeding the stamens. Perhaps only a variety of M. splendens.


279 M. acuminate (Haw. in phil. mag. 1824. vol. 64. p. 426.) stem and branches erect; leaves crowded, semi-terete, acuminated, green; lobes of calyx 5, 2 of which are much more prolonged than the other 3. h. D. G. Native of the Cape of Good Hope. Allied to M. sulcatum, but differs from all the species of this section in the lobes of the calyx being very unequal. Corolla white, expanding before meridian.


280 M. albicaule (Haw. in phil. mag. Nov. 1826. p. 331.) stem and branches erect, slender, and whitish; leaves subulate, green, semi-terete, a little recurved, and mucronulated at the apex. h. D. G. Native of the Cape of Good Hope. Flowers white. Like M. acuminatum in habit, but three times smaller.


281 M. flexuosa (Haw. misc. p. 61. syn. 257. rev. 173.) stem suffruticoso, and is, as well as the branches, flexuous, slender, and shining; leaves crowded, flexuously incurved, very green, semi-terete; lobes of calyx finger-shaped. h. D. G. Native of the Cape of Good Hope. Flowers white, reddish on the outside. Stigmas 4-5.


282 M. fastigiata (Haw. rev. 173. but not of Thunb.) stems slender, erect at first, but at length becoming decumbent; leaves crowded, flexuously reflexed, subulate, semi-terete, glauccecent; lobes of calyx equal, 3 of which are membranous on both sides. h. D. G. Native of the Cape of Good Hope. Corolla of a dirty fulvous-colour on the outside, white and paler on the inside. fastigiata, Haw. misc. p. 60. exclusive of the synonyme of Brall.

Var. β, reflexum (Haw. rev. p. 173.) lobes of calyx unequal; stem erect. M. reflexum, Haw. misc. 60. var. a.


283 M. umbelliflorum (Jacq. ex Willd. enum. 534.) stem leaves; erect leaves, distinct, nearly terete, papulose; branchlets 1-flowered. h. D. G. Native of the Cape of Good Hope. The rest unknown. Perhaps only a variety of M. fastigiata, Haw. or a proper species, ex Haw. rev. 174.


284 M. longistylus (D. C. pl. grass. t. 147.) stem suffruticoso; branches elongated; leaves opposite, distinct: when young linear-filiform, but at length becoming a little keeled, acute, and minutely papulose; peduncles 1-flowered; calyx 5-cleft, with 2 or 3 of the lobes having hyaline margins; stigmas 5, exceeding the stamens. h. D. G. Native of the Cape of Good Hope. M. pallens, Jacq. hort. schoenbr. 3. t. 279. but not of Ait. M. pallescens β, Haw. rev. p. 174. Flowers white, or somewhat rose-coloured, half an inch in diameter.


§ 52. Juncus (from juncus, like a bull-rush, slender; stems).


285 M. junceum (Haw. misc. 175. syn. 255. rev. 59.) stem shrubby, much branched; branches articulated, filiform; leaves subulate, semi-terete, acute, remote; flowers terminal, dichotomous; lobes of calyx 4, very unequal. h. D. G. Native of the Cape of Good Hope. Corolla small; petals reddish, but whitish at the base. Stigmas 4, erect, a little longer than the filaments. M. aphyllum, Hort. M. articulatum, Thunb. fl. cap. 415. ?


286 M. granuliculce (Haw. in phil. mag. 1824. vol. 64. p. 424.) stem very slender, suffruticoso; branches terete, dotted from numerous grains; leaves very narrow, obtuse, glauccecent, semi-terete, longer than the internodes. h. D. G. Native of the Cape of Good Hope. Flowers unknown.
Granular-stemmed Fig-marigold. Clt. 1820. Shrub 1½ foot. 228. M. microstomum (Haw. syn. 257. rev. 174.) stem sulfurific, slender, much branched; leaves linear, keeled, dotted, distinct; peduncles 1-flowered; calyx 4-cleft, having 2 of the lobes very long, and 2 very short. h. D. G. Native of the Cape of Good Hope. M. parviflorum, Jacq. hort. scheenbr. 3. t. 278. but not of Haw. Corolla small, snow white, shorter than the calyx. Stigmas 4, spreading.


Weak Fig-marigold. Clt. 1819. Shrub 1 foot. 289. M. karacemum (Jacq. fragm. 43. t. 52. f. 1.) root turgid; stem herbaceous; branches terete, and somewhat articulated; leaves distinct, terete, obtuse, dotted, spreading much; peduncles 1-flowered; lobes of calyx filiform; stigmas 5, spreading. h. D. G. Native of the Cape of Good Hope. Flowers snow white, 9-10 lines in diameter. Lobes of calyx nearly equal, or very unequal.

Turnip-like-rooted Fig-marigold. Pl. 1 foot. § 53. Nodiflora (from nodus, a knot, and flo, a flower; flowers rising from the knots of the stem, or axils of the leaves). D. C. prod. 3. p. 446.—Cylindrica, Haw. rev. 163. Salm-Dyck, obs. 15. Roots annual. Stems herbaceous, branched. Leaves nearly terete or linear, thick, opposite, rarely alternate, papulose. Flowers axillary, nearly sessile. Calyx 4-5-lobed, exceeding the petals, which are small and white. Stigmas 4-5.

290. M. nodiflorum (Lin. spec. 687.) stem erectish; leaves opposite and alternate, nearly terete, obtuse, ciliated at the base; flowers axillary, nearly sessile; lobes of calyx very unequal, exceeding the petals, which are small. h. D. G. Native of Egypt, Barbary, Corsica, and Naples, in sandy places by the sea side. D. C. pl. grass. t. 88. Smith, fil. geac. t. 480.—Moris. hist. sect. 5. t. 37. f. 7.—Haw. rev. 166.—Column. ecphr. 2. t. 73. This species is often confused with the two following. Perhaps the calyx is 4-cleft, as mentioned by Haworth, but in some plants which have been examined it has been found to be 5-cleft.


Var. g. album (Haw. rev. 163.) flowers white. M. lineare, Thunb. fl. cap. 411.

Wheat-leaved Fig-marigold. Pl. ¼ foot. 296. M. gramineum (Haw. misc. 55. exclusive of the syn. of Thunb.) plant almost stemless; leaves linear; scapes filiform; lobes of calyx 5, lanceolate, longer than the corolla. h. D. G. Native of Cape of Good Hope.—Petr. gaz. t. 88. f. 7. Corolla yellow. This species is not sufficiently known. Perhaps it comes nearest to M. tricolor.

Grassy-leaved Fig-marigold. Pl. ½ foot. 297. M. crinkulorum (Hout. phil. syst. 2. p. 53.) plant almost stemless; leaves radical, comate, ovate, papulose; peduncles rising from the root like scapes; calyxine lobes 5, oval, 3 of them longer than the rest. h. D. G. Native of Cape of Good Hope. Thunb. fl. cap. 411. M. spatulatum, Thunb. in Willd. spec. 2. p. 1025. Flowers white.

Hair-flowered Fig-marigold. Pl. ¼ foot. 298. M. sabulorum (Thunb. fl. cap. 422.) plant almost stemless; leaves radical, stem-clasping, oblong, flat, acutish, furrowed above; calyxine lobes 5, oblong. h. D. G. Native of the Cape of Good Hope. Flowers yellow.

Gracilly Fig-marigold. Pl. ¼ foot. 299. M. claviforme (D. C. prod. 3. p. 448.) plant almost stemless; leaves clavate, obtuse; flowers terminal. h. D. G. Native of the Cape of Good Hope.—Petr. gaz. t. 88. f. 7. M. clavatum, Haw. obs. 471. spec. 56. rev. 164. but not of Jacq. Flowers golden yellow. Species hardly known.

Club-formed-leaved Fig-marigold. Pl. ⅛ foot. § 55. Platypelphilla (from τόπος, breadth, and φυλλον, phyllon, a leaf; leaves broad). Haw. rev. p. 156. Roots annual or biennial. Stems herbaceous. Leaves flat, variable in form, and are papulose, as well as the branches. Flowers of various colours. Calyx 5-cleft. Stigmas 5.
300 M. crassilinum (Lin. spec. 688.) plant diffusely procumbent, herbaceous, covered with large glittering papule on every part, which makes the plant appear as if covered with ice; leaves ovate, alternate, stem-clasping, undulated; flowers axillary, almost sessile. O. H. Native of the Cape of Good Hope, Canary Islands; and of Greece, about Athens, in the sand by the sea side. Smith, fl. grece. t. 481.—Dill. elth. f. 24. Bradl. succ. t. 48. D. C. pl. grass. t. 128. Haw. misc. 43. Flowers white. There are two varieties of this plant; one a biennial, which is said to be the true M. crassilinum; and the other an annual, which is the common ice-plant of the garden, which is called by Haw. M. glaciolum. The whole plant is covered with glittering white papule, that shine in the sun, whence it is called ice-plant; others name it the diamond-plant.

**Crystalline Fig-marigold or Ice-plant.** Fl. May, Aug. Clt. 1775. Pl. procumbent.

301 M. crispub (Haw. misc. 44. rev. 157.) leaves alternate, ovate, petiolate, undulated; petals minute. O. H. Native of the Cape of Good Hope.—Petiv. gaz. t. 88. f. 5. M. crispa-tum, Haw. obs. 470. Flowers reddish. This species is hardly known.

**Curled-leaved Fig-marigold.** Pl. pr.

302 M. pinnafridum (Lin. fil. suppl. 260.) stems diffuse; leaves opposite, oblong, bluntly pinnafridum, papulous; petals shorter than the calyx. O. H. Native of the Cape of Good Hope, and also said to be a native of Chili. Curt. bot. mag. t. 67. D. C. pl. grass. t. 142. Haw. obs. 112. misc. 44. syn. 244. rev. 157. Stems reddish, papulous. Petals small, yellow in one series. Stigmas 5, ascending. Flowers small in the forks of the branches, pedunculate.

**Pinnafrid-leaved Fig-marigold.** Fl. May, Oct. Clt. 1774. Pl. pr.

303 M. sessiliflorum (Ait. hort. rew. 2. p. 193.) branches divaricate; leaves flat, spatulate, and are, as well as the stems, beset with papule; flowers sessile. O. H. Native of the Cape of Good Hope. Flowers yellow. Haw. syn. p. 247. Var. β, album (Haw. rev. 158.) flowers white; leaves ovate, petiolate; upper ones alternate; flowers paniced, small. D. G. Perhaps a proper species, but is not sufficiently known.

**Sessile-flowered Fig-marigold.** Fl. July. Clt. 1774. Pl. pr.


Var. β, roséum (Haw. rev. 159.) flowers reddish; leaves lanceolate-spatulate.

**Lanceolate-leaved Fig-marigold.** Fl. May, Aug. Clt. 1795. Pl. dec.


**Lance-leaved Fig-marigold.** Pl. f. foot.

306 M. papuliferum (D. C. prod. 3. p. 448.) stem very short; branches almost radical, somewhat fastigate, gradually thickened, and are as well as the leaves and calyces beset with papule; leaves conuate, ovate; flowers terminal, sessile; 1-3 together; calyx 5-cleft. O. H. Native of the Cape of Good Hope, on hills in very dry places. M. fastigiatum, Thunb. fl. cap. 413. but not of Haw. Flowers white. Lobes of calyx purple. This species differs from M. rectum of Haw. in being annual, not shrubby.

**Papulle-bearing Fig-marigold.** Pl. f. to f. foot.


308 M. clandestinum (Haw. in phil. mag. aug. 1826. p. 120.) branches procumbent, papulous; leaves acutely ovate, petiolate; flowers usually terminal, solitary or by threes, on a terete, clavate peduncle; petals very small. D. G. Native of the Cape of Good Hope, Hidden-flowered Fig-marigold. Fl. May, Aug. Clt. 1822. Pl. pr.

309 M. puberulum (Haw. in phil. mag. sept. 1821. p. 419.) stems branched, procumbent, papulous; floriferous branches and margins of leaves pubescent; leaves opposite or alternate, obtuse-spatulate, channelled, keeled; peduncles subhyaline. O. D. G. Native of the Cape of Good Hope. Very like M. papulosum. Flowers white.


310 M. angulatum (Thunb. fl. cap. 426.) stem herbaceous, decumbent, angular, branched; leaves opposite, ovate, sessile, papulous; calyx 5-cleft, angular. O. D. G. Native of the Cape of Good Hope. Flowers yellow, as in M. papulosum, but the stems are angular, not terete. The stems are angular, however, in M. Aitoni, but the flowers are pale red, not yellow.

**Angular-stemmed Fig-marigold.** Pl. pr.

311 M. Aitoni (Jacq. hort. vind. t. 7.) branches decumbent, angular; leaves opposite or alternate, ovate-spatulate, papulous; pedicels short; calyces angular. D. G. Native of the Cape of Good Hope. Haw. misc. 48. rev. 158. Flowers expanding in the evening, pale reddish, about the size of those of M. cordifolium. Lobes of calyx very unequal. Stigmas 5, erect, recurved at the apex.

**Aiton’s Fig-marigold.** Fl. June, Oct. Clt. 1774. Pl. pr.


**Heart-leaved Fig-marigold.** Fl. May, Sept. Clt. 1774. Pl. diffuse.

§ 57. Expansa (from expansus, expanded; stems). D. C. prod. 3. p. 449.—Planifolia †, † Haw. rev. 167. Stems suffrutescent, diffuse, or procumbent, terete. Leaves flat, opposite, almost without papule, stem-clasping, a little keeled. Flowers white or pale yellow, rarely pale red. Tube of calyx somewhat pear-shaped; lobes 4-5, unequal. Stigmas 4-5.

314. M. varùns (Haw. misc. p. 51. syn. 249. rev. 168.) branches prostrate; leaves opposite, lanceolate, acuminate, keeled, hence they are bluntly triquetrous and channelled; pedicelles very thick. ʁ. D. G. Native of the Cape of Good Hope.—Petiv. gaz. t. 78. t. 10. The whole plant is beset with pubescent. Calyx 4-5-cleft. Corolla white on the outside and yellow on the inside; but according to Haworth it is whitish, and according to Petiver yellowish. Stigmas 5, short.


316. M. concavum (Haw. rev. 168.) stem procumbent; leaves concave, ovate-lanceolate, alternate, thick; flowers terminal, solitary. ʁ. D. G. Native of the Cape of Good Hope.—Bur. afr. dec. 3. t. 26. f. 1. Flowers yellowish. This is a very doubtful species.

Concave-leaved Fig-marigold. Shrub pr.

318. M. lóratum (Haw. rev. 168.) stems diffuse; leaves lorate, canaliculately-inked, obtuse, very glaucous, convex beneath; lobes of calyx oblong, attenuate, obtuse. ʁ. D. G. Native of the Cape of Good Hope. Flowers white. Perhaps only a variety of M. pallens.

319. M. crassicùle (Haw. in phil. mag. 1824. p. 425.) caudex very short and thick; branches expanded; leaves crowded, flat, lorate, acuminate, green, glabrous, a little incurved; peduncles furnished with 4-5 bracteas; lobes of calyx 5, one of which is smaller than the rest. ʁ. D. G. Native of the Cape of Good Hope. Flowers pale yellow, expanding before meridian. Stigmas very short.

Thick-stemmed Fig-marigold. Fl. May, July. Clt. 1815. Pl. 3 foot.
320. M. rëlláxum (Wilk. enum. suppl. p. 36.) stems decumbent, terete, flexuous; leaves linear-lanceolate, obtuse, of a vivid glaucous colour, channelled, dotted from papule, costately keeled; lobes of calyx 5, foliaceous, one of which is very small. ʁ. D. G. Native of the Cape of Good Hope. Spreng. nov. prov. 28. Haw. rev. 169. Flowers purple (ex Wilk.), rose-coloured (ex Spreng.), reddish or nearly scarlet (ex Haw.).

321. M. anatómìcum (Haw. misc. 50. syn. 249. rev. 169.) stems filiform, procumbent; leaves opposite, lanceolate-elliptic, full of crystalline papule, when dead the nerve alone remains permanent. ʁ. D. G. Native of the Cape of Good Hope.

Var. β, frígile (Haw. rev. 169.) leaves large, concave, greener than the species.


Ovate-leaved Fig-marigold. Shrub dec.
323. M. humiìfìsum (Ait. hort. kew. 2. p. 179.) stems suffruticose, trailing; leaves stem-clasping, spatulate, keeled, scabrous from conical papule; petals very minute. ʁ. D. G. Native of the Cape of Good Hope. Corolla white. The rest unknown.


324. M. trípólium (Lin. spec. 690.) stems herbaceous, loose, simple; radial leaves flat, crowded, ramal ones alternate, lanceolate, dotless, almost destitute of papule; flowers pedunculate; calyx pentagonal, 5-cleft. ʁ. D. G. Native of the Cape of Good Hope.—Dill. elth. f. 220.—Pluk. mant. 329. f. 4. Haw. obs. 122. misc. 49. syn. 247. rev. 167. Flowers middle-sized, white. There is no ally to this species, according to Haworth.


Var. β, glabrum (Haw. rev. p. 160.) plant more glabrous and naked; upper leaves a little ciliated; petals longer than the calyx. ʁ. D. G. Andr. bot. rep. t. 57. Haw. misc. 44. but not of Ait. Perhaps a proper species.


327. M. caléndulae'ceum (Haw. rev. 161. but not of his misc.) leaves linear-lanceolate, hardly spatulate, ciliated; peduncles scabrous; petals about equal in length to the loripetely-linear, thick, ciliated, calyceine lobes; ovarium sparingly pubescent. ʁ. D. G. Native of the Cape of Good Hope. Stem much branched. Hairs on the ovary or tube of the calyx white and short. Flowers yellow. The rest unknown.

328. M. fláccidum (Jacq. hort. vind. t. 475.) leaves lanceolate, acute, flat, glabrous, quite entire; peduncles 1-flowered, erectish, glabrous, very long. ʁ. D. G. Native of the Cape


† Species not sufficiently known.

332 M. humile (Haw. misc. 80. rev. 122.) stems prostrate; leaves triquetrous, subulate; calyx 4-cleft. D. G. Native of the Cape of Good Hope. Leaves opposite, or probably ternate.

Var. a, ribrum (Haw. l.c.) flowers red.—Petiv. gaz. t. 88. f. 8. Haw. obs. 471.

Var. b, lateum (Haw. l.c.) flowers yellow.—Petiv. gaz. t. 88. f. 8. Humble Fig-marginal. Prostrate. 333 M. argenteum (Burch. voy. 1. p. 343. cat. geogr. 2004.). D. G. Native of the Cape of Good Hope. Allied to M. pareficiatum. Shrub 1-2 feet high, branched, with the trunk for the most part simple. Gymes 8-times dichotomous. Flowers minute, of a testaceous colour.

Tree-formed Fig-marginal. Shrub 1 to 2 feet.


Field Fig-marginal. Shrub 1½ foot.

335 M. laurifolium (Haw. obs. 470. misc. 49. rev. 157.) root fusiform; stem very flexuous; leaves opposite, cuneately obovate. D. G. Native of the Cape of Good Hope. — Petiv. gaz. 88. f. 4. Anthers and petals purple. Perhaps a species of Othôna.

336 M. ? ciliatum (Ait. hort. kew. 2. p. 179.) leaves opposite, connate, semi-terete; stipulas membranous, reflexed, jagged, in the form of cilia. D. G. Native of the Cape of Good Hope. Corolla white. The rest unknown. Stipulas in all other species of Mesembryanthemum are wanting, and it is probably a species of Arenaria.

Ciliated-stipulated Fig-marginal. Clt. 1774. Pl. ½ foot.

337 M. coriaria (Burch. cat. geogr. 2487. ex trav. 1. p. 243.). D. S. Native of the Cape of Good Hope, where it is used in tanning leather. Said to be allied to M. uncinitum. Hide Fig-marginal. Shrub

338 M. ? villosum (Lin. spec. 695.) stem subhairy, thickened at the base; branches prostrate; leaves connate, linear, semi-terete, channelled, pubescent; peduncles trichotonous; flowers petalous. D. G. Native of the Cape of Good Hope. Haw. obs. 222. and 441. misc. 58. syn. 254. rev. 125. Calyx 5-lobed, purple inside. Capsule fleshy, 5-6-celled. Perhaps a species of Aszôn, Tetragonia, or Sesuvium, but the description is not sufficient to decide this point.

Villosus Fig-marginal. Shrub prostrate.

339 M. graminifolium (Haw. misc. 82. syn. 263. rev. 149.) stems expanded, long, suffruticos; leaves distinct, rather triquetrous, ovate grain-formed; stamens collected. D. G. Native of the Cape of Good Hope. Bradl. succ. t. 20. Stems 3 inches high. Leaves 3 lines long. Flowers yellow, yellow. This species is entirely unknown at the present day, having been only known to Bradley. According to Haworth's opinion, it comes in section Cymbopinum.


Cult. This is a vast genus of what are called succulent plants, that is, fleshy-leaved plants. The shrubby kinds should be grown in pots, in a very sandy or gravelly soil; they should be kept almost quite dry, while in a dormant state, but when growing freely and in the flowering season, they require a considerable supply of water. The poorer the soil is, the more dwarf the plants will grow, and bear flowers more abundantly. The shelves in a greenhouse are a good place to preserve them through the winter, however, a good dry frame will answer the purpose equally well, if not better, with a covering of mats in frosty weather. Cuttings of all of them strike root readily, if planted in pots of the same kind of earth recommended for the plants, and kept dry till they begin to grow, when they may have a little water given to them; and under this treatment they will root very soon. There are also several annual and biennial kinds, most of them handsome and curious. The seeds of these should be sown in pots early in spring, and raised in a frame, hot-bed, or greenhouse; and when the plants are of sufficient size, plant them singly in small pots, and set them in the greenhouse, until the warm weather commences, when they may be set out of doors along with the shrubby kinds, where they will flower and seed freely, if the summer proves fine. The same soil and treatment recommended for the shrubby kinds will also suit these well. The ice-plant, M. crassifolium, and also M. pinatifidum do well if planted out on rockwork or among stones, where they will make a very curious appearance.


Lin. syst. Icosindria, Tri-Ocotoporia. Calyx 4-cleft, rarely 3-cleft, with the tube adhering to the ovaryum, and 4-5-horned; lobes coloured on the inside. Petals wanting. Stamens variable in number. Ovarium 3-8-celled. Styles 3-8, very short. Nut bony, winged, or horned, indehiscent, 3-8-celled inside. Seeds solitary in the cells.—Herbs or sub-shrubs. Leaves alternate, flat, fleshy, undivided, usually quite entire. Flowers axillary, pedicellate, or sessile.


1 T. expansa (Ait. hort. kew. 2. p. 178.) herbaceous leaves petiolate, ovate-rhomboid; flowers sessile; fruit 4-horned, 6-8-seeded. H. Native of New Zealand and Japan, also of
Chili, about Concepcion, and Valparaíso. Murr. comm. goett. 1783. t. 5. Seop. inst. t. 14. D. C. pl. gr. t. 114. T. cornuta, Gaertn. fruct. 2. p. 179. f. 3. T. Japonica, Thumb. jap. 268. T. halimifolia, Forst. prod. p. 223. Roth, abb. t. 8. Demidovia tetragoniae. Pall. Hort. dem. t. 1. Stamos 4-5 in each fascicle, 1 fascicle in every recess of the calyx. From all the species this differs in the cells of the pericarp being double the number of calycine lobes, not equal to them in number, as in the rest of the species. The New Zealand spinach is a spreading, rather prostrate plant, with yellow flowers, and leaves an inch and a half long. The whole plant is studded with very minute crystalline dots. It is a native of New Zealand, by the sides of woods, in bushy sandy places, and though not used by the inhabitants, yet, being considered by the naturalist who accompanied Cook, as of the same nature as the Chenopodium, it was served to the sailors boiled every day at breakfast and dinner. It was introduced to this country by Sir Joseph Banks in 1772, and treated as a greenhouse plant; but it has been found to grow in the open garden as freely as the kidney-bean or nasturtium, and has been used as a spinach plant. In the Earl of Essex's family, at Cashibury, no other spinach was used during the whole summer of 1821, and it is now commonly cultivated for that purpose. It grows so fast that a few plants will suffice for a large family. There are three varieties of this species found in Chili: 1. with leaves smooth on both surfaces; 2. with leaves hoary beneath; and 3. a small gramineous variety.


2 T. crystalina (Lher. stirp. nov. 1. p. 81. t. 39.) plant herbaceous, pruinose; leaves ovate, sessile; flowers almost sessile; fruit tetragonal, incurred, 4-seeded. C. or H. F. Native of Peru and Chili, about Valparaíso and Coquimbo. D. C. pl. gr. t. 34. Calyx 3-4-lobed. Stamens 3-4 in each fascicle, 1 fascicle in each recess of the calyx.


3 T. echinata (Ait. hort. kew. 2. p. 177.) plant herbaceous; leaves petiolate, ovate-rhomboid; flowers on short pedicels; fruit echinated, 3-4-seeded. C. or H. F. Native of the Cape Good Hope. D. C. pl. gr. t. 113. Calyx 3-4-lobed. Stamens 3-4, 1 in each recess of the calyx. Calyx beset with crystalline papule.


Sect. II. TETRAGONOCARPUS (from terpa, tetra, four, γωνία, an angle, and capros, karpós, a fruit; in reference to the fruit being usually furnished with 4 wings). Comm. ex D. C. prod. 3. p. 452. Stamens disposed in 1 series at the base of the calycine lobes. Fruit usually winged.—Herbaceous, perennial, or suffruticose plants. Flowers on long pedicels.

4 T. irosutu (Lin. fil. suppl. 258.) plant herbaceous, decumbent; leaves ovate, villous, sessile; flowers 3 together, on short pedicels; fruit tetragonal, with a wing on each angle, 4-seeded. C. or H. F. Native of the Cape Good Hope. Thunb. fl. cap. 408. Stamens numerous, inserted in the middle of the calyx by bundles, as described by Thunberg. Perhaps not distinct from T. villosa, Poir. dict. 7. p. 604.

Hairy Tetragonia. PI. decumbent.

5 T. scopulaca (Lin. fil. suppl. 258.) plant herbaceous, erect; leaves petiolate, glabrous; lower ones ovate; upper ones lanceolate; flowers pedicellate, branched. C. or H. F. Native of the Cape Good Hope. Thunb. fl. cap. 409. where it is called T. racemosa. Pedicels numerous, aggregate.


6 T. herbacea (Lin. spec. 687.) plant somewhat herbaceous, rather decumbent, smooth; leaves ovate, petiolate; flowers on long pedicels; fruit 4-winged, 4-6-seeded; root strumose. C. or H. F. Native of the Cape Good Hope. Thunb. fl. cap. 409. Stamens 3-4 together, nearly an inch long. Flowers 4-cleft, but the terminal ones are 5-cleft. Root fleshy.


7 T. decumens (Mill. dict. no. 2.) plant suffruticose, decumbent, pruinose; leaves on short petioles, obovate-oblong; flowers 3-4 together on short pedicels; fruit 4-5-angled, with a wing on each angle. C. or H. F. Native of the Cape Good Hope. D. C. pl. gr. t. 23. Mill. fig. t. 263. f. 1. Flowers 4-cleft. Styles 4-5. Calyx and anthers of a pale sulphur colour.


8 T. fruticosa (Lin. spec. 687.) shrubby, erect; leaves oblong, on very short petioles; flowers 1 or 3 together, on short pedicels; fruit bluntly 3-4-angled, each angle furnished with a wing. C. or H. F. Native of the Cape Good Hope. Comm. hort. cist. 2. t. 103.—Seba, thes. 2. t. 11. f. 8. Haw. misc. p. 120.—Mill. fig. t. 2. t. 263. f. 2. Calyx green without and yellow within.


9 T. tetragonurus (Haw. misc. p. 121.) plant suffruticose, erect; leaves oblong-lanceolate, nearly sessile; flowers pedicellate, racemose; fruit furnished with large wings, and other 4 alternate small ones. C. or H. F. Native of the Cape Good Hope. Thunb. fl. cap. 403. Plak. amath. t. 220. Nut 4-seeded.


10 T. lineata (Haw. rev. p. 73.) plant shrubby and diffusely decumbent; leaves linear, rather revolute at the sides, engraved above by a dorsal line; flowers terminal, racemose. C. or H. F. Native of the Cape Good Hope. Leaves greenish. Linear-leaved Tetragonia. Fl. Sept. Cl. 1819. Sh. dec.

11 T. obovata (Haw. rev. p. 73.) plant suffruticose, decumbent, pruinose; leaves obovate or oval; petioles winged, semiclasp, somewhat decurrent. C. or H. F. Native of the Cape Good Hope. Leaves unknown. Very like T. decumbens, but one half larger.

Obovate-leaved Tetragonia. Cl. 1821. Shrub dec.

Cult. The same culture, propagation, and treatment as that recommended for Mesembryanthemum will suit the species of Tetragonia. The T. expansa, when wanted for spinach, may be planted out in the open ground, about April or May.

III. SESUVIUM (a name not explained by the author). Lin. gen. 624. Lam. ill. t. 434. D. C. prod. 3. p. 453.

LIN. SYS. Icoadendra, Tri-Pentagynia. Calyx 5-parted, permanent; lobes coloured on the inside. Petals wanting. Stamens 15-30, inserted at the top of the calycine tube, which is short. Ovarium distinct, sessile. Style wanting. Stigmas 3-5. Capsule 3, rarely 4-5-celled, circumscissed, having the placental axis permanent. Seeds numerous. Embryo hooked. Smooth fleshy herbs, inhabitants of the sea-side; with opposite, quite entire, veinless leaves; and axillary, solitary, alternate flowers, which are either sessile or on short pedicels. Calyx purplish inside.


Var. b, sessile; flowers nearly sessile. S. sessile, Pers. ench.
2. p. 39. D. C. pl. grass. t. 9. The plant is very succulent and full of neutral alkaline salt, which may be easily extracted, and would probably answer all the purposes for which the salts of the kali are now used.


2 S. longifolium (Willd. enum. p. 521.) leaves linear-spatulate; joints of stem equal; flowers pedicellate. 2. D. S. Native of South America, by the sea-side. S. Portulacastrum, H. B. et Kunth, nov. gener. 6. p. 86. from Peru and Cuman. Stanmus 70-75 (ex Kunth, l. c.). Leaves nearly 2 inches long with the pedioles.


3 S. revolutifolium (Ort. dec. p. 19.) leaves ovate-oblong, with revolute margins; flowers sessile. 2. D. G. Native of Cuba, by the sea-side. S. Portulacastrum β, Sims, bot. mag. t. 1701. Stanmus very numerous. Stigmas 5-6. Leaves rather glaucous, not deep green, as in S. Portulacastrum.


4 S. repens (Willd. enum. p. 521.) leaves spatulate-lanceolate; joints of stem rooting, filiform; flowers pedicellate. 2. D. S. Native of the East Indies.—Rumph. amb. 5. p. 165. t. 72. f. 1.


5 S. microphyllum (Willd. l. c.) leaves roundish or lanceolate; stems trailing, having equal joints; flowers pedicellate. 2. D. S. Native about the Havannah, by the sea-side. Humb. et Bonp. S. spatulatum, H. B. et Kunth, nov. gener. 6. p. 97. Leaves 5 lines long with the pedioles. Stanmus 30, Stigmas 5.

Small-leaved Sesuvium. Pl. creeping.

6 S. parvifolium (D. C. prod. 3. p. 453.) leaves linear-oblong, flat; flowers sessile. 2. D. G. Native about Monte Video by the sea-side; and of Chili, near Laguna del Arbolito, on the west side of Río Saladillo. Sesuvium, Lam. ill. t. 344. f. 2. Triântema Americana, Gill. ms. ex Arn. in Check. edinb. journ. 1831. p. 324. Perhaps S. Portulacastrum β.

Flowers red, one half smaller than those of S. Portulacastrum.

Small-flowered Sesuvium. Pl. trailing.

Cult. A mixture of loam, pent, and sand will suit this genus of succulent plants; and they require but little water. Cuttings planted (after being dried a little) in the same kind of soil, root freely, in heat.

IV. AIZO'ON (from aiz, aice, always, and zoos, zoom, alive; succulent plant, which will live under most circumstances). Lin. gen. no. 629. Gaertn. fruct. 1. t. 76. Lam. ill. t. 437. D. C. prod. 3. p. 453.—Veslingia, Fabr. helmst. p. 363.—Ficoidae, Dill. Boehr.

Lin. syst. Icosándria, Pentagynia. Calyx 5-parted, coloured, and petaloid inside. Petals wanting. Stanmus about 20, inserted in the bottom of the calyx, and disposed in 3-5 bundles. Ovarium distinct, 5-angled. Stigmas 5, thick, sessile. Capsule 5-celled, opening at the apex by 5 chinks, which are disposed in a stellate manner; cells many-seeded.—Humble herbs or subshrubs. Leaves fleshy, quite entire, alternate or opposite. Flowers sessile in the axils of the leaves or forks of the stems, rarely pedicellate, greenish on the outside.

* Leaves alternate.


Veslingia Heistéri, Fabr. Calyx 5-angled, yellowish inside. Stanmus 2-4 at the fifth lobe of the calyx.


2 A. crassifolium (Lin. fil. suppl. 261.) stems herbaceous, decumbent, hairy; leaves alternate, ovate, petiolate, pubescent; flowers sessile, axillary, hairy. 2. D. G. Native of the Cape of Good Hope. Thunb. fl. cap. 410. Calyx beset with white hairs on the outside, and coloured on the inside; when dry rather rose-coloured. Limb of leaves about equal in length to the pedioles.


** Leaves opposite.

3 A. Hispánicum (Lin. spec. 700.) stems herbaceous, erect, branched; branches spreading and erect, rather papulous at the apex; leaves opposite, linear, lanceolate, glabrous, sessile; flowers solitary, somewhat pedicellate, in the forks of the branches. 2. H. Native of Spain, Calabria, and Barbary, by the sea side. D. C. pl. grass. t. 30.—Dill. elth. 1. f. 143. Aizón sessiliflorum, Moench, meth. Calyx white on the inside, and rather greenish on the outside. The plant from the Cape of Good Hope under this name is different.


4 A. Tomentosum (Lam. dict. 3. p. 418.) stem suffruticosus, tomentose, branched; leaves opposite, tomentose, linear-lanceolate, narrowed at the base, rather spatulate at the apex; flowers sessile in the forks of the stem. 2. D. G. Native of the Cape of Good Hope. A. Hispánicum, Burm. cap. prod. p. 154. Calyx yellowish inside, 5-lobed, rarely 4-lobed. Stanmus 15.

Tomentose Aizoon. Shrub 1 foot?

5 A. Stellatum (Lam. dict. 3. p. 418.) stem suffruticosus, branched, hispid at the apex; leaves opposite, linear-spatulate, hairy; flowers panicked; pedicels and calyxes hairy. 2. D. G. Native of the Cape of Good Hope. Calyx yellowish outside. Stanmus about 20.

Stellate Aizoon. Shrub 1 foot.


7 A. Sarmentosum (Lin. fil. suppl. 260.) stem suffruticosus, erectly diffuse, glabrous, branched; leaves opposite, linear-filiform, rather connate, glabrous; branches rather villous, 3-flowered at the apex, the two lateral flowers are bracteated, and spring from the sides of the middle one. 2. D. G. Native of the Cape of Good Hope. Thunb. fl. cap. 410.—Burm. afr. t. 26. f. 2. good. Mesembryanthemum hexaphyllum, Haw. rev. p. 165. ex syn. Burm. This species differs from all in the inflorescence. The peduncles and fruit of the preceding year are permanent and lateral.

Sarmentose Aizoon. Shrub sarmentose.

8 A. Paniculatum (Lin. spec. 700.) stems herbaceous, decumbent, hairy; leaves opposite, lanceolate, hairy; flowers nearly sessile on trichotomous peduncles. 2. D. G. Native of the Cape of Good Hope. Thunb. fl. cap. 410.

Panicled Aizoon. Pl. decumbent.

† Species not sufficiently known.

9 A. rigideum (Lin. fil. suppl. 261.) stem suffruticosus, decumbent; branches hoary; leaves ovate, acute, covered with glaucous tomentum; flowers sessile, alternate, secund, remote. 2. D. G. Native of the Cape of Good Hope. Thunb. fl. cap. p. 409. In the character of this species it does not say X
whether the leaves are alternate or opposite. The leaves are said to be ovate in the diagnosis, and in the description obvate.

Stiff Aizoön. Shrub decumbent.

10 A. fruticosum (Lin. fl. suppl. 1. c.) stem shrubby, erect, glabrous, stiff; leaves lancelolate, glaucous, attenuated at the base; flowers sessile. ʃ. D. G. Native of the Cape of Good Hope. Thunb. fl. cap. 410. The description does not mention whether the leaves are alternate or opposite.

Shrubby Aizoön. Shrub 1 foot.

11 A. secundum (Lin. fl. suppl. 1. c.) stem herbaceous, hairy, decumbent; leaves ovate, acute, rather petiolate, beset with silky villi; flowers sessile, secund, axillary.—Native of the Cape of Good Hope. Thunb. fl. cap. 409. Leaves a line long; in the diagnosis they are said to be ovate, but in the description obvate.

Secund-flowered Aizoön. Pl. decumbent.

Cult. This genus of succulent plants is not worth growing except in botanical gardens. The culture, treatment, and propagation recommended for the genus Mesembryanthemum will answer well for the species of Aizoön also.


Lin. syst. Icossandra, Pentagynia. Calyx 5-parted, permanent, spreading, coloured. Petals wanting. Stamens 12, inserted in the bottom of the calyx; anthers standing. Ovarium roundish. Style wanting; stigmas 5, linear. Capsules 5, conic, each containing one seed.—A prostrate shrub, with oblong, opposite, crowded leaves; and crowded lateral flowers. This genus differs from Glinus in the petals being absent in the spreading calyx, and in the capsules being 1-seeded.


African Mütus. Shrub prostrate 4 feet long.


VI. GLINUS (a name given by Theophrastus to the maple). Lin. gen. no. 610. Juss. gen. 316. Lam. ill. 413. D. C. prod. 3. p. 455.—Rólofa, Adans. fam. 2. p. 256.

Lin. syst. Dodecandra, Pentagynia. Calyx 5-parted, conniving, permanent, coloured inside, with 3 of the sepals exterior, and the other 2 interior. Petals strap-formed, 2-4-cleft at the apex, from 5 to 20 in number, shorter than the calyx. Stamens about 15. Ovarium distinct. Style very short or wanting; stigmas 5. Capsule covered by the calyx, 5-valved, 5-celled. Seeds numerous, minute, hanging by a very long involute funicle each. Embryo spiral.—Branched procumbent tomentose herbs, with alternate leaves or in unequal pairs. Flowers axillary, almost sessile. The plants have the habit of Aizoön, but the embryo is that of Cargophyllæce.


1 G. lotoides (Lin. spec. 668.) plant clothed with white wool, diffuse, herbaceous; leaves ovate, fascicled, unequal; pedicels 1-flowered, axillary. O. H. Native of Spain, Sardinia, North America, north of Africa, Archipelago, and Senegal, Egypt, Asia, &c. in inundated places; also of Chili, about Buenos Ayres. Smith, fl. græc. t. 472.—Burnl. fl. ind. t. 36. f. 1.—Barrel. icon. t. 336.—Bocc. sic. t. 11. G. lotoides and G. dictamnus, Lam. dict. 2. p. 728. ill. 413. f. 1, 2. Sepals white inside, with red margins. Pedicels aggregate.


Bristle-flowered Glinus. Shrub diffuse.

† Species not sufficiently known.

4 G. ? trianthe'moides (Roth, nov. spec. 231.) plant prostrate, glabrous; leaves ovate, wedge-shaped, rounded, mucronate; panicles loose, terete, opposite the leaves.—Native of the East Indies. This plant differs from Glinus in the petals being wanting. It is therefore perhaps a species of Mütus; but this is still doubtful because the number of the seeds are unknown. Trianthême-like Glinus. Pl. prostrate.

Cult. These plants will grow well in a mixture of sand, peat, and loam; and young cuttings of the shrubby kinds will strike root readily in the same kind of soil. The seeds of the annual species had better be reared on the hot-bed, and when the plants are of a sufficient size, they should be planted out into a warm damp situation.


Decumbent Orygia. Pl. decumbent.

Cult. A gravelly or sandy soil will suit this plant, and cuttings will root readily in the same kind of soil.

Order CXV. NITRARIA'CÆ. (this order only contains the genus Nitraria). Lindl. introd. nat. syst. p. 163.

Calyx inferior, 5-toothed, fleshy. Corolla of 5 petals, which arise from the calyx, inflexed, valvar in aestivation. Stamens 3 times the number of the petals, perigynous; anthers innate, with 2 oblique, longitudinal lines of dehiscence. Ovarium superior, 3 or more celled, with a continuous fleshy style, at the apex of which are as many stigmatic lines as there are cells in the fruit; ovula pendulous, by means of a long funicle. Fruit drupaceous, opening by 3 or 6 valves. Seeds solitary, without albumen. Embryo straight, with the radicle next the hymen.—Shrubs with deciduous, succulent, alternate leaves, which are
Nitraria.  

sometimes in fascicles. Flowers in cymes, or solitary. The affinity of Nitraria with Ficoideae is undoubtedly great, especially with Tetragnôia; but its very different embryo, and the peculiar estivation of the petals, which is much more like that of Rhônuma, remove it from that order.

I. NITRAR'IA (so named by Schreber, who first found it in Siberia, near the nitre works, with other marine plants). Lin. gen. no. 632. Lam. ill. t. 403. Gaertn. fruct. 1. t. 58. D. C. prod. 3. p. 456.

Lin. syst. Dodecândria, Monogyniâ. Character the same as that of the order.

1 N. Schône's (Lin. spec. 638.) leaves cuneate, obtuse, mucronate, quite entire. H. Native of Siberia, about the nitre works; and of the Soongarian desert, in salt fields everywhere, and about Lektwesk, as well as on the borders of the Caspian Sea. Pall. fl.Ross. 1. t. 50. f. a and b. Lam. ill. t. 405. f. 1. Flowers white, disposed in panicles. The Siberian and Caspian varieties are not different, unless in the more luxuriant growth of the Caspian kind, which is owing to its growing in a more humid situation than that of the Siberian variety.


Triâdente-leaved Nitraria. Clt. 1820. Shrub 1½ foot. 3 N. Senegálesis (Lam. ill. t. 403. f. 2. dict. 4. p. 493.) leaves obovate, obtuse, quite entire; drupes trigonal. H. S. Native of Senegal. Flowers white, in panned cymes. This species is easily distinguished from the rest by its pyramidal trinodal drupe.

Senegal Nitraria. Shrub 1 to 2 feet.

† A doubtful species.

4 N. Billârdier'ei (D. C. prod. 3. p. 456.) leaves linear, attenuated at the base, acutish, quite entire; drupes ovate, aequina. H. G. Native of New Holland. Very nearly allied to N. Schôler, Lam. ill. 380. but very different from it in the fruit being ovate conical, as well as from growing in a different part of the world.

La Billârdier's Nitraria. Shrub 1 to 2 feet.

Cult. This is a genus of singular shrubs: they thrive best in a sandy or gravelly soil, and should be occasionally refreshed with salted water, or they will not flourish; they may be increased by layers; or cuttings planted in sand, with a hand-glass over them, strike root readily. The N. Senegalensis, being a stone plant, and N. Billârdier's should be grown in pots, in order that they may be placed in their respective situations.


Calyx 5-parted (f. 31. a.), surrounded externally by imbricating bracts. Petals 5 (f. 31. b.), hypogynous. Stamens definite or indefinite (f. 31.), hypogynous, with or without a hypogynous disk; anthers peltate (f. 31. d.). Ovarium superior. Styles several (f. 31. f.); filiform or subulate. Fruit capsular (f. 31. e.), with 2 or 5 valves, and as many cells, opening in the middle of the cells. Seeds definite, villous. Embryo straight, surrounded by a small quantity of mealy albumen, with the radicle next the hypylum. Shrubs. Leaves fleshy, scale-like or small, and alternate, without stipulas. Flowers solitary. Dr. Ehrenberg suggests (Ann. sc. l. c.) that Reaumuri and Hololâch, both of which have according to him hypogynous stamens, may constitute a little group to be called Reaumuriæ. The order appears to be more nearly related to Hypericiâe than to either Ficoideæ or Nitrariaceæ, and ought perhaps to have followed that order among the Thalâmilore in vol. I. From the former it chiefly differs in its succulent habit, and definite villous seeds, agreeing with Reaumuri, at least even in the obliquity of the veins of the petals, and in the leaves being dotted. From Ficoideæ its hypogynous stamens and seeds distinguish it; from Tamariscineæ, its plurilocular ovary and distinct styles; from Nitrariacæ, its erect villous seeds, distinct styles, and hypogynous stamens. Saline matter is present in these plants in great abundance.

Synopsis of the genera.

1 Reaumuriæ. Calyx 5-parted (f. 31. a.), involucrated by crowded leaves on the outside. Filaments indefinite (f. 38.), joined at the base into 5 bundles.

2 Holola'chna. Calyx 4-5-parted. Stamens 8-10, mono-dendriphal.


Lin. syst. Polyáandria, Pentagyniâ. Calyx 5-parted (f. 31. a.), involucrated by leaves on the outside. Petals 5 (f. 31. b.), furnished with a cliated appendage on each side at the base. Ovarium distinct. Stigmas 5-6, filiform (f. 31. f.). Capsule 3-celled, 5-valved; disseminations easily separated from the valves. Seeds 2 in each cell, very villous.—Oriental shrubs, with fleshy, alternate, glaucous dotted leaves, exuding globules of a saline alkali. Flowers solitary at the tops of the branches.

1 R. vermiculâta (Lam. spec. 754.) leaves subulate, semi-terete, imbricate, crowded on the branches. H. Native of Sicily, Barbary, and Egypt, on the sea shore. Lam. ill. 489. f. 1. Desf. atl. 1. p. 481.—Lob. icon. 380. Flowers white or pale red. Habit of Chenopodium fruticosum. Hairs on the seeds rufous, and very stiff.


II. **HOLOLA'CHNA.** This genus having already been described under the order Tamaricaceae, it is only necessary here to refer to vol. II. p. 728. where all the details of the genus will be found.

**Order CXVII.** CACTÆ (this order contains the genus Cactus, and all the genera recently separated from it). D. C. 

Cult. Elegant little shrubs of easy culture; they thrive best in a mixture of sandy loam and peat; and young cuttings readily strike root under a hand-glass.

**II. Hololachna.** CACTÆ. from tubercles. Flowers very variable, showy, or minute, usually solitary, sessile, rarely in fascicles, ephemeral, expanding by night or by day. It has already been remarked, on more than one occasion in this work, that the state of that remarkable distention or increase of cellular tissue of vegetables, from which the name of succulent is derived, is no indication of natural affinity, but rather to be considered a modification of structure, which may be common to all tribes. Hence the immediate relationship of Cactae is neither with Euphorbiaceæ, nor Laurinæa, nor any other tribe of succulent plants, but with Grossulariæ, in which no tendency whatever to an increase of cellular tissue exists. Through Rhipsalis, which is said to have a central placenta, Cactæ are connected with Portulacææ, to which also the curved embryo of the section of Opuntiaceæ probably indicates an approach. De Candolle further traces an affinity between these plants and Ficiææ.

For an elaborate account of this order, see his Memoir above quoted.

The fruit is very similar in properties to those of Grossularia, some being refreshing and agreeable to the taste, others mucilaginous and insipid; they are all, however, destitute of the excessive acidity of some gooseberries and currants. The fruit of Cactus Opuntia, has the property of staining red the urine of those who eat it. The juice of Mammillaria vulgaris is remarkable for being slightly milky, and at the same time sweet and insipid.

**Synopsis of the genera.**

**Tribe I.**

Opuntiaceæ. *Ovula* and therefore the seeds, fixed to the varieties of the fruit.

1 Mammillaria. Tube of calyx adhering to the ovary; lobes 5-6, coloured, crowning the young fruit. Petals 5-6, hardly distinguishable from the calyx. Stamens disposed in many series. Stigma 5-7-cleft. Berry smooth.

2 Melocactus. Tube of calyx adhering to the ovary; lobes 5-6, petaloid, crowning the young fruit. Petals 5-6, united into a long tube with the sepals. Stamens disposed in many series. Stigma 5-rayed. Fruit smooth.

3 Echinocactus. Sepals numerous, imbricate, adhering to the ovary; outer ones in the form of an involucrum; inner ones petal-formed. Stamens numerous. Style multifid at the apex. Berry seamy from the remains of the sepals.

4 Cereus. Sepals very numerous, imbricate, adnate to the base of the ovary, united into an elongated tube; outer ones shorter and like a calyx; middle ones longer and coloured, innermost ones petal-formed. Style multifid at the apex. Berry areolate, tubercular or seamy from the remains of the sepals.

5 Ephiphyllum. Tube of calyx very long, furnished with remote scales; limb of corolla multifid, rosaceous or ringent. Branches flat.

6 Opuntia. Sepals numerous, leaf-formed, adnate to the ovary; upper ones flat and short; inner ones petal-formed, obovate and expanded, with no tube above the ovary. Stamens numerous, shorter than the petals. Stigmas numerous,
erect, thick. Berry oval, umbilicate at the apex, either tubercled or spiny.

7 *Peregrina*. Sepals leaf-formed, numerous, adnate to the ovary, and usually permanent above the fruit. Corolla rotate, almost as in *Opuntia*. Stamens numerous, much shorter than the petals. Stigmas aggregate, in a spiral manner. Berry globose or ovate.

**Tribe I.**

**Opuntia**. *Ovula*, and therefore the seeds fixed to the central axis of the fruit.

**Tribe II.**

**Rhipsalideae.** *Ovula*, and therefore the seeds fixed to the central axis of the fruit.

8 *Rhipsalis*. Tube of calyx smooth, adhering to the ovary; limb superior, 3-6-parted, short. Petals 6, oblong, inserted in the calyx. Stamens 12-18, fixed to the petals. Stigmas 3-6, spreading. Berry roundish, pellucid, crowned by the dead calyx.

**Cacteae. I. Mammillaria.**

1. *Mammillaria* (from mamma, the nipple; the plants are covered with mammae-like tubercles, spirally disposed, the mammae bearing radiating spines at the apex and deciduous in the axils). *Mammillaria* (Bojer), also known as *Cactus mammillaris*, is a genus of about 85 species of cacti from the southern United States, Mexico, and South America. *Mammillaria* species are known for their characteristic spiny, often spiny-rimmed fruits. They are commonly found in desert areas and are often associated with a variety of other succulent plants.

2. *Corona* (Haw. rev. p. 69.) plant simple, cylindrical, when young clavate; tubercles or mammae large, ovate, woolly, and spiny at the apex; spines stiff, rising from white tomentum, exterior ones white: interior ones brown. *Corona* species are characterized by their large, woolly tubercles that are often surrounded by a white tomentum. They are found in various habitats, including desert regions and rocky cliffs.

3. *Tumida* (D.C. prod. 5.) plant globose, somewhat depressed, almost as in *Opuntia*. Stamens numerous, much shorter than the petals. Stigmas aggregate, in a spiral manner. Berry globose or ovate.

4. *Cactus* (Haw. syn. 177.) D.C. prod. 3. p. 458. *Cactus* species are known for their spiny, often spiny-rimmed fruits. They are commonly found in desert areas and are often associated with a variety of other succulent plants. *Cactus* species are characterized by their large, woolly tubercles that are often surrounded by a white tomentum. They are found in various habitats, including desert regions and rocky cliffs.

5. *Flavescens* (Haw. syn. 177.) D.C. prod. 3. p. 458. *Flavescens* species are known for their spiny, often spiny-rimmed fruits. They are commonly found in desert areas and are often associated with a variety of other succulent plants. *Flavescens* species are characterized by their large, woolly tubercles that are often surrounded by a white tomentum. They are found in various habitats, including desert regions and rocky cliffs.

6. *Fulvissima* (Haw. syn. 177.) D.C. prod. 3. p. 458. *Fulvissima* species are known for their spiny, often spiny-rimmed fruits. They are commonly found in desert areas and are often associated with a variety of other succulent plants. *Fulvissima* species are characterized by their large, woolly tubercles that are often surrounded by a white tomentum. They are found in various habitats, including desert regions and rocky cliffs.

7. *Proliferus* (Haw. syn. 177.) D.C. prod. 3. p. 458. *Proliferus* species are known for their spiny, often spiny-rimmed fruits. They are commonly found in desert areas and are often associated with a variety of other succulent plants. *Proliferus* species are characterized by their large, woolly tubercles that are often surrounded by a white tomentum. They are found in various habitats, including desert regions and rocky cliffs.
and bearing spines; spines setaceous, divaricate, white, 2 of which are erect in each fascicle, and much longer than the rest, spines articulate at the apex. h. D. S. Native of Mexico, on the mountains.

Two-coloured Mammillaria. Clt.? Shrub ½ foot.

10 M. simplex (Haw. syn. 177.) plant simple, obovate; axils gibbrous; tubercles or mamme ovate, bearing stiff, straight, radiating spines at the apex. h. D. S. Native of South America, and the islands. Cact. mammillaries, Lin. spec. 666. D. C. pl. grass. t. 3. Cat. hort. monsp. 83. Plant 6-8 inches long. There are about 18 or 20 series of tubercles, wounding to the left. Spines shortish and red. Tomentum short, deciduous. Axils, when young, rather tomentose. Flowers white. Berry red.


11 M. parvimamma (Haw. suppl. 72.) plant nearly globose, spiny, with prickles, sparingly globose, ½ inch in diameter. There are about 18 or 20 series of tubercles, wounding to the left. Spines shortish and red. Tomentum short, deciduous. Axils, when young, rather tomentose. Flowers white. Berry red.

Native Plant Shrub. D. media. Fl. 10 to 12 inches long. There are about 18 or 20 series of tubercles, wounding to the left. Spines shortish and red. Tomentum short, deciduous. Axils, when young, rather tomentose. Flowers white. Berry red.


11 M. parviflora (Haw. suppl. 72.) plant nearly globose, spiny, with prickles, sparingly globose, ½ inch in diameter. There are about 18 or 20 series of tubercles, wounding to the left. Spines shortish and red. Tomentum short, deciduous. Axils, when young, rather tomentose. Flowers white. Berry red.

Native Plant Shrub. D. media. Fl. 10 to 12 inches long. There are about 18 or 20 series of tubercles, wounding to the left. Spines shortish and red. Tomentum short, deciduous. Axils, when young, rather tomentose. Flowers white. Berry red.

Mammillaria. Native Plant axils

23 M. compresa (D. C. l. c.) Plant simple, cylindrically-clavate; axils when young woolly and bristly; mammae ovate, short, angular at the base, and as if they were compressed beneath, with the areole rather more or less. prickles 4-5 in each fascicle, unequal, white, lower one the longest.  h. D. S. Native of Mexico. Coulter, no. 29. Plant 5 inches high, 1 inch broad. Outer prickles 3-4 lines long; central one 6 lines long.

Conoid Mammillaria. Pl. 1/2 foot.

24 M. cornifera (D. C. l. c.) Plant simple, globose, with naked axils; mammae ovate, thick, crowded, with the areole smooth; outer prickles 16-17, radiating, grey, with a stronger, longer, erect, rather incurved one in the midst of each fascicle.  h. D. S. Native of Mexico. Coulter. Plant 3 inches in diameter, 2 1/4 broad. Ray prickles 5-6 lines long, and the central one 7-8 lines long.

Horn-bearing Mammillaria. Pl. 1/4 foot.

25 M. cruciata (D. C. l. c.) Plant globose, depressed, multiple at the base; axils naked; mammae ovate, thick, with the areole smooth; bristles 15-20 in each fascicle, white, elongated, rather radiating: central prickles yellow, stiff, hooked at the apex, length of the bristles that surround them.  h. D. S. Native of Mexico. Coulter, no. 28. Plant 1 inch high, 1 1/8 inch in diameter. Bristles 8-9 lines long. Var. β, paucisetæ (D. C. l. c.) axils woolly; bristles 8-10 in fascicle. Sometimes the bristles are nearly all deciduous. Coulter, no. 29.

Hairy Mammillaria. Pl. 1 inch.

26 M. cespititia (D. C. l. c.) Plant multiple at the base, tufted, aggregate, globose; axils naked; mammae few, ovate, with the areole smooth; prickles straight, stiff, when young whitish-yellow, but in the adult state greyish: outer ones 9-11 in each fascicle, radiating, with 1-2 longer, erect, central ones.  h. D. S. Native of Mexico. Coulter. Tufts 4 inches broad. Offsets an inch in diameter.

Tufted Mammillaria. Pl. 1/4 foot.

27 M. subangularse (D. C. l. c.) Plant simple or multiple at the base, nearly globose, depressed; axils for the most part woolly; mammae ovate, thick, short, angularly tetragonal from pressing so close against each other, with the areole of the young ones tomentose, prickles 6-8 in each fascicle, erectly diverging, unequal, of a pale grey colour.  h. D. S. Native of Mexico. Coulter. Plant nearly 3 inches high and 1 1/2 broad. Prickles 3-10 lines long.


28 M. macracantha (D. C. l. c. p. 113.) Plant simple, globose, depressed, with some of the axils naked, and some of them bearded with wool; mammae ovate, rather tetragonal, with the areole of the young ones rather tomentose; prickles 1-2, very long, pungent, white, or brownish.  h. D. S. Native of Mexico. Coulter, no. 44. Perhaps the same as M. magnimamma, Haw. 2. Prickles 2 inches long. Plant 1 1/8-2 inches high, and 3-6 inches in diameter. Prickles rather angular.

Long-spined Mammillaria. Pl. 1/4 foot.

29 M. longimamma (D. C. l. c.) Plant simple, or rather multiple at the base, ovate, or nearly cylindrical; axils woolly; mammae ovate-oblong, dense, with the areole tomentose; prickles 9-10 in each fascicle, pungent, of a greenish brown colour.  h. D. S. Native of Mexico. Coulter, no. 30. Plant 3-4 inches high, and 2 inches broad. Prickles 6-9 lines long.

Long-taeteated Mammillaria. Pl. 1/4 foot.

30 M. octacantha (D. C. l. c.) Plant simple, ovate-oblong, nearly cylindrical; axils naked; mammae oblong, shorter, with the areole of the young ones rather more or less. prickles stiff, the outer 7 in each fascicle radiating and white, with a central one, which is stiffer, longer, and of a fuscescent-colour.  h. D. S. Native of Mexico. Coulter, no. 39. Plant 3 inches high, 2 inches broad. Outer prickles 3-4 lines long; central one 6 lines long.

Eight-spined Mammillaria. Pl. 1/4 foot.

31 M. leucacanthæ (D. C. l. c.) Plant multiple at the base, ovate; axils naked; mammae few, ovate-tetragonal, with the areole of the young ones glabrous; prickles 5-6 in each fascicle, stiff, white, sometimes all radiating, and sometimes the one in the centre is erect.  h. D. S. Native of Mexico. Coulter. Plant an inch and a half high, and hardly an inch broad. Prickles 4 lines long.

White-spined Mammillaria. Pl. 1/2 foot.

32 M. divergens (D. C. l. c.) Plant multiple at the base, nearly globose, depressed; axils woolly and bristly; mammae ovate, crowded, with the areole of the young ones woolly; prickles 3-5 in each fascicle, unequal, pungent, white, but brownish at the apex, diverging, and somewhat tetragonal.  h. D. S. Native of Mexico. Coulter. Perhaps only a variety of M. macracantha. Tufts 6-7 inches broad, and 5 inches high.

Diverging-spined Mammillaria. Pl. 1/2 foot.

33 M. tricainantha (D. C. l. c.) Plant simple, obovate, nearly cylindrical, bluntly truncate; axils hardly woolly, but with few bristles; mammae ovate, much crowded, with the areole of the young ones tomentose; prickles 3 in each fascicle, erect, white, lower one the longest, tending downwards, 2 lateral ones very short.  h. D. S. Native of Mexico, Coulter, no. 46. Plant 3 inches high, and 1 1/4 inch broad. Sometimes there is a fourth prickles in each bundle, but when this is present it is very short.

Three-spined Mammillaria. Pl. 1/4 foot.

34 M. sempervivæ (D. C. l. c. p. 114.) Plant simple, attenuated at the base, depressed at the apex, disk-formed; axils woolly; mammae erect, ovate-tetragonal, with the areole smooth; bristles 3-4 in each fascicle, stiff, short, and white; 2 thick, short, diverging prickles.  h. D. S. Native of Mexico. Coulter, no. 57. Plant 2 3/4 inches broad, and 1 3/4 high. Var. β, tetracantha (D. C. l. c.) Plant densely bearded in the axils; bristles none; prickles 4, short, diverging.  h. D. S. Native of Mexico.

Sempervivæ-like Mammillaria. Pl. 1/4 foot.

35 M. dioscoreæ (D. C. l. c.) Plant simple, depressed, disk-formed; axils naked; mammae crowded, short, depressed, tetragonal, with the areole of the young ones rather tomentose, and of the adult ones somewhat unarmed; prickles 5, in each central mamma, stiff, white, erect.  h. D. S. Native of Mexico. Coulter, no. 50. Plant 3 inches high, and hardly an inch high.

Disk-formed Mammillaria. Pl. 1 inch.

36 M. latimamma (D. C. l. c.) Plant simple, depressed, somewhat dissodid: with the younger axils woolly; mammae short, broadly ovate, at length depressed, transversely oblong, with the areole of the young ones woolly; prickles 16-17 in each fascicle, stiff, yellowish, rather fuscescent at the apex, diverging, unequal.  h. D. S. Native of Mexico. Coulter, no. 34. Plant 5 and a half inches in diameter, and hardly an inch and a half high.

Broad-teated Mammillaria. Pl. 1 inch.

37 M. geminispina (Haw. in phil. mag. 63. p. 42. D. C. diss. t. 3.) Plant simple, cylindrically columnar; axils very woolly; tubercles or mammae small, very numerous; spines small, white, interwoven, 2 of which in each fascicle are much longer than the rest.  h. D. S. Native of Mexico. Cactus columnaris, Moc. et Sesse, fl. mex. icon. ined. Plant half a foot high. Flowers
red, a little longer than the tubercles. Haworth’s plant appears
to be different from that of De Candolle.

38 M. vivipara (Haw. suppl. p. 72.) plant multiple; offsets
nearly globose; tubercles or mammæe cylindrically ovate, bearded,
marked by a prolificous furrow above; flowers central, large,
exserted. D. F. Native of Louisiana, on high hills about the
Each tuft of the plant in its native place of growth is 2 or 3 feet in
diameter. Flowers deep red, almost like those of Cércus flagel-
formis. Outer lobes of calyx ciliated. Berries about the size
of grapes, fusiform, greenish.

39 M. glomerata (D. C. prod. 3. p. 450.) plant tufted;
tubercles or mammæe clavate, glaucous, tomentose, furnished with
a stellate bunch of spines each at the apex. D. S. Native of
St. Domingo, in marshes. Plum. ed. Burm. 201. f. 1. Cactus
exclusive of the synonyme of Haworth. Flowers red.

Glomerate Mammillaria. Shrub ½ foot.
40 M. pusilla (D. C. diss. t. 2. f. 1.) plant multiple, round-
ish; axes a little bearded; tubercles or mammæe ovate, bearing
radiating spines at the apex, outer spines hair-formd and white,
inner ones stiff and pale yellow, pubescent when examined under
a lens. D. S. Native of South America. Mill. dict. no. 6.
Cactus pusillus, D. C. cat. hort. monsp. p. 185.—Pluck. phyt. t.
29. f. 2. Plant very small, rather glaucose, hardly 2 inches
high. The tubercles or mammæe are disposed in 5 or 7 series,
which wind to the left. Flowers large, white or pale red, with
the backs of the petals reddish.

41 M. stellata (Haw. in phil. mag. Feb. 1830.) plant irreg-
ularly tufted, beset with radiating fascicles of white pubescent
spines; the lower ones of which are hair-formed, with a few of
the upper ones much stronger and more horizontal, and straw-
coloured at the apex. D. S. Native of South America.
p. 72. Lodg. bot. cab. 79, but not M. pusilla, D. C.

42 M. missouriensis (Sweet, hort. brit. p. 171.) mammæ
or tubercles ovate, terete, bearded; flowers hardly exerted; berries
scarlet, about equal with the mammæ. D. F. Native of
Louisiana, on the high mountains about the Missouri. Cactus
mammillaris, Nutt. gen. amer. 1. p. 295. Flowers white. Ber-
ries scarlet. This is a much smaller plant than M. simplex, to
which it is nearly allied.

½ to ½ foot.

† Species not sufficiently known.

43 M. helicteres (D. C. diss. t. 5.) plant simple, obovate,
glabrous; tubercles or mammæe disposed in numerous, nearly
vertical, regularly spiral series, bearing spreading, straight,
spines at the apex. D. S. Native of Mexico. Cactus Helicteres,
Moc. et Sesse, fl. mex. icon. ined. Plant 3-4
inches high. Flowers rose-coloured, a little longer than the
mammæ.

Scren Mammillaria. Pl. ½ to ½ foot.
44 M. sunda (D. C. prod. 3. p. 460.) plant simple, cylindri-
cal; ascending, glabrous; tubercles or mammæe unarmcd. D. S.
Native of Mexico. Cactus nudus, Moc. et Sesse, fl. mex.
icon. ined. Flowers rose-coloured.

Naked Mammillaria. Pl. ½ to ½ foot.

‡ The following species are hardly known unless by name;
some of these names may, however, be referrible to those described
above.

1 M. mifis. Mill. dict. 2 M. conica, Haw. suppl. 3 M.
caespitosa, Hort. berol. 4 M. canescens, Hort. berol. 5 M.
angulare, Hort. berol. 6 M. chrysanthà, Hort. berol. 7 M.
aurata, Hort. berol. 8 M. fuscata, Hort. berol. 9 M. atrata,
Hort. berol.

The following species were raised in the gardens in 1827
from seeds brought from Chili by Dr. Gillies, but have not yet
been described. The species we have referred to this genus only
from their seedling state, without any knowledge of them when
full grown. The names are under the genus Cactus in Gillie’s
text.

1 M. spinata, Gill. 2 M. quadrotta, Gill. 3 M. caudata,
Gill. 4 M. cocinea, Gill. 5 M. solitaria, Gill.

Cult. Mammillaria is a genus of small singular grotesque
succulent plants. A mixture of sand, loam, and peat, or loam
mixed with brick rubbish, is a good soil for them. The pots
in which the species are grown should be as small as the plants
will allow, and they should be well drained with sherds; they re-
quire very little water. The pots should be placed on shelves
erected for the purpose in a stove, should there be no house for
the purpose of growing succulent plants, called a dry stove.
The plants are increased by offsets.

II. MELOCA’CTUS (from μμολος, melon, a melon, and κακ-
rosis, cactus, a name applied to a spiny plant by Theophrastus;
the plants are in the form of a melon, and the angles are beset
Link et Otto, diss. 1827. p. 8. D. C. prod. 3. p. 460.—Cactus,
Haw. syn. 172. exclusive of some species. Cactus, sect. B.
Link, enum. 2. p. 21.

Lin. syst. Icosanthera, Monogynia. Tube of calyx adhering
to the ovarium; lobes 5-6, peltaloid, crowning the young fruit.
Petals 5-6, united into a long cylindrical tube with the sepals.
Stamens filiform, disposed in many series. Style filiform; stigma
5, radiating. Berry smooth, crowned by the dry lobes of the
corolla and calyx. Seeds imbedded in the pulp. Cotyle-
dons small. Plumule large, nearly globose (D. C. Organogr.
t. 48. f. 3.) Fleshy globose simple roundish shrubs, with
depth funnels, alternating with vertical ribs, which are orna-
mented with confluent tubercles, each tubercle furnished with
a starry fascicle of prickles or spines. Spadix or flowering head
terminal, cylindrical, composed of mammæae, much crowded
tomentose or setiferous tubercles. Flowers immersed in the
wool of the head under its apex.

1 M. Communis (Link et Otto, l. c. diss. p. 8. t. 11. D. C.
diss. t. 6.) plant ovate-roundish, deep green, with 11 or 18
angles; ribs straight; spines strong, pale brown, unequal, 9
in each fascicle; lower one the longest; middle one erect. D.
S. Native of the West India Islands, in salt marshy
places near the sea; and probably on the main land of South
grass. t. 112.—Cactus Melocactus, and C. coronatus, Lam. dict.
p. 537.—Brass. succ. t. 32. Ribs 12-18. Flowers tubular,
red. Fruit red, nearly like those of Mammillaria, but larger,
oblong, and deciduous, protruding from the wool on the head.

Var. B, obsolentus (Link et Otto, l. c.) plant smaller; prickles
weaker, and more red. Stem 6 inches high, and 3½ thick.

Var. γ, macrorcephalus (Link et Otto, l. c.) plant thicker,
14 inches high, and 9 inches broad.

1688. Shrub 1 foot.

2 M. LAMARCKII; plant ovate, flatish at the base, with
14-20 angles at the top, which are rather oblique and bluntest
on the back; spines red, stiff, rather incurved, disposed in approximate fascicles, which are very woolly towards the tops of the angles; cap roundish, furnished with a few red setaceous spines; flowers red. \(\text{C.} \) D. S. Native of South America. Cactus Lamarréii, Coll. hort. ripul. append. 3. t. 7.

Lamarré’s Melon-thistle. Pl. \(\frac{3}{4}\) foot.

3 M. MACRACANTHUS (Link et Otto, diss. p. 9. t. 12.) plant roundish, light green, with 14 angles; ribs straight; spines in fascicles, very thick, whitish, but of a brownish-red colour at the apex: outer 12 radiating, central, 4 large and straight. \(\text{C.} \) D. S. Native of St. Domingo. Cactus macracanthus, Salm-Dyck, obs. 1820. p. 1. Haw. rev. p. 69. Flowers unknown, but the spadix or woolly head is depressed at the top.


4 M. PYRAMIDALIS (Link et Otto, diss. p. 10. t. 25.) plant conical or pyramidal, with 17 angles; ribs rather oblique, crested; spines very long, in fascicles, of a brownish-red colour: outer 14 radiating in 2 series, with 2 or 3 and very long. \(\text{C.} \) D. S. Native of Peru. Cactus pyramidalis, Salm-Dyck, obs. 1829. p. 4. Stem when young crowded with spines. Spadix or woolly head conical, depressed at the apex.

Pyramidal Melon-thistle. Shrub 1 foot.

5 M. PLACENTIFORUM (D. C. prod. 3. p. 460.) plant hemispherical, depressed, green, with 12 or 14 angles; ribs very blunt; prickles 8-12 in a fascicle, unequal, recurved, strong. \(\text{C.} \) D. S. Native of Brazil. Cactus Melocactus, Besl. hort. eyset. 4. ord. f. 1; but not of Lin. C. placentiformis, Lehm. ind. sem. hort. hamb. (1826). Melocactus Besleri, Link et Otto, diss. (1827). p. 11. t. 21. Lehm's name being older than Link's has been here adopted, as being more apt; but Link's figure and description are far better. Spadix or woolly head nearly globose, impressed in the vertex. Flowers reddish. Prickles blackish.

Placenta-formed Melon-thistle. Shrub 1 foot.

6 M. LANGSORDII (D. C. prod. 3. p. 460.) plant oblong, with 17 angles; spines slender, stiff, spreading: top of plant floriferous, very villous and very spiny. \(\text{C.} \) D. S. Native of Brazil? Cactus Langsdorffii, Lehm. in sem. hort. hamb. (1826). Flowers yellow. Stamens purple. The rest unknown.

Langsdorf's Melon-thistle. Shrub 1 foot.

† Species not sufficiently known.

7 M. SELLOLI (D. C. prod. 3. p. 461.) plant globose, depressed, glaucous, woolly and flat in the vertex, with 10 arched ribs; prickles 7 in each fascicle, recurved: the central 5 much the largest. \(\text{C.} \) D. S. Native of Monte Video. Echinocactus Sellowii, Link et Otto, diss. p. 16. t. 22. Melocactus species secundum Salm-Dyck, who confirms that the plant is woolly at the top, and is analogous to \textit{M. placentiformis}. Plant 2 inches high, and \(\frac{1}{2}\) inches thick. Prickles 8-10 lines long, fuscous. Flowers unknown.

Sello’s Melon-thistle. Pl. \(\frac{1}{3}\) foot.

8 M. POLYACANTHUS (D. C. prod. 3. p. 461.) plant oval, glaucous, with a flat woolly apex, and with 21 blunt vertical ribs; prickles 8 in each fascicle: the upper 2 of these smaller than the others. \(\text{C.} \) D. S. Native of Brazil in the province of Rio Grande. Echinocactus polyacanthus, Link et Otto, diss. p. 13. t. 16. f. 1. Stem \(\frac{1}{2}\) inches high, and \(\frac{1}{2}\) inches thick, attenuated at the base, with narrow furrows; prickles cinereous. Flowers unknown.

Many-spined Melon-thistle. Shrub \(\frac{1}{3}\) foot.

9 M. MELOCACTOIDES (D. C. prod. 3. p. 461.) plant globose, with 10 angles, having the tops of the angles beset with a series of woolly tubercles; prickles 7 or 8 in a fascicle, rather recurved, pale, but becoming gradually brownish towards the apex. \(\text{C.} \) D. S. Native of Brazil. Cactus melocactoides, Hoffm. verz. 2. \(\text{f.} \) (1826) 3. p. 24. Habit of \textit{M. communis}.

Melocactus-like Melon-thistle. Pl. \(\frac{3}{4}\) foot.

Cult. A grotesque and singular genus like the last, but of larger growth, and beset with stronger spines, without teats. The culture, propagation, and treatment of the species are the same as that recommended for the last genus.

III. ECHINOCACTUS (from \textit{echinos}, echinos, a hedgehog, and \textit{cactus}, a name given by Theophrastus to the spiny plant; plants beset with spines like the hedgehog.) Link et Otto, diss. p. 11. Salm-Dyck, in litt. D. C. prod. 3. p. 461.—Cactus species of Haw.

LIN. SYST. ICOSANDRIA, MONOGYNYA. Sepals numerous, imbricate, adnate to the base of the ovary, united into a short tube at the base: outer ones in the form of an involucrum: inner ones petal-formed. Stamens numerous. Style filiform, multiliform at the apex. Berry scaly from the permanent remains of the sepals. Cotyledons wanting?—Simple, grotesque, fleshy, ovate or globose, ribbed, leafless shrubs, with the habit of \textit{Melocactus}; ribs as if they were formed from confluent tubercles, bearing on their back fascicles of prickles. The woolly head or spadix, which is present in \textit{Melocactus} is wanting in this genus. Flowers rising from the fascicles of spines at the tops of the ribs very like those of the genus \textit{Cereus}, but the tube is almost wanting.

1 E. GIBBOSUS (D. C. prod. 3. p. 461.) plant ovate or nearly oblong, obtuse; ribs interrupted by tubercles; some of the tubercles rather tomentose at the apex, and tipped with fascicles of stiff straight needle-formed prickles; others in the outer series naked, elongated, and mammaeform, and a little compressed. \(\text{C.} \) D. S. Native of Jamaica. Cactus gibbosus, Haw. syn. p. 173. bot. reg. 137. Plant nearly like that of \textit{Mammillaria tuberculosa}, but is not laccescent. Flowers 2, larger than any other of the genus, quite at the apex of the plant, which is depressed. The tube of the flower is greenish, and the sepals distant, with a white expanded limb: lobes obovate, rather mucronate, disposed in 4 series. Genitals yellow.


2 E. SUBGIBBOSUS (Haw. in phil. mag. Oct. 1831. p. 418.) plant roundish-oblong, very spiny, with the spines intervenen; angles or ribs about 16 in number, and are, as well as the recesses, profuse and acute; fascicles of spines distant. \(\text{C.} \) D. S. Native near Volparoza. Plant 5 inches high, and 3 inches broad, woolly at the base of the fascicles of spines. Spines straight, 12-13 in each fascicle: the lower ones of these are whitish or pale, bristle-formed, nearly half an inch long, horizontal: the upper ones prickie-formed, much larger, nearly an inch long, bulbous, and yellowish at the base, and rufescent at the apex; the middle spine of the ultimate fascicles compared with the rest is straight.

Sub-gibbous Hedgehog-thistle. Clt. 1830. Pl. \(\frac{1}{3}\) foot.


4 E. CORNEGUS (D. C. diss. t. 7) plant subglobose, very obtuse; ribs almost vertical, interrupted by tubercles, somewhat depressed: all prickly at the top; prickles unequal, straight, and needle-shaped: the lower one broad, thick, and a little recurved at the apex. \(\text{C.} \) D. S. Native of Mexico.
Cactaceae. III. Echinocactus.


5 E. crispatus (D. C. diss. t. 8.) plant obovate, retuse at the apex, and rather umbilicate; ribs numerous, from 30 to 60, nearly vertical, undulately curved, and tubercular; prickles in fascicles, unequal, straightish. Fl.S. Native of Mexico. Cactus crispatus, Moc. et Sesse, fl. mex. icon. ined. Flowers smaller than any other of the genus, at the top of the plant, purple; sepals densely imbricated along the tube, oblong-linear, acute, disposed in 2 series in the limb.

Var. ß, harrisi (D. C. mem. cact. in mem. mus. 17. p. 115.) fascicles of spines approximate; prickles stronger, more erect and longer, of a greyish brown-colour.

Curled Hedgehog-thistle. Pl. 1/4 foot.

6 E. ornatus (D. C. mem. cact. in mem. mus. vol. 17. p. 114.) plant nearly globose; with 8 deep compressed vertical ribs, ornamented with transverse rows of flesky down, with 3 fascicles on each rib; prickles 7 in a fascicle, straight, yellow, and one central. Fl. S. Native of Mexico. Coulter, no. 49. Plant 5 inches in diameter. Prickles 8-10 lines long.

Ornamented Hedgehog-thistle. Pl. 1/4 foot.

7 E. tuberculatus (Link et Otto, diss. t. 26.) plant nearly globose, with 8 nearly vertical ribs, and with the recesses narrow; crests very obtuse, tuberculatet at the fascicles, of which there are 8 or 10 on each rib; areoles when young rather velvety; prickles 15-18 in each fascicle, grey, with one central straight strong one, the rest radiating. Fl. S. Native of Mexico. Coulter. Intervals on the ribs between the fascicles of spines 8-9 lines. Prickles an inch long.

Var. ß, spiralis (D. C. l. c.) ribs twisted spirally to the right. Fl. S. Native of Mexico. Coulter. Perhaps merely an older state of the species.

Tubercled Hedgehog-thistle. Pl. 1/4 foot.

8 E. ceriifíormis (D. C. l. c. p. 115.) plant nearly cylindrical, green, with about 13 compressed ribs, with the recesses acute, and the crests bluntish; tuberules 7 radiating, and one central, in each fascicle, greyish, stiff, slender, with 3 fascicles on each rib. Fl. S. Native of Mexico. Coulter. Perhaps a species of Cereus.


9 E. glaucescenis (D. C. l. c.) plant nearly globose, depressed, glaucous, with 11-13 vertical compressed obtuse ribs, with 6 fascicles on each rib; areole oval-oblong, when young velvety; prickles yellow, straight, with 6-7 radiating ones, and one central one in each fascicle. Fl. S. Native of Mexico. Coulter. Flowers solitary on the top of each rib, rising in the front of a fascicle. Scales of calyx imbricated, smooth, oval, acuminate, with membranous ciliated margins. Plant 3 inches high, and 5 inches in diameter. Intervals between the fascicles on the ribs half an inch. Prickles an inch long.

Glaucensae Hedgehog-thistle. Pl. 1/4 foot.

10 E. coulteri; plant nearly globose, depressed, green, with 13-18 vertical ribs, with both the recesses and ribs acute; fascicles 3 on each rib; areole oval, when young velvety; prickles yellow, stiff, with 7-8 radiating ones, and one erect central one, which is nearly twice the length of the others, in each fascicle. Fl. S. Native of Mexico. Coulter, no. 45. E. hystrix, D. C. l. c. but not of Haw. Plant 5-8 inches in diameter, and 3-4 inches high. Prickles an inch long, central ones 2 inches high. Intervals between the fascicles on the ribs 12-18 lines in length.

Coulter's Hedgehog-thistle. Pl. 1/4 foot.

11 E. obvallatus (D. C. diss. t. 9.) plant obovate-globose, depressed and umbilicate at the apex; ribs numerous, vertical; prickles in fascicles, unequal, divergant, long, flower solitary at the top of the plant, surrounded by spines. Fl. S. Native of Mexico. Cactus obvallatus, Moc. et Sesse, fl. mex. icon. ined.—Tepenexcomitl, Hern. mus. p. 410. with a figure. Spines whitish, needle-shaped, diverging, intricate. Flower erect, purple, with the margins of the lobes of the limb white.

Entwined-flowered Hedgehog-thistle. Pl. 1/4 foot.

12 E. texuispinus (Link et Otto, diss. p. 12. t. 19. f. 1.) plant nearly globose, umbilicately retuse at the apex; ribs 12, bluntish; prickles in fascicles, slender, recurved, 3 or 4 of which are a little larger than the rest; flowers girdled by wool. Fl. S. Native of Brazil, in the province of Rio Grande. Plant green, 2 or 3 inches in diameter. Sides of ribs rather impressed. Flowers beyond 2 inches long, yellow; sepals lanceolate, acute; petals dilated, obuse, each mucronated by a red bristle. Style 12-15 parted.

Var. ß, minor (Link et Otto, l. c. f. 2.) plant smaller; spines longer and slenderer, and more bent.


13 E. melanocactiformis (D. C. diss. t. 10.) plant roundish, ovate, obtuse; ribs vertical, about 30 in number; prickles in fascicles, diverging, unequal; flowers numerous, in a kind of whorl beneath the apex of the plant. Fl. S. Native of Mexico. Cactus multangularis, Moc. et Sesse, fl. mex. icon. ined. but not of Wild. Spines brownish. Sepals numerous, purplish on the outside, imbricated, and appressed to the tube; limb expanded; lobes oblong, acute, disposed in 2 or 3 series. Stigmas long, 3-12, exserted above the stamens.


14 E. Langeński (Lehnh. indem. sem. hort. lamb. 1826, p. 17.) plant oblong, with 17 angles; spines slender, stiff, spreading; vertex of plant very villous and spiny, and bearing flowers. Fl. S. Native of Brazil. Plant green. Fascicles of spines approximating, rising from short wool, central spine in each fascicle an inch long, the 6 marginal ones unequal, reflexed, and spreading. Flowers 2-4, terminal, rising from among wool and spines. Calyx tubular. Petals about 20, yellow. Stigma many-parted, radiate, purple.

Langsdorff's Hedgehog-thistle. Shrub 1/4 foot.

† The flowers of the following species being unknown, some of them are probably referrible to the genus Melocactus.

15 E. tephrae'nthus (Link et Otto, diss. p. 13. t. 14. f. 2.) plant globose, glaucous, impressed on the top, not tubercled; ribs 15, acute; prickles 10 in each fascicle, spreading; the 4 central ones the largest. Fl. S. Native of Brazil, in the province of Rio Grande. The plant is hardly an inch high, and hardly the same in thickness. Prickles canescent, hardly an inch long. Flowers unknown.


Recurred Hedgehog-thistle. C. 1796. Pl. 1 foot.

Var. \( \beta \), purpurescens (D.C. prodr. 3. p. 462.) Melocactus purpurescens, striis in spiraem contortis, Plum. spec. 15. miss. vol. 3 t. 8. Cactus nöbils, Lam. dict. 1. p. 537. Native of St. Domingo. The whole plant is purple, with white prickles. Perhaps a proper species, or a true species of Melocactus, ex Salm-Dyck in litt.


18 E. SALMINUS (Link et Otto, diss. p. 14. t. 15.) ribs 14-15, bluntish; 3 central prickles erect, rays ones 15, spreading, in each fascicle. \( \uparrow \). D.S. Native of Curassao. Plant 4 inches long, and 3 1/2 inches thick, with the furrows narrow. Prickles reddish. Top of plant impressed. Perhaps the same as Melocactus pyramidalis, but in a young state. Flowers unknown.

**Salm-Dyck's Hedgehog-thistle.** Pl. 1/2 foot.

19 E. hystricis (Haw. in phil. mag. Feb. 1830. p. 115.) plant roundish, usually with 12 spaces; spines straight, an inch and a half long, fulvous, much longer than the wool from which they rise. \( \uparrow \). D.S. Native of the West Indies. Cactus bystrich, Haw. suppl. p. 73. Ceres bystrich, Sweet. Flowers unknown. Like E. Salminus, but differs in the plant being more oblong, and in the spines being much fewer.

**Porcupine Hedgehog-thistle.** Clt. 1808. Pl. 3/4 foot.

20 E. Turbculatus (Link et Otto, diss. p. 16. t. 26.) plant nearly globose, green, depressed at the top; ribs 8, bluntish; fascicles with 3 central straight prickles, and 7 spreading, rather recurved ray ones, which become gradually smaller from the centre. \( \uparrow \). D.S. Native of Mexico. Plant 4 inches high, and 3 1/2 inches thick, with the furrows narrow. Central prickles of the fascicle an inch long, the ray ones gradually decreasing in length. Flowers unknown.

**Tuberculatet Hedgehog-thistle.** Pl. 1/2 to 3/4 foot.

21 E. Gladiatus (Link et Otto, diss. p. 17. t. 17.) plant oval-oblong, glaucescent, depressed at the apex; ribs 14-22, bluntish; prickles 10 in each fascicle, 3 central ones the largest, flattened, and elongated: middle one of the 3 erect: ray ones spreading much. \( \uparrow \). D.S. Native of Mexico. Plant 5 inches high, and 4 inches thick. Prickles canecent, crowded at the top, larger ones 2 inches long. Flowers unknown.

**Gladiate-spined Hedgehog-thistle.** Pl. 3/4 foot.

22 E. subuliferus (Link et Otto, diss. p. 16. t. 27.) plant subglobose, green, not depressed at the apex; ribs 8-10, blunt, tuberculatet; central prickles large, erectish, recurved, and spreading, and the 4-6 outer ones, divergate, and slender, in each fascicle. \( \uparrow \). D.S. Native of Mexico. Plant 2 1/2 inches high, and 2 inches thick, with the ribs evidently composed of conical tubercles. Prickles hoary brown; the larger ones 2 inches long, and the smaller ones about 4 lines long. Flowers unknown.

**Aur-bearing Hedgehog-thistle.** Pl. 1/2 to 3/4 foot.

23 E. depressus (D.C. prodr. 3. p. 463.) plant nearly globose, depressed at the apex; ribs vertical, about 20 in number, obtuse, and somewhat tuberculatet; fascicles of prickles crowded; prickles rising from fascicles of white tomentum, stiff, very pale brown: central ones in each fascicle 3-4, and 10-12 ray ones: the lower one of these very strong. \( \uparrow \). D.S. Native of South America. Melocactus depressus, Salm-Dyck in litt. Cactus depressus, Haw. syn. 173.

**Depressed Hedgehog-thistle.** Clt. 1798. Pl. 3/4 foot.

24 E. orthacanthus (Link et Otto, diss. p. 18. t. 18.) top of plant depressed; ribs 18, bluntish; prickles 7 in each fascicle: the central one of these strong, large, and straight: the rest spreading. \( \uparrow \). D.S. Native of Monte Video. Plant 2 1/2 inches in diameter, with narrow furrows. Prickles canecent: the larger ones 9 lines long, and the rest about 5 lines long. Flowers unknown.

**Straight-spined Hedgehog-thistle.** Pl. 1/2 to 3/4 foot.

25 E. arcaus (Link et Otto, diss. p. 15. t. 23.) plant subglobose, glaucescant, not depressed at the apex; ribs 20, arched; prickles 7 in each fascicle, spreading, and recurved. \( \uparrow \). D.S. Native of Monte Video. Plant 3 inches high, and 2 1/2 thick, with broad furrows. Sides of ribs not impressed. Prickles of a hoary fuscenscent colour, 4-6 lines long. Flowers unknown.

**Arched-ribbed Hedgehog-thistle.** Pl. 1/2 foot.

26 E. parvispinus (D.C. prodr. 3. p. 463. Haw. in phil. mag. Feb. 1830. p. 114.) plant nearly globose, umbilicate at the apex; ribs 15, compressed; prickles small, white, fulvous at the apex, rising from white tomentum, 7-9 in each fascicle: the central one of these straight, and the ray ones 6-8 in number, and a little recurved. \( \uparrow \). D.S. Native of South America. Melocactus parvispinus, Haw. suppl. 73. Salm-Dyck in litt. Flowers unknown. Very like E. meyocanathus, Link et Otto.

**Small-spined Hedgehog-thistle.** Pl. 1/4 foot.

27 E. intricatus (Link et Otto, diss. p. 19. t. 24.) plant oval, green, with a depressed tubercled top; ribs 20, bluntish; fascicles of prickles crowded, 18-20 in each fascicle: the 4 central ones of these larger and erect, the rest spreading, outermost ones divercat. \( \uparrow \). D.S. Native of Monte Video. Plant 4 inches high, and 4 1/4 broad; ribs usually bent. Prickles yellowish, rising from short wool, 4 lines long. The form of the plant is elongated, and like that of a creeping Cactus. Flowers unknown.

**Less-spined Hedgehog-thistle.** Pl. 1/2 foot.

28 E. denudatus (Link et Otto, pl. rar. hort. berol. t. 9.) plant subglobose, green, with 6-8 bluntish ribs; spines 3-8 in each fascicle, all spreading; involucrum with few leaves. \( \uparrow \). D.S. Native of Brazil.

**Naked Hedgehog-thistle.** Pl.

30 E. tortuosus (Link et Otto, pl. rar. hort. berol. t. 15.) plant nearly globose, depressed at the top, green, with 4 arched ribs; the 4-6 middle spines in each fascicle a little larger and thicker than the rest, which are numerous, but all are nearly equal, spreading, and twisted. \( \uparrow \). D.S. Native of Brazil.

**Twisted-spined Hedgehog-thistle.** Pl.

31 E. erinaceus (Haw. in phil. mag. Feb. 1830. p. 114.) plant globular, usually with 14 angles; spines inclining, 9 lines long, numerous, somewhat recurvedly divergate, fulvous, shorter than the wool from which they originate: fascicles of spines approximate. \( \uparrow \). D.S. Native of South America. Cactus erinaceus, Haw. suppl. p. 74. Very like Melocactus polyacanthus, Link et Otto, in form, but differs from it in the number of the angles, and in the absence of the woolly flowering top; but the fascicles of spines are nearly similar.


† The two following species, from their habit in a seedling state appear to belong to the present genus, but are not described; they are in the gardens of Edinburgh and Glasgow under the name of Cactus, and have been brought from Chili.

1 E. corrugata, Gill. miss. 2. E. flosuia, Gill. miss. Cult. See Mammillaria, p. 160. for culture and propagation. Grotesque plants, with the habit of the last genus.
IV. CEREU.S (from cereus, plant; in reference to the shoots of some of the species). D.C. cat. hort. monsp. 1819.


Lin. syst. Jočuandia, Monogynia. Sepals very numerous, imbricated, adnate to the base of the ovary, united into an elongated tube; outer sepals the shortest, forming the calyx, middle ones longer and coloured, innermost ones petal-formed. Stamens very numerous, united with the tube. Style filiform, multifid at the apex. Berry areolate, tubercular or scaly, either from the remains of the sepals, or from their cicatrices when they have fallen off. Coryledons wanting?—Fleshy grotesque shrubs, with a woody axis, and medulliferous inside; angles vertical, bearing fascicles of spines, regularly furrowed. Angles or wings either numerous or very few. Flowers large, rising from the fascicles of spines or indentures on the angles.

§ 1. Cereætri (an alteration from the generic name). Plants standing without support, never throwing out roots. Stems upright.

* Stems with many angles.

1 C. Multangularis (Haw. suppl. 75.) stem erect, with 18-20 angles; angles very close, blunt; prickles setaceous, yellow, longer than the wood from which they rise. h. D. S. Native country and flowers unknown. Cactus multangularis, Willd. enum. suppl. 33. Perhaps the same as Cactus Kagenkii, Gmel. ex Salm-Dyck in litt.


Broom Torch-thistle. Shrub 1 foot.

3 C. sentis (Salm-Dyck in litt. ex D.C. prod. 3. p. 464.) plant erect, somewhat club-shaped; stem with 20-25 vertical tubercled ribs; fascicles of prickles crowded, naked at the base, each fascicle containing 15-20 radiating hair-formed curled bristles, and a straight stiff central spine. h. D. S. Native of Mexico. Cactus sentis, Haw. in phil. mag. vol. 63. p. 41. Cactus bradyanus, Lehm. ind. sem. hort. hamb. 1825. p. 17. This is a very singular plant, covered all over with dense hair-like bristles; it is of an oblong shape, about 3 inches high, of a greyish-colour, bent, and hanging, like the grey head of an old man, hence the specific name.


4 C. lanatus (H.B. et Kunth, nov. gen. amer. 6. p. 68.) stems erect, branched, with many angles, and clothed with white wool; angles membranous, tubercled, and beset with stellate fascicles of prickles; central prickles 8-times longer than the rest. h. D. S. Native of Quito, near the rivers Aranza and Guancabamba. Stem 10-12 feet high. Central prickles of each fascicle 1 or 1½ inch long. Flowers rising from lateral and longitudinal fissures of the stem, involved in wool. Fruit obovate, red, with a whitish green-coloured pulp. Wolly Torch-thistle. Shrub 10-15 feet.

5 C. microcarus (D.C. mem. cact. in mem. mus. 17. p. 115.) plant dividing into many stems at the base, ovate-oblong, greenish, obtuse, with 13 vertical bluntest ribs, with the recesses broad, but hardly acute; fascicles of spines approximating, with tomentose areole; prickles 3 in each fascicle, short, setaceous, diverging. h. D. S. Native of Mexico. Coulter, no. 56. Perhaps a species of Echinocactus. Plant hardly an inch high and the same in thickness.

Small-spined Torch-thistle. Pl. 1 inch.

6 C. Polylophus (D.C. l.c. 1.) plant quite simple, erect, green, cylindrical, with 15-18 vertical ribs, and with the furrows acute; central prickles rather reaped; fascicles of prickles approximating, with the young areole convex and tomentose; prickles 9-9 in each fascicle, yellow, straight, diverging, but the central one long and erect. h. D. S. Native of Mexico. Coulter, no. 15. Plant 30-40 feet in height, without any branch, according to Coulter.

Many-crested Torch-thistle. Shrub 30 to 40 feet.

7 C. Linckii (Lehm. ind. sem. hort. hamb. 1827. p. 16.) plant oval, green, with 13 angles; ribs obtuse, bearing flowers at the top from the axes of the fascicles of spines; 3 central spines in each fascicle erecely spreading, and the 10 ray ones slenderer, much more spreading; stigmas 8. h. D. S. Native of Mexico. Calyx half an inch long, beset with greenish yellow scales, which are furnished with purple bristles and white cobwebbed wool. Petals numerous, truncate at the apex, yellow, with purple bases. Style yellow. Stigmas purple.


8 C. Leccini (Coll. hort. ripul. append. 5-6. 2. under Cactus) plant ovate, tapering to the apex, with numerous blunt angles; fascicles of spines approximate, woolly at the base; spines white: ray ones spreading; central one long and straight. h. D. S. Native of South America.


* * Stems with 6-12 angles.

9 C. hexagonus (Willd. enum. suppl. 32.) plant simple, erect, large, usually with 6 strong ribs; fascicles of spines middle-sized; prickles short, brown. h. D. S. Native of South America. Cactus hexagonus, Lin. spec. 1. p. 667. Andr. bot. rep. t. 513. Cactus Peruvianus, D.C. pl. grass. t. 58.—Bradt succ. 1. p. 1. t. 1. The plant is about 40 feet high, usually without any branches, varying with 5-6-7 angles. Flowers solitary, 6 inches long; having the sepals along the tube greenish and irregularly imbricated; limb a little expanded, reddish outside and white inside. Stamens greenish. Fruit dark purple, according to Plummer.

Var. abnormis (Willd. enum. suppl. 31.) stem simple, oblong, irregularly furrowed, and tubercled; tubercles oblong, compressed, unequal, bearing prickles at the apex, and rather woolly. h. D. S. Native of South America. C. Peruvianus, monstrous, D.C. cat. hort. monsp. diss. t. 11. Flowers twin, nearly as in C. hexagonus, but more expanded and larger, with the outer sepals reddish, but the inner ones are pure white and serrated; tube striated with green on the outside. Stigmas 9-13, greenish.

Hexagonal Torch-thistle. Fl. Jul. Aug. Clt. 1690. Tr. 40 ft. 10 C. Ottos (Lehm. ind. sem. hort. hamb. 1827. p. 16.) plant oval, green, attenuated at the base, with 10 angles; ribs obtuse, bearing the flowers above from the fascicles of spines; 4 central spines in each fascicle, and 10-14 slender, spreading ray ones; stigmas 14. h. D. S. Native of Mexico. Calyx tubular; scales acute, greenish yellow, furnished with a fascicle of purple hairs, and white, cobwebbed wool. Petals numerous, erossed serrated at the apex and tomentose; Style yellow. Stigmas purple.


11 C. Peruvianus (Haw. syn. 171.) plant large, erect, with usually 8 angles or ribs; angles blunt, smooth, glaucous; spines whitish, rising from white tomentum, the lower one very small, and the central one very strong. h. D. S. Native of Peru and Curassoa. Cactus Peruvianus, Lin. spec. 667. Willd. enum. suppl. 32. Cereus eburneus, Salm-Dyck, in cat. hort. Dyck. 1822. Cactus Coquimbana, Molin. chil. ed. gall. p. 140. ex
Like 2. areolae Native spines Native central D. D. inches long with wool Native with ribs long D. D. prickles c.) prickles Shrub prickles ribs D. fascicle, c.) stigma D. ribs blackish small numerous; is equal thickly spines rather 6 the thickened hystrix, Domingo. 7-angled Shrub Nearly gowing, nymphoid. 16(2). 1830. 20. C. ternus (Salm-Dyck, obs. bot. 1822.) plant erect, greyish green, with 8-9 angles; ribs blunt, crenulate; prickles white, rising from grey tomentum, blackish at the apex, 9 in each fascicle, radiating and equal, and 1 long central one. 7. D. S. Native of South America. C. Royenii, Wildl. suppl. enum. p. 32. Stem rather woolly at the apex; wool grey, at length falling off.

Var. β. plant rather slenderer than the species; and the prickles are shorter. Salm-Dyck, in litt.

Crenulatus Torch-thistle. Clt. 1728. Shrub 2 to 3 feet. 21 C. cinerea (S.C. mem. cact. in mem. mus. 17. p. 116.) plant simple, erect, greyish green, with 8 blunt tubercular ribs, and narrow recesses; areole while young convex and velvety; prickles 14 in each fascicle, white, setaceous, stiff, outer 10 radiating, central 4 erectly diverging, and longer than the ray ones. 7. D. S. Native of Mexico. Coulter, no. 23. Stem 2 inches high, and 2 inches in diameter. Outer prickles 6-9 lines long; central ones 12 lines long; in fascicles, which are 5-6 lines distant from each other.

Var. β, cerradus (D. C. l. c.) stem thicker; fascicles of spines more distant.

Var. γ, tenerus (D. C. l. c.) stems slenderer; ribs more approximate. Very like C. pentalophus, but differs in being 8-angled, not 5-angled.

Greyish Torch-thistle. Clt. 1830. Shrub ½ foot. 22 C. calvus (S.C. l. c.) plant simple, or a little branched at the apex, erect, green, oblong and rather unilobate at the apex, with 7-8 vertical, obtuse ribs, and acute furrows; areoles, white, convex and tetonicous, but at length becoming nearly glabrous; prickles 8-9 in each fascicle, brown, stiff, diverging: the central ones hardly to be distinguished from the outer ones. 7. D. S. Native of Mexico. Coulter, no. 13. Stem 2½ and 3 inches in diameter. Prickles 1-2 lines long. A very distinct species.

Margined Torch-thistle. Shrub.

24 C. albidus (Salm-Dyck, obs. bot. 1822.) plant erect, greyish green, with 9 or 10 angles; ribs obtuse, very prickly; prickles grey, tipped with yellow, rising from grey tomentum, 11 radiating ones and 4 central in each fascicle. 7. D. S. Native of South America. Very like C. crenulatus, but more slender and more woolly. Old plant only woolly at the apex, but the young plant all over; the wool grey. Salm-Dyck, in litt.

White-spined Torch-thistle. Shrub 2 to 3 feet. 25 C. regalis (Haw. suppl. p. 75.) plant erect, 9-angled, furrowed; spines fulvous, elongated, when young about equal in length to the wool. 7. D. S. Native of South America. Fascicles of spines much crowded.


26 C. striatus (Wildl. enum. suppl. p. 32. under Cactus,) plant erect, green, shining, 7-9-angled; ribs rather compressed repand; prickles brown, rising from brown tomentum: each fascicle composed of 8 radiating ones, a small superior one, and 3 central ones, which are much longer than the rest. 7. D. S. Native of South America. There is hardly any wool at the top of the stem; the rest unknown. Salm-Dyck, in litt.
27 C. HAWORTHI (Spreng. syst. 2. p. 495. under Cactus) plant erect, large, 5-angled, with profound furrows; spines numerous, usually an inch long, brown. \( \gamma \). D. S. Native of the West Indies. C. nobilis. Haw. syn. 179. This species is more formidable than the rest in the prickles being very large and numerous. The rest unknown. The Cactus nobilis, Lin. Haw. and Lam. are very different from each other, and constitute 3 distinct species.

Haworthi Torch-thistle. 1811. Shrub 3 to 4 feet.
28 C. AURITUS (Salm-Dyck. in litt. ex D. C. prod. 3. p. 456.) plant erect, green, 7-8-angled; ribs compressed, very prickly; prickles yellow, rising from straw-coloured tomentum, with 8 radiating ones in each fascicle, and some central longer ones. \( \gamma \). D. S. Native country and flowers unknown. Differs from C. Haworthi, in being yellow, and in their fascicles being more closely crowded.

29 C. NIGER (Salm-Dyck. hort. dyck. cat. 1822.) plant erect, blackish, 7-angled; ribs rather compressed; prickles slender, fulvous, rising from white tomentum: with 7 radiating ones in each fascicle, the 3 lowest of these the longest, and 2 or 3 central ones, the lowest one very short. \( \gamma \). D. S. Native of South America. Cactus rufescens. Mill. dict. ed. 8.

31 C. FLAVISPINUS (Salm-Dyck. obs. bot. 1822.) plant erect, pale green, 8-10-angled; ribs rather compressed; prickles slender, yellowish, rising from white tomentum; with 8 radiating ones in each fascicle, the upper ones of these very small, and 3-4 central ones, the upper one of these erect and very long. \( \gamma \). D. S. Native of South America. Cactus Ruyéni, Mill. dict. ed. 8.

Yellow-spined Torch-thistle. Clt.? Shrub 2 to 3 feet.
32 C. CHLOEONUS (Colla. pl. rar. hort. rip. app. 2. p. 342.) plant ovate, erect, 10-angled; angles blunt; prickles pale, pellucid, middle one of each fascicle the strongest; wool very short. \( \gamma \). D. S. Native of Chili. C. Coquimbánus, Hort. but not of Molin.

Chiloe Torch-thistle. Shrub.
33 C. LITURIBRIOIDES (Haw. suppl. p. 75.) plant erect, usually 10-angled; angles strong; spines unequal, nearly naked at the base. \( \gamma \). D. S. Native of tropical America. There are 3 middle-sized spines, 2 about 2 lines long, and 1 about 7 lines long in each fascicle.

Sparge-like Torch-thistle. Clt.? Shrub 2 to 3 feet.
34 C. ROYENI (Haw. syn. p. 102.) plant erect, bluntly 9-angled; spines a little longer than the wool, from which they issue; floral tube unarmed; outer lobes acuminate, inner ones the shortest. \( \gamma \). D. S. Native of the West Indies. Cactus Royenii, Lin. spec. 668.—Royen, lugd. bat. 279.—D. C. pl. grass. t. 143. C. lanuginosus, Mill. dict. no. 7. Floral tube greenish. Calyenic lobes rufescent; inner or corolline ones the longest, acuminate, and white. Stigmas 12. Fruit red, according to Herm.

35 C. LANUGINOSUS (Haw. syn. 182.) plant erect, bluntly 8-9-angled; spines shorter than the wool from which they issue. \( \gamma \). D. S. Native of the West Indies. Herm. lugd. bat. par.

4t. 115. without a flower. C. repandus, Mill. dict. ed. 8. Cactus lanuginosus, Lin. spec. 667. The fruit, according to Herm., is red, not spiny.

36 C. REPANDUS (Haw. syn. 183. D. C. diss. t. 13.) plant long, erect, with 8-9 blunt angles; angles rather undulated; spines longer than the wool from which they issue; floral tube, and consequently the fruit, is unarmed: outer lobes of calyx narrow and much acuminated, almost exceeding the inner ones in length. \( \gamma \). D. S. Native of the Caribbean Islands. Cactus repandus, Lin. spec. 667. Ker. bot. reg. t. 336. Cereus gráculis, Mill. dict. ed. 8. no. 8.—Trew. elert. t. 14. Tube of flower green; inner calycine or corolline lobes white. Stigmas 8-10. Fruit yellow, white inside.

37 C. SUBLITEDUS (Haw. suppl. 78.) plant erect, with 8 angles; angles compressed, repand; prickles strong, of a pale colour; wool very short. \( \gamma \). D. S. Native of the West Indies. Very distinct from C. arenátes.

38 C. PÆTHERS (Haw. in phil. mag. Feb. 1830. p. 108.) plant erect, bluntly 8-angled; angles short; fascicles of spines very black, as well as the short central wool. \( \gamma \). D. S. Native of Brazil. Very like C. repándus, but much more dwarf and simple, and very green; with about 12 spines in each fascicle. This is a singular plant, from its black spines and black beard-like terminal brush.

39 C. POLYGÔNUS (Lam. dict. 1. p. 539. under Cactus) plant erect, branched, with 11 blunt angles, woolly at the apex; prickles setaceous, grey; flowers short, with the limb hardly spreading. \( \gamma \). D. S. Native of St. Domingo. Plume. ed. Burm. t. 196. Flowers white. Fruit reddish brown, tubercled; flesh reddish. Stem 10 feet high, and 6-7 inches in diameter. This species is allied to C. repándus, according to Lamarck, but Spreng: has joined it with C. gríseus.

Many-angled Torch-thistle. Shrub 10 feet.
40 C. MÁGÁNUS (Haw. in phil. mag. Feb. 1830.) plant very strong, simple, with usually 12 deep furrows, and as many ridges; spines unequal, very stiff, dark. \( \gamma \). D. G. Native of St. Domingo. Spines about 12 in each fascicle; fascicles rather distant. Flowers large, white.

Large Torch-thistle. Clt. 1829. Shrub 3 to 4 feet.
41 C. DIVARICÁTUS (Lam. dict. 1. p. 540. under Cactus) plant erect, branched, very spiny, and bluntly 10-angled; branches spreading. \( \gamma \). D. S. Native of St. Domingo. Plume. ed. Burm. t. 193. Flowers lateral, hardly known. Fruit globose, yellow, warty, large by large points, or unarmned; pulp white and sweet.

Diviaricáte Torch-thistle. Shrub.
42 C. CHLOROCAΡUS (H. B. et Künth. nov. germ. 6. p. 68.) plant erect, branched; branches fastigiate, 10-12-angled; angles tubercled; tubercles beset with starry prickles; central prickles in each fascicle 4 times longer than the rest. \( \gamma \). D. S. Native of South America.

Green-fruited Torch-thistle. Shrub 10 feet.
43 C. LÆVUS (H. B. et Künth, loc.) plant erect, pale green, jointed; joints 7-angled; angles tubercled, each tuberle furnished with a fascicle of spines. \( \gamma \). D. S. Native of Quito, near Sondorillo. The rest unknown.

Fruitful Torch-thistle. Shrub.

** Steams with 3-4 or 5 angles, very rarely with 6 angles.
prickles 8 in each fascicle, 4 of which are stiff, conical, and greyish, or blackish, 3 very short and diverging, and 1 large and horizontal. \( \text{f}. \) D. S. Native of Mexico. Coulter. Largest prickles in each fascicle 8–10 lines long, smaller ones hardly 2–3 lines long.

Green Torch-thistle. Shrub.
45 C. anisacanthus (D. C. l. c.) plant simple, erect, deep green; ribs 5–6, with the furrows and crests both acute; fascicles of spines crowded, having the areole convex and velvety white; prickles 4 to 10–20 in each fascicle, rather unequal, outer ones diverging. \( \text{f}. \) D. S. Native of Mexico. Coulter. Varieties

Unfiled

1. Simplex (D. C. l. c.) stems simple, narrow; ribs rather prominent; furrows broad and obtuse; prickles white.

2. Subarticulatus (D. C. l. c.) stem branched, a little articulated, but not rooting; ribs irregular, rather reaped; furrows narrow; prickles yellowish white young.

3. Radicans (D. C. l. c.) stems rooting; ribs broad, short; prickles yellowish white young.

47 C. grandidis (Haw. suppl. p. 76.) plant large, exactly tetragonal, simple, erect; prickles usually an inch long, divergently, almost interwoven among each other. \( \text{f}. \) D. S. Native of Brazil. The rest unknown.


49 C. paniculatus (Lam. dict. l. p. 540. under \( \text{Cactus} \)) trunk erect; branches forming a kind of panicle at the top of the trunk, tetragonal, articulated at the base; spines short, in fascicules; petals rounded at the apex. \( \text{f}. \) D. S. Native of St. Domingo, in wild places.—Plum. ed. Burm. t. 192. Flowers white, lined with red. Fruit tubercled, yellowish. Perhaps this species is referable to \( \text{Jamacaru prima} \), Maccr. bras. p. 125. \( \text{f}. \) 2. but the figure given by him is too rude to determine this point.

Panicled Torch-thistle. Shrub.
50 C. pitayaya (Jacq. amer. 151. under \( \text{Cactus} \)) trunk erect; branches tri高尔; spines in fascicules. \( \text{f}. \) D. S. Native of Carthagena, in bushy places by the sea side. Flowers opening in the night, white, 8 inches long. Fruit scarlet, shining, size and form of a hen’s egg; pulp white. Pitayaya is the vernacular name of the plant.

Pitayaya Torch-thistle. Shrub.
51 C. undulatus (D. C. prod. 3. p. 467.) trunk erect, very spiny, and as well as the branches tri高尔; spines in fascicules, black; limb of flowers spreading. \( \text{f}. \) D. S. Native of St. Domingo. Plum. ed. Burm. t. 194. Cact. Pitayaya \( \text{f}. \), Lam. dict. l. p. 559. Prickles 2 inches long. Flowers white, beautiful. Fruit greenish yellow, about the size and form of an apple; pulp white.

Undulated Torch-thistle. Shrub.
52 C. orbus (Haw. rev. p. 70.) plant erect, pale green, triangular; ribs blunt; fascicles of prickles very remote; prickles tawny, rising from brown tomentum: with 4 radiating ones in each fascicle, and a central, elongated erect one. \( \text{f}. \) D. S. Native country and flowers unknown.

53 C. jamacaru (D. C. prod. 3. p. 467.) plant erect; branches 3–4-angled; prickles in fascicles, straight, flowers cylindrical, with an erect limb; genitils inclosed. \( \text{f}. \) D. S. Native of Brazil. Jamacaru, Pison, hist. nat. bras. p. 100. f. 1. Trunk triangular, beset with spines. Flowers white, scentless. Fruit red, size of a goose’s egg. Perhaps \( \text{Jamacaru quadrata} \) species Maccr. hist. nat. bras. p. 127. f. 5. is the same or a distinct species.

54 C. validus (Haw. in phil. mag. sept. 1831. p. 418.) plant tetragonal, firm, glaucescent at the apex, with the sides nearly flat, or rather convex at first, with the angles very blunt and spiny in the middle. \( \text{f}. \) D. S. Native of South America. Spines brownish.

Strong Torch-thistle. Shrub.

§ 2. Serpentina (from serp., to creep; stems creeping and rooting). D. C. prod. 3. p. 467. Stems jointed, prostrate, rooting or twining.

* Stems with many angles.

55 C. serpentinus (Lag. anal. sc. nat. 1801. p. 261.) plant creeping, flexuous, and somewhat climbing, with 11–12 very blunt angles; bristles in fascicules, much longer than the wool from which they issue, but which at length falls off; floral tube very bristly at the base. \( \text{f}. \) D. S. Native of South America. Willd. enum. suppl. 31. Link, et Otto, abbild. t. 91. D. C. diss. t. 12. Flowers large, beautiful; lobes bluntish; outer ones greenish; middle ones purplish; inner ones white. Stigmas 7. This plant appears to hold a kind of middle station between the erect and creeping species of the genus, and rarely throws out roots from its stems. Bristles 7–8 lines long, purplish, also crowded at the base of the floral tube.

Serpentina Torch-thistle. Clt. 7. Shrub 3 to 4 feet.
56 C. tenuis (Lh. ind. sem. hort. hamb. 1827. p. 16.) plant erectish, articulated branched; joints attenuated at the base, tubercular; tubercles pressed at the apex, woolly and bearing spines; spines coated by a somewhat diaphanous, moveable membrane. \( \text{f}. \) D. S. Native of Brazil. Joints terete when young, 1½ inch long, furnished with fleshy, subulate leaves, which become at length deciduous.

Coated-spined Torch-thistle. Clt. ? Shrub ½ to 1 foot.
57 C. ambiguus (Bomp. tav. n. 36. under \( \text{Cactus} \)) plant erect, with 9–12 blunt angles; bristles spinescent, longer than the wool from which they issue; floral tube bearing bristles at the base. \( \text{f}. \) D. S. Native country unknown. Flowers very like those of \( \text{C. serpentinus} \), of which it is probably only a variety, differing only in the stem being more erect, and in the bristles being shorter.

Ambiguous Torch-thistle. Shrub 2 to 3 feet.
58 C. flagelliformis (Mll. dict. ed. 8. no. 12. Haw. syn. 158.) stems prostrate, with about 10 angles; tubercles crowded, bearing bristles; style rather shorter than the petals. \( \text{f}. \) D. S. Native of South America, and is now to be found in the Arabian deserts, but has been probably introduced there. Cactus flagelliformis, Lin. spec. 668. Curt. bot. mag. t. 17. D. C. pl. grass. 137. This species is very common in gardens, and has trailing stems, unless supported, which are therefore easily trained to any kind of trellising. The flowers are so beautiful, and are produced in such profusion, that the plant is worth being conveyed.
into the house whilst in flower, to adorn any of the rooms: they are red or pink.


59 C. le'ptopus (D. C. mem. act. in mem. mus. 17. p. 117.) plant creeping a little, cylindrical, with 7-8 very blunt, rather repand ribs; areole velvet, but convex in the adult state; prickles 12-15 in each fascicle, stiffish, yellow, radiating, having the 2 or 3 central ones erectish. η. D. S. Native of Mexico. Coulter, no. 32. Habit of C. flagelliformis, but 3 times slenderer.


60 C. Humboldtii (H. B. et Kunth, nov. gen. amer. 6. p. 66. under Cactus) stems procumbent, with 10 or 12 ribs, glabrous; angles tubercled; tubercles bearing stiff bristles; style much exceeding the corolla. η. D. S. Native about Quito, in fields between Sondorillo and San Felipe. Said to be very like C. flagelliformis. Flowers red.

Humboldt's Torch-thistle or Creeping Cereus. Shrub pr.

61 C. rososorus (H. B. et Kunth, l. c.) stems procumbent, simple, usually with 20 angles; angles bearing fascicles of bristles: style length of petals, 8-cleft at the apex. η. D. S. Native of Quito, in dry places near Nabon. According to the authors, this plant is sufficiently distinct from the foregoing. Flowers white.

Twenty-angled Torch-thistle. Shrub proc.

62 C. secundum (H. B. et Kunth, l. c.) stem erect, with 11 angles; angles bearing fascicles of prickles; stamens and style about equal in length, but exceeding the corolla a little; stigma 8-parted. η. D. S. Native of New Andalusia, near Carpe, growing on rotten wood. Very like C. flagelliformis in habit, but both the flowers and fruit are unknown, and therefore the place which it should occupy in this genus is doubtful.

Caripe Torch-thistle. Shrub creeping.

** Stems with 5 or 6 angles.

64 C. grandiflorus (Mill. dict. ed. 8. no. 11. Haw. syn. 184.) stems rooting, diffuse, creeping, 5-6-angled; bristles 5-8 in each fascicle, hardly longer than the down from which they proceed. η. D. S. Native of the West India Islands, and in many parts of the main land of South America. Cactus grandiflorus, Lin. spec. p. 668. D. C. pl. grass. t. 52. Andr. bot. rep. t. 508.—Mill. fig. t. 90.—Trew. ehret. t. 31, 32.—Volk. hesp. 1. t. 234. This species, when of sufficient strength, will produce many exceeding large, beautiful, sweet-scented flowers, like those of most of the species of very short duration, hardly continuing 6 hours full blown, nor do the flowers ever open again when once closed. They begin to open between 7 and 8 o'clock, in the evening, are fully blown by 11 o'clock, and by 3 or 4 o'clock in the morning they fade, and hang down quite decayed; but during their short continuance is hardly any flower of greater beauty, or that makes a more magnificent appearance; for the calyx of the flower, when open, is near a foot in diameter, the inside of which being of a splendid yellow colour, appears like the rays of a bright star, the outside is of a dark brown; the petals being of a pure white add to the lustre; the vast number of recurved stamens in the centre of the flower, make a fine appearance: add to all this, the fine scent, which perfumes the air to a considerable distance; there is scarcely any plant which deserves a place in the hot-house so much as this, especially as it may be trained against the wall, where it will not take up any room. The flowers make a most magnificent appearance by candle-light, sometimes there may be 6 or 8 flowers open upon one plant at the same time; and there will be a succession of them for several nights together, provided the plant is large and healthy.


65 C. spinulosus (D. C. mem. act. in mem. mus. 17. p. 117.) plant a little branched, creeping, and climbing somewhat, nearly terete, with 5-6 hardly exserted, acutish ribs, and with broad, bluish furrows; areolae, when young, velvety; prickles 8 in each fascicle, very short, stiff, when young yellowish, but afterwards becoming brownish, the lateral ones radiating. η. D. S. Native of Mexico. Coulter, no. 27. Habit of the stems like those of C. grandiflorus, but the prickles are very different.

Spinulose Torch-thistle. Shrub cl.

66 C. pentalogus (Lin. hort. cliff. p. 182.) plant erect, jointed, slender, pale green, 5-angled; ribs repand; prickles naked at the base, nearly equal, slender, straw-coloured, with 5-6 radiating ones in each fascicle, and 1 central one. η. D. S. Native of South America. Cactus pentagonus, Lin. spec. 666. Haw. syn. 180. rev. 77. Salm-Dyck. in litt. C. prismatique and C. répans, Willd. enum. suppl. 52. This is a very polymorphous species, varying with 3-4-5 angles, sometimes much compressed, and sometimes the angles are nearly obliterated. The plant never throws out lateral roots. Flowers large, white. Pentagonal-stemmed Torch-thistle. Fl. July. Clt. 1769. Shrub cl. 3 feet.

67 C. radicans (D. C. prod. 3. p. 468.) plant prostrate, jointed, pale green, with 3-5 angles; prickles stiff, slender, russet, naked at the base, with 6-9 radiating ones in each fascicle, and 1 central one, which is rather elongated. η. D. S. Native of South America. Cactus répantus, Salm-Dyck. in litt. not Willd. It differs from C. pentagonus in the stems being prostrate and rooting, not erect.

Rooting Torch-thistle. Shrub creeping.

68 C. rufus (D. C. prod. 3. p. 468.) plant jointed, divaricate, rooting, green, with 4 or 5 angles; ribs much compressed and repand; fascicles of prickles crowded; prickles about equal in length to the white tomentum from which they arise: 8-10 radiating white bristle-formed ones in each fascicle and 3 stiffish straw-coloured, central ones. η. D. S. Native country and flowers unknown. C. graciilis, Salm-Dyck. in litt. not of Haw. Plant humble, with the joints a little elongated and divaricating, deeply furrowed.

Humble Torch-thistle. Shrub.

69 C. aculeiferous (Haw. rev. 77.) plant creeping, green, with 5 angles; prickles bristle-formed, white, stellately expanded, shorter than the rufous wood from which they arise. η. D. S. Native of St. Domingo. The rest unknown.


** Stems with 3-4 angles.

70 C. quadrangularis (Haw. syn. p. 181.) plant creeping, 3-4-angled; angles hardly channelled; spines 5-7 in each fascicle, hardly stellate. η. D. S. Native of the West Indies. —Plum. ed. Burm. t. 199. f. 1. Flowers white, opening at night, beautiful, and sweet-scented.


71 C. tripteris (Salm-Dyck. in litt. ex D. C. prod. 3. p. 468.) plant jointed, erectish, rooting, green, 3-4-angled; ribs much compressed, rather repand; fascicles of spines crowded, with 8 radiating ones in each fascicle, and 3 stiffish central ones. η. D. S. Native country unknown. It differs from C. graciilis,
to which it is nearly allied, in the stems being for the most part 3-angled, rarely 4-angled, and never 5-angled, in being more erect, and in the joints being longer and broader, as if they were winged, and also in the prickles being longer.

79 C. speciosissimus (Desf. mem. mus. 3. p. 190. t. 9. under Cæcūs) plant erect, 3-4-angled; angles toothed; prickles subulate, straight, rising from white tomentum; limb of flower expanded; genitales decussate. ५. D. S. Native of Mexico. Cæcūs speciosissim. Cav. hort. madr. Willd. enum. suppl. p. 31. Cæcūs speciosissim. Ker. bot. reg. 486. herb. amat. t. 391. Flowers large, of a beautiful scarlet colour, somewhat violaceous inside. Genitales white. This is a most splendid plant when in flower, and is now very common in the gardens.

Var. β, bifrons (Haw. suppl. p. 76.) plant dwarfer, more decumbent, and throwing out more roots.


74 C. undatus (Haw. in phil. mag. nov. 1829. p. 109.) plant large, climbing, triangularly furrowed; joints large, rather lobately crenated, sometimes like a chain. ५. D. S. Native of China. Very like C. triangula, but much larger; and the branches are greener and more radicant. Fascicles of spines small.

75 C. seigin (Haw. in phil. mag. nov. 1829. p. 108.) plant erect; branches few, quadrangular; fascicles containing about 20 spines each, ४ of which are linear, radiating, and nearly equal, pale. ५. D. S. Native of Brazil. The habit of the plant is referrible to Stapelis astéras, but taller and the angles more concave; wool at base of spines short.

76 C. triquetra (Haw. syn. 181.) plant jointed, erectish, rooting, green, triangular; angles repand, with the fascicles of prickles remote; prickles rising from fuscous tomentum, rays one sessate and decidueus, central ४, stiff, short, and fuscous. ५. D. S. Native of South America. C. prismático, Desf. hort. par. Prickles dirty yellow, ४-५ lines long, rising from short tomentum. Stem 6-6 feet high, branched. Flowers unknown.

77 C. tenus (Haw. in phil. mag. feb. 1827. p. 125.) plant weak, branched, somewhat articulated, climbing and rooting; branches very slender and triangular; bristles very slender, bent, wool-formed. ५. D. S. Native country known, but probably in some part of South America. Bristles in crowded interwoven fascicles along the angles of the stems, which they hide. Perhaps the same as C. Mosquisus.

78 C. tris (Haw. syn. 181.) plant creeping, triquetrous; angles hardly channelled; prickles ५-७ in a fascicle, stellate. ५. D. S. Native of the West India Islands. Cæcūs triquetra

β, Haw. misc. nat. 199.—Plum. ed. Burm. t. 200. f. 2. Cæcūs triangula. Foliolous, Jacq. amer. 152. ex Lam. dict. t. 1. p. 541. Flowers white (ex Plum.) and the fruit of a violaceous scarlet colour; but the fruit, according to Jacquin, is of a shining scarlet colour; there are therefore probably two species confused under this name.

79 C. prismático (Salm-Dyck. in litt. but not of Wildl. ex D. C. prod. 3. p. 469.) plant articulated, erectish, rooting, green, triangular; ribs repand; fascicles of prickles crowded; prickles nearly equal, fuscous, rising from fuscous tomentum, ५ radiating ones and २ or ३ central ones in each fascicle. ५. D. S. Native country unknown. Plant slenderer and more humble than C. triquetra; prickles smaller and more numerous; and the fascicles are more crowded.

80 C. cocceivus (Salm-Dyck. in litt. ex D. C. prod. 3. p. 469.) plant with long joints, rooting, green, triangular; ribs compressed, repand; prickles rising from violaceous tomentum; radiating ones pilose, white, and ५ rather recurved, stiff, fuscous, central ones in each fascicle. ५. D. S. Native of Brazil, among rocks on the mountains. Flowers said to be numerous, large, and scarlet.

Scarlet-flowered Torch-thistle. Clt.? Shrub cr.
81 C. ex trinwus (Salm-Dyck. in litt. ex D. C. l. c.) plant with long joints, rooting, green, triangular; ribs much compressed, repandly crenated, furnished with an ovate acute scale, and numerous white hairs in the crenatures. ५. D. S. Native of Brazil. This is a very singular plant, with the sides of the joints 2 inches broad, and ५-toothed at the angles, and for the most part margined with red; teeth as in Stapelis, furnished with a hairtless scale or leaf. Flowers small, solitary, when dry persistent, yellow; petals 6-8, acute. Style filiform, ५-७ at the apex. Fruit unknown.

Scaly Torch-thistle. Clt.? Shrub 1 to 2 feet.
82 C. squamulosis (Salm-Dyck. in litt. ex D. C. l. c.) plant erect, jointed, rooting a little, green, triangular; ribs much compressed, repandly crenated, furnished with an ovate acute scale, and numerous white hairs in the crenatures. ५. D. S. Native of Brazil. This is a very singular plant, with the sides of the joints 2 inches broad, and ५-toothed at the angles, and for the most part margined with red; teeth as in Stapelis, furnished with a hairtless scale or leaf. Flowers small, solitary, when dry persistent, yellow; petals 6-8, acute. Style filiform, ५-७ at the apex. Fruit unknown.

Scaly Torch-thistle. Clt.? Shrub 1 to 2 feet.
83 C. mesuri (Salm-Dyck. in litt. ex D. C. l. c.) plant jointed, erect, rooting a little, deep green, triangular; ribs rather compressed, somewhat repand; hairs rising from white tomentum, with ५-७ radiating ones in each fascicle, and in the middle of each fascicle is a central soft prick. ५. D. S. Native of Brazil.

Bristly Torch-thistle. Clt.? Shrub 1 to 2 feet.
84 C. myosurus (Salm-Dyck. in litt. ex D. C. l. c.) plant rather articulated, erect, rooting a little, slender, margined with red, ३-४-angled; ribs crenated, furnished with penicil-like fascicles of white hairs at the crenatures. ५. D. S. Native of Brazil. Sides of stems hardly ५ lines broad. Pilī long erect, especially on the young branches. The rest unknown.

Mouse-tail Torch-thistle. Shrub.
85 C. tenus (Salm-Dyck. in litt. ex D. C. l. c.) plant low, climbing, acutely trigonal, with some roots issuing from the sides; hairs in fascicles along the angles, elongated, soft and adpressed; flowers sessile, usually with ५ sepals and ५ petals. ५. D. S. Native of Brazil. Cæcūs tenuis, Schott. ined. Flowers small, rose-coloured, hardly open, rising from among the fascicles of hairs; tube very short.

Z
§ 3. Opuntiaceae (Plants having the habit of Opuntia). D. C. prod. 3. p. 470. Stems composed of globose joints, the surfaces from diverging prickles. Flowers tubular. Style much exerted, multifid at the apex. Perhaps a proper genus, intermediate between Cactus and Opuntia?


Necklace-formed Torch-thistle. Shrub procumbent.

87 C. serpens (H. B. et Kunth, nov. gen. amer. f. p. 68. under Cactus) plant creeping, branched, rather angular; areoles 6-angled, prickly at the apex; flowers tubular. D. S. Native of Quito, on dry hills on the banks of the river Guaneacamba, near Sondorillo. Flowers flesh-coloured; petals 8–12, acute; stigmas 8, approximate. Perhaps a species of Opuntia.

Creeping Torch-thistle. Shrub cr.

88 C. nanus (H. B. et Kunth, l. c. under Cactus) plant creeping and jointed; joints terete, rather compressed, areolate, prickly, a little branched. D. S. Native of Quito, near Sondorillo, on the banks of the Guaneacamba. The rest unknown.

Dwarf Torch-thistle. Shrub proc. 2 to 3 inches.

89 C. gracilis (Haw. in phil. mag. Feb. 1827. p. 126.) plant erectish, nearly terete; old spines solitary, straight, an inch long, but at first twin or more, white. D. S. Native of South America. Plant with the habit of Euphorbia hookeriana, but less spiny and the spines shorter. It appears to be more nearly allied to C. nanus than to any other species.

Weak Torch-thistle. Clt.? Shrub.

† The following species are in the gardens, but nothing is known of them but the names.

1 C. rosaceus, Hort. berol. 2 C. Déppii, Hort. berol. 3 C. incrustatus, Hort. berol. 4 C. cxérenS, Hort. berol. 5 C. affinis, Hort. berol. 6 C. proteliformis, Hort. par. 7 C. Colvillei, Sweet. 8 C. ovatus, Gill. (under Cactus). 9 C. polyanthophus, Gill. (under Cactus).

Cult. The same kind of soil recommended for Mamillaria, p. 160. will answer the species of this genus; and they are easily propagated by cuttings, which if left to lie a few days after being separated from the mother plant, strike root readily. In order to have several species on one tree, insert them in a plant of Pereskia.


Lin. syn. Acanthaceae, Monogynia. Tube of corolla very long, middle-sized, or very short, furnished with remote, unarmed scales, rising from the crenatures of the branches, among small innocuous spines. Limb of corolla fugacious, deeply multifid, and as if it were polypetalous, rosaceous or more or less of a ringent form. Branched, slender, hardly climbing subshrubs, natives of South America, growing among rocks or on the trunks of old trees; branches much compressed, 2-edged, thin but fleshy, lobately crenated, green, smooth; with a slender, woody, central axis. Flowers solitary, usually large and showy, white, rose-coloured, or scarlet, rarely sweet-scented.

The branches towards the roots are rather angular. The rest in Céucus, of which perhaps it is merely a section.

Sect. I. Nocturna (from nocturnus, nightly, or in the night; in reference to the time at which the flowers expand). Haw. in phil. mag. aug. 1829. p. 107. Corollas fugacious, sweet-scented, white, expanding alone at night; tube very long.

1 E. phyllanthus (Haw. syn. 197.) corolla small, much shorter than the tube, which is nearly a foot in length; stigmas 10. D. S. Native of South America, in Brazil, Guiana, and Surinam, Guadalupe, &c. Cactus phyllanthus, Lin. spec. 670. D. C. pl. grass. t. 145. Opuntia phyllanthus, Mill. dict. no. 9. Céucus phyllanthus, D. C. prod. 3. p. 469.—Dill. elth. t. 64. f. 74. Flowers white, 9–12 inches long, expending at night, sweet-scented.


2 E. Hookeri (Haw. l. c.) corolla middle-sized, much shorter than the tube, which is about half a foot long; stigmas usually 13. D. S. Native of South America. Flowers white, sweet-scented. Cactus phyllanthus, Hook. bot. mag. 2692.

Hooker's Epiphyllum. Fl. June, July. Clt.? Sh. 2 feet.

Sect. II. Diurna (from diurnus, belonging to the day-time; in allusion to the time of the blossoms expanding). Haw. in phil. mag. aug. 1829. Corollas scentless, open day and night; tube middle-sized or very short.


4 E. Vandesi (Hort.) branches flat or striguetous, with no spines in the notches, except when young, when there are a few small ones at the base; branches rather convex. D. S. A hybrid raised in the garden of the Count de Vandes at Bayswater, from the seed of E. phyllanthoideus, impregnated by the pollen of Céuces speciosissimus. The flowers are large, and of a deep red colour, and, upon the whole, it may be considered the most splendid of the genus.


5 E. Jenkinsonii; branches round or striguetous at the base, but always flat at the apex, with the notches more prominent and spiny than in any other species of the genus; the branches are likewise more convex and firm. D. S. A hybrid, raised from the seeds of Céucus speciosissimus, impregnated by the pollen of Epiphyllum speciosissimum. Cactus Jenkinsonii, Hort. The flowers of this hybrid are large, and of a deep scarlet-colour, and are said even to outvie in splendour those of E. Vandesi. There are several other hybrids now in various gardens, raised from the same parents as the present plant, which may prove even superior in splendour to any of the genus, but they have not yet flowered.


6 E. oxypletnum (Haw. l. c.) tube of flower length of the acuminated lobes; flowers sessile; fruit nerves longitudinally.
Native of Mexico. Cereus subquadriflorus, Moc. et Sesse, fl. mex. icon. incd. This is an anomalous species, as from the stems it agrees with Cereus tuberculatus, and from the rotate flowers it agrees with Opuntia. Flowers flesh-colored. Fruit white. Leaves terete, acute, soon falling off.

Rose-coloured Indian-fg. Shrub 2 to 3 feet.


3 O. Imbrica'ta (D. C. prod. 3. p. 471.) plant erect, terete, not furrowed, but superficially ribbed, and rather lobe-formed, somewhat imbricately tesselated in various ways. η. D. S. Native country and flowers unknown. Cereus imbricatus, Haw. rev. 70. Allied to O. cylindrica, but more robust according to Haworth, but according to the Prince de Salm-Dyck it is slenderer.

Imbricate-tesselated Indian-fg. Clt. 1820. Shrub 2 to 3 feet.

4 O. Stapel'iae (D. C. mem. cact. in mem. mus. 17. p. 117.) plant branched, irregularly tufted, deep green; joints ovate or oblone; areole small, tomentose in the axils of the tubercles; prickles 5-6 in a fascicle, stiff, straw-colored, setaceous, when old the epidermis or coat separates from them. η. D. S. Native of Mexico. Coulter, no. 38. Stem hardly an inch high. Habit almost of Stapelia cerniata, but which is without prickles.

Stapelia-like Indian-fg. Clt. 1830. Shrub 1 to 2 inches.

5 O. Extui'vata (D. C. l. c. p. 118.) plant branched, erect, nearly terete; branches furnished with compressed tubercles, and irregular crests, so as to make them nearly pentagonal; areole orbicular, velvety at the axils of the tubercles; prickles 6-12 in a fascicle, stiff, straight, when old the epidermis separates from them. η. D. S. Native of Mexico. Coulter, no. 18. Cactus tunicatus, Hort. berol. ex Salm-Dyck. Trunk a foot high, and 18 inches thick.

Var. β, angú'stior (D. C. l. c.) trunk slenderer; prickles fewer; areole narrower. Coulter, no. 17.

Var. γ, spinò'sior (D. C. l. c.) stem dwarf; prickles longer and more numerous, and more spine-like.

Stripped Indian-fg. Clt. 1830. Shrub 1 foot.

6 O. decipi'ens (D. C. l. c.) plant erect, branched, green; branches cylindrical, attenuated at the base; tubercles few, spirally disposed; areole small; prickles of two forms, the lower one large and spreadingly deflexed: the rest, 3-5 in number, bristle-formed and radiating. η. D. S. Native of Mexico. Coulter, no. 20. Leaves small, ovate-oblong, deciduous. Large prickles an inch long, who the epidermis separates from it. The rest 1-2 lines long. Compare it with O. cylindrica.
Deceiving Indian-fig. Clt. 1830. Shrub 2 to 3 feet.
7 O. Kleine (D. C. l. c.) plant erect, branched, greyish green; branches erect, cylindrical, without tubercles; fascicles disposed in a spiral manner to the left; areolae velvety; prickles of two forms, with numerous bristle-formed whitish brown ones in each fascicle, and one large spreadingly deflexed slender white one at the lower side of the fascicle. h. D. S. Native of Mexico. Coulter, no. 21. Stem more than a finger in thickness, like the stem of Cacalia Kleinei. Leaves small, oblong, deciduous. Large prickles an inch long.
Kleinia-like Indian-fig. Shrub 1 to 2 feet.
8 O. leptocaulis (D. C. l. c. p. 119.) plant erect, branched; branches cylindrical, erect, without tubercles; fascicles disposed in spiral lines to the left; areolae rather tomentose; prickles of two forms, the 3 lower ones in each fascicle setaceous, blackish, spreadingly deflexed, the rest bristly, crowded, and rufescent. h. D. S. Native of Mexico. Coulter, no. 22. Stem the thickness of the small finger. Referrible to the preceding species.
Slender-stemmed Indian-fig. Shrub 1 to 2 feet.
9 O. leucotricha (D. C. l. c. p. 119.) joints oblong, erect, when young velvety; areolae when young convex, velvety; prickles of two forms, 2 or 3 of which in each fascicle are very long, setaceous, unarmed, white, and spreading, and 4-5 very small, bristle-like, straight, yellow ones. h. D. S. Native of Mexico. Coulter, no. 2. Larger prickles 10-12 lines long. Intervals between the fascicles of bristles distant.
White-haired Indian-fig. Shrub.
10 O. Orronis (Link et Otto, pl. rar. hort. berol. t. 16.) stem nearly cylindrical, with 12 bluish ribs; the 3-4 middle spines in each fascicle are erectish, slender, brownish, longer than the rest, which are 10-14 in number, very slender, and spreading; petals acute, rather serrulatus, cuspidate. h. D. S. Native of Brazil. Otto's Indian-fig. Shrub.
11 O. pulvinata (D. C. c. l. c.) joints oval, erect, velvety; areolae convex, pulvinate, the whole occupied by innumerable, straight, crowded, yellow, fragile bristles, without any true prickles intermixed. h. D. S. Native of Mexico. Coulter. A very distinct species. O. macrodasy, Lehmann. hort. hamb. ex Salm-Dyck in litt.
Pulvinata Indian-fig. Shrub.

Sect. II. Divaricatae (from divaricatus, divaricated; branches). Haw. syn. 195. Stems humble; branches diverging; joints linear-lanceolate, thick, nearly terete. Prickles strong, in fascicles.
12 O. longispina (Link et Otto, hort. berol. Haw. in phil. mag. Feb. 1830. p. 109.) joints compressedly terete; spines puberulous, some of them small and fulvous, and a slender terete one (which is when full grown 3 inches long) in each fascicle. h. D. S. Native of Brazil. Long-spined Indian-fig. Clt. 1829. Shrub.
13 O. glomerata (Haw. in phil. mag. Feb. 1830. p. 110.) branches disposed in crowded tufts; central spines solitary in each tuft, linear, acuminate, flat on both sides, very long. h. D. S. Native of Brazil. Branches thick, teretely lanceolate, greenish, hardly half an inch broad.
14 O. foliosa (Salm-Dyck in litt. ex D. C. prod. 3. p. 471.) joints compressed, branched, pale green, when young leafy, when old prickly; prickles 1-2, elongated, pale straw-coloured, rising from yellowish tomentum. h. D. S. Native of South America. O. pusilla, Haw. syn. 195. but not of Salm-Dyck. Cactus foliosa, Willd. enum. suppl. 32. Flowers almost like those of O. vulgaris. Calyx of 5 sepals. Petals 8-10, yellow. Stigmas 3-4, white.

Leafy Indian-fig. Fl. June. Clt. 1805. Shrub 
1/2 to 1 foot.
15 O. curassavica (Mill. dict. no. 7. Haw. syn. 196.) plant erect; joints brittle, cylindrically ventricose, compressed, very much divaricated, deep green; prickles 1-4 in each fascicle, whitish. h. D. S. Native of Curassao. Bradd. succ. t. 4. Cactus Curassavicus, Linn. spec. 670. Flowers yellow, an inch and a half in diameter. Stigmas 3-5.

Var. \( \beta \), longa (Haw. rev. p. 71.) branches more firm, and twice the length of those of the species. h. D. S. Native of Brazil. Perhaps a proper species. There are several other varieties mentioned by Haworth, but they appear to have sprung more from the state of the plants, and the manner of culture.

16 O. fraxinella (Nutt. gen. amer. 1. p. 296. under Cactus.) joints short, oblong, nearly terete, fragile, doubly spinose; fruit dry and prickly. h. H. Native of North America, in sterile places about the river Missouri. Flowers small, yellow, solitary on the tops of the branches. Truly distinct from all the rest, and will perhaps form a distinct section along with two other unpublished species, which are now growing in the garden of the Prince de Salm-Dyck.

Brillte Indian-fig. Clt. 1814. Shrub 1/2 to 1 foot.
17 O. fusilla (Salm-Dyck, obs. bot. 1822. et in litt. 1827.) plant prostrate, divaricate, of a dirty-green colour; joints cylindrical, cuculliferous; fascicles of prickles crowded; prickles setaceous, white, rising from white tomentum, 1 or 2 in each fascicle are more elongated than the rest. h. D. S. Native of South America. Joints rather attenuated at the apex.
Small Indian-fig. Clt. 1817. Shrub prostrate.

Sect. III. Grandispinoae (from grandis, great, and spinosus, full of spines; in reference to the prickles being large and numerous). Haw. syn. 195. Joints compressed, ovate or obovate. Prickles variable, the smaller ones setaceous, and the larger ones much longer and stronger.
18 O. missouriensis (D. C. prod. 3. p. 472.) joints broad, nearly orbicular, very prickly; prickles of 2 forms, larger ones radiating and permanent; flowers numerous; fruit dry and prickly. h. H. Native of North America, in arid places about the Missouri, plentiful. Cactus ferox, Nutt. gen. amer. 1. p. 296. but not of Willd. O. polycantha, Haw. rev. p. 82. Larger than O. vulgaris. Flowers pale yellow, or sulphur-coloured. Stigmas 8-10, greenish. Prickles white.

Missouri Indian-fig. Fl. June, July. Clt. 1814. Sh. 1 ft.
19 O. ferox (Haw. suppl. p. 82.) joints oblong, elongated; prickles strong and setaceous, numerous, whitish, in fascicles, longer than the wool from which they issue, one of which in each fascicle is longer than the rest. h. D. S. Native of South America. Cactus ferox, Willd. enum. suppl. p. 35. but not of Nutt. The rest unknown.

Fierce Indian-fig. Clt. 1817. Shrub 2 to 3 feet.
20 O. spinosissima (Mill. dict. ed. 8. Haw. syn. 193.) joints oblong; prickles yellowish, setaceous, and subulate, very numerous, in fascicles, longer than the wool from which they issue. h. D. S. Native of Jamaica. Cactus spinosissimus, Lam. dict. 1. p. 537. Flowers yellow.

Very-spiny Indian-fig. Fl. July. Clt. 1732. Sh. 6 to 10 feet.
21 O. horrida (Salm-Dyck in litt. ex D. C. prod. 3. p. 472.) plant erect; joints cuneately obovate, repand, tubercled; fascicles of prickles remote; prickles of various forms, yellow, painted with brown, rising from setaceous yellow tomentum, one in each fascicle longer than the rest, about 2 inches in length. h. D. S. Native of South America. O. humilis, Haw. syn. 189. Cactus humilis, Haw. misc. 187. but the name is deceitful, the plant growing to a considerable height. Flowers yellow.
Perhaps Cactus hümílis, Lag. nov. spec. is different from this. The plant often occurs in the gardens under the name of O. Túna. Horrid Indian-fg. Fl. July. Clt. 1735. Shrub 1 to 3 ft. 22 O. Dilleñi (Haw. suppl. p. 79.) plant erect; joints roundish-ovate, undulated, glaucous; prickles strong, divaricated, yellow, but the brush-like bristles by which they are surrounded are much shorter. тяж. D. S. Native of South America. —Dill. elth. f. 382. Cactus Dillénni, Ker, bot. reg. 255. Flowers large, pale yellow. Ovarium shorter than the corolla, furnished at the summit by fascicles of bristles.

Dillenii's Indian-fg. Fl. Oct. Clt. 1810. Sh. 3 to 5 ft. 23 O. Téna (Mill. dict. no. 3. Haw. l. c.) plant erect; joints broadly ovate-oblong; prickles subulate, long, yellow; wool at the base of the spines short. тяж. D. S. Native of South America. Cactus Bonplandii, H. B. et Kunth, nov. gen. amer. 6. p. 69.—Dill. elth. 386. t. 295. f. 386. Flowers of an orange-colour, or iron grey-colour, or dirty red. Stigmas 8-10-eleft. This kind of Indian-fg makes strong fences. When the Island of St. Christopher was to be divided between the English and the French, three rows of the Tuna were planted by common consent between the boundaries. Sloane. Sir James Smith, in his paper upon the irritability of vegetables, informs us that the long and slender stamens of the flower are very irritative; and that if a quill or feather is thrust through them, in the space of 2 or 3 seconds they begin to lie down gently on one side, and in a short time become recumbent at the bottom of the flower. According to Humboldt and Bonpland the fine kind of cochineal is nourished by this plant.


Blackish Indian-fg. Fl. Aug. Clt. 1795. Sh. 2 to 3 feet. 28 O. Máxima (Mill. dict. ed. 8. no. 5.) plant erect; joints ovate-oblong, very thick; spines unequal. тяж. D. S. Native of South America. Perhaps the same as O. Amyclea.

Greatest Indian-fg. Shrub 6 to 8 feet. 29 O. Triacén (Willd. enum. suppl. under Cactus,) joints ovate-oblong; prickles whitish, usually 3 together, strong, longer than the wool from which they issue. тяж. D. S. Native of South America. Very nearly allied to O. polyantha ex Salm-Dyck in litt. but the joints are a little larger, and the prickles are white. Flowers unknown.

Three-spined Indian-fg. Shrub 2 to 3 feet.

Sect. IV. Parvispinosæ (from parvus, small, and spinosus, full of spines; in reference to the spines being small, equal, and numerous). D. C. prod. 3. p. 473. Prickles uniform, hair-shaped, short or nearly wanting.

30 O. decumána (Haw. rev. 71.) joints ovate-oblong; prickles deciduous, length of the wool from which they issue. тяж. D. S. Native of South America. Cactus decumánum, Willd. enum. suppl. 34. O. máxima, Mill. dict. ed. 2. no. 5. Cactus elongáthus, Willd. enum. suppl. 34. There are varieties of this plant with either ovate or lanceolate-oblong joints, almost unarmured or furnished with some white prickles. Flowers yellow. The cochineal bug thrives almost as well on this species as on the next.


Of the particular species of Opúntia which nourishes the cochineal insect much doubt has existed. There is some reason to believe that the Opúntia cochinillifera, Haw. Cactus, Lin is not the plant which produces the best Mexican cochineal. Tolila, on the authority of well informed travellers, states that the cochineal Cactus has no spines, and a fruit imbued with deep red pulp. Clavigero, however, says, "In Misteca, where I was for five years, I always saw the insect upon prickly Nopals. M. de Raynal imagines that the colour of the cochineal is to be ascribed to the red fig on which it lives; but that author has been much misinformed, for does the cochineal feed upon the fruit, but only upon the green part of the plant; nor does that species of Nopal bear red, but white figs. Clavigero adds, "it may be reared upon the species with red fruit, but that is not the proper plant of the cochineal." M. Thierry de Menonville, who procured the cochineal insect, and the Opúntia on which it feeds from Guaxaca in Mexico, and transported them to St. Domingo, and who unquestionably had the best means of determining the kinds of Cacti cultivated for the insect, describes particularly 3 sorts on which it may be reared, and cultivated to advantage. The first is the Cactier Nopal, upon which alone the cochineal is reared in Mexico, both the fine and the common sorts, although there are throughout the country many other kinds of Opúntia. The two following, therefore, it is presumed are employed in St. Domingo. 2. The Cactier splendide, which may be used to equal advantage with the former; and 3. The Cactier de Campeché. Of these the first, as far as can be determined by description, is the Cactus Túna of Lin. which is the Opúntia Túna of Mill. The second appears to be very similar to the former, but larger in its joints, and very glaucous. The third is without doubt the Cactus cochinillifera, Lin. and which he says of it from his own experience, that it may be usefully employed for rearing the Cochillea sylvestre, and may even support a small quantity of the fine kind. Humboldt also, although
he allows that it is the plant upon which the cochineal has often been sent to Europe, asserts that our Opuntia cochinchinifera is not the individual of the Mexican Nopaleries, which he makes a new species under the name of O. Bonplandii, and he quotes under it a mark of doubt the Cactus Tuno of Lin. At Rio Janeiro, when that place was visited by the Chinese embassy under Lord Macartney, there were considerable plantations of Cactus Tuno, now Opuntia Tuno, for rearing the cochineal, which had sometime previously been introduced to Brazil. In St. Vincent the Rev. L. Guilding has a considerable nursery of the Opuntia cochinchinifera inhabited by thousands of the true cochineal; and he is in expectation of sending to the Society of Arts a large quantity of the dried insects. From all that has been said it may be inferred with safety that in Mexico and Brazil the Opuntia Tuno or Bonplandii is the favourite food of the cochineal; and that in the West Indian Islands, where O. Tuno is perhaps less frequent, the O. cochinchinifera is employed by the natives, and answers the purpose sufficiently well.

Like all the species of Opuntia, the plants propagate readily by having the joints stuck into the ground, and the plants love dry and barren spots. If cultivated for the purpose of rearing the cochineal, it must be defended, at least in the rainy Island of St. Vincent, from storms and winds, by sheds placed to windward.

The cochineal insect, which feeds upon the kinds of Opuntia just mentioned, is too well known to need a particular description here; as are also its valuable properties in producing the dye which bears its name, and carmine. It is the Coccus cacti of Linnaeus, a small insect of the order Hymenoptera, having a general appearance not very dissimilar to that of the mealy-bug of our gardens, and equally covered with a white powdery substance. The male is winged. It is originally a native of Mexico, and was cultivated for its precious dye long before the conquest of that country; and these plantations, called Nopaleria, are most extensive in the Misteca and Oaxaca; the latter district alone has exported, according to Humboldt, upon the average 32,000 arobas annually, estimated at 2,400,000 piastrés, above 500,000£ sterling.

In Sloane's Jamaica, vol. 1. t. 9., a representation of a Mexican Nopaleria is given from a drawing made at Guayaxca, by an Indian. In these small plantations or enclosures they cultivated either the fine sort (Granna fina of the Spaniards), or the common kind (Granna sylvestre), which differ by the first having a finer quality and more powdery covering; whilst the latter, less valuable in its produce, has a cottony covering; but whether these two insects be specifically distinct has not yet been determined. The placing of the females, when big with young, is called sowing. The proprietor of a Nopaleria buys in April or May the branches of joints of the Tunas de Castilla (Opuntia Tuno), which are sold in the market of Oaxaca at about 3 francs a hundred, loaded with young cochineals (semlilla). These are kept in cellars for 20 days, when they are exposed to the air, suspended under a shed. So rapidly then is the growth of the insect, that by August or September the females are big with young, and ready for sowing, which is done in small nests, made of the fibrous parts of the foliage of a Tillandia called Paxte. In four months from the time of sowing the harvest commences. The insects are brushed off with a squirrel's or deer's tail by women, who sit during this operation, for whole hours at one Nopal plant; so that were it not for the extreme cheapness of labour in that country, Humboldt says, that the rearing of the cochineal would prove an unprofitable employment. After being gathered, the insects are killed by boiling water, or by exposing them in heaps to the sun, or by means of the vapour baths of the Mexicans (temazcalli); and when dry they are fit for exportation. By the latter method, the powdery substance is preserved, which increases the value of the insects in commerce. Dr. Bancroft has estimated the annual consumption of cochineal in Great Britain only at about 750 bags or 150,000 lbs, worth £275,000. "a vast amount," as the authors of the introduction to Entomology observe, "for so small a creature, and well calculated to show us the absurdity of despising any animals, on account of their minuteness." According to the same writers, the only kind of cochineal that has been conveyed to the East Indies is the sylvestre or wild cochineal from Brazil, and the Court of Directors of the East India Company have offered a reward of 6,000£ to any person who should introduce the more valuable sort. The insects were introduced to the royal gardens at Kew in 1814 from Martinico, by M. Castlenuae d'Auros, late superintendent of the botanic garden on that island. In 1820, the cochineal was introduced to the Apothecaries' botanic garden at Chelsea by W. Princep of Calcutta, from some of the Nopaleria of Mexico.


32 O. Ficus-Indica (Haw. syn. p. 191.) joints ovate-oblong, obtuse at both ends; prickles setaceous, length of the wool from which they rise. D. S. Native of South America. Cactus Ficus Indica, Lin. spec. 670. Wild, even suppl. 54. Joint a foot long. Prickles all setaceous, and very short. Flowers sulphur-coloured. Fruit large, edible, deep purple. This is the most common kind of Indian-fig in Jamaica, and upon the fruit of it a wild kind of cochineal feeds. The plant is to be found in many parts of Asia, but has perhaps been transplanted thither.


33 O. F. Tuno (Salm-Dyck, obs. bot. 1822. et in litt. 1827.) plant erect, branched, light green; joints obovate, compressed, large, thick; fascicles of prickles distinct; prickles yellow, setaceous, collected into brush-like heaps: lower one of each heap strong, and subulate. D. S. Native of South America. Allied to O. Ficus-Indica, but more shining. This species occurs often in gardens under the name of O. Tuno.

False-Tunone. Shrub 2 to 3 feet.


Tomentose Indian-fig. Clt. 1820. Shrub 2 to 3 feet.

35 O. lancerolata (Haw. syn. 192.) plant erect; joints lanceolate; spines uniform, very short. D. S. Native of South America. Cactus lancerolatus, Haw. misc. p. 188. Leaves larger in this species than any of its allies, generally they are more than 3 lines long. Flowers 4 inches in diameter, of a shining yellow-colour. Stigmas 5, sulphur-coloured.


36 O. tuberculata (Willd. enum. suppl. p. 34. under Cacti,) joints ovate-oblong, attenuated at both ends; tubeerec spiny; prickles setaceous, about equal in length to the wool from which they rise. D. S. Native of tropical America. Haw. rev. p. 80. The rest unknown.

Warted Indian-fig. Clt. 1818. Shrub 1 to 2 feet.

37 O. intermis (D. C. prod. 3. p. 473.) plant strictly erect; joints fleshy, ovate-elliptic; spines uniform, very short, hair-formed, very numerous. D. S. Native of South America. Cactus Opuntia, D. C. pl. grs. no. 193. with a figure. Cactus strictus, Haw. misc. 188. but not of Willd. O. stricta, Haw. syn. 191. Flowers yellow on both sides, spreading.
Unarmed Indian-fig. Fl. July, Aug. Clt. 1796. Sh. 2 to 3 ft. 38 O. Amūle'a (Tenore, fl. neap, append. 3. p. 15.) joints orbicular or elliptic, very broad, flat, compressed; prickles strong, diverging, white, without any wool at their base.  h. F. Native of the kingdom of Naples, near Amylea, and at Monticelli and Portella, on calcareous rocks. Joints 10 inches broad, and 15 inches long. Prickles 6-18 lines long, but sometimes wanting altogether. Flowers yellow. Fruit reddish yellow. Perhaps the same as O. máxima, Salm-Dyck.

Amylea Indian-fig. Shrub 2 to 4 feet. 39 O. Rubescens (Salm-Dyck in litt. 1827. ex D. C. prod. 3. p. 474.) plant erect; joints elongated, compressed, reddish green, somewhat tuberculately areolate, unarmed; leaves small, reddish, at the base of the white of theomentum.  h. D. S. Native of Brazil. This plant is very showy when young, being of a reddish-colour, and the stem flat and elongated, nearly as in O. spinosissima, but absolutely without spines.

Reddish Indian-fig. Shrub 1 to 2 feet. 40 O. cra’ssa (Haw. suppl. p. 81.) plant erect; joints ovate or oblong, very thick, full of a fleshy substance; fascicles of bristles minute, unarmed, yellowish.  h. D. S. Native of Mexico.


Common Indian-fig or Prickly-pear. Fl. July, Aug. Clt. 1596. Shrub ½ to 1 foot, but usually prostrate and rooting. 42 O. Hernándezii (D. C. diss. t. 16.) plant erect; joints thick, roundish-ovate, nearly unarmed; flowers expanded; stamens shorter than the style and petals.  h. D. S. Native of Mexico. Cactus cochinillifera, Moc. et Sesé, fl. mex. icon. ned. Nopal Nochita, Hern. mex. 78. with a figure, and 489. f. 1. Nopal sylvestre, Thierry-Menon. voy. Guáx. 2. p. 277. with a figure. According to Thierry, the flowers on the same plant vary from purplish to rose-colour, and greyish lilac. The cochineal thrives well on this species.

Hernández’s Indian-fig. Clt. 1827. Shrub 1 foot.


43 O. Brasiliensis (Willd. enum. suppl. 33. under Cactus) stem terete; joints of branches compressed, flat, ovate; spines strong, solitary.  h. D. S. Native of Brazil. Cactus paradoxo, Horn. hort. hafn. 2. p. 443.—Hoffm. verz. 1826. p. 75. Pis. bras. p. 100. f. 2. Flowers yellow.

Brazilian Indian-fig. Fl. Jul. Aug. Clt. 1816. Sh. 4 to 6 ft. 44 + The following species are only known by name, not having been described.

1 O. leuconpta, Hort. berol. 2 O. aláta, Hort. berol. 3 O. myriacantha, Hort. berol. 4 O. subinérnis, Link. 5 O. sulphúrea, Gill. (under Cactus). 6 O. sericea, Gill. (under Cactus).

Cult. The species of Indian-fig are of very easy culture: the soil recommended for Mammillaria will suit them; and in order to propagate them, the branches should be separated at the joints, and allowed to lie a few days to dry after being so separated, and when stuck into the earth they will soon strike root.


Lin. syn. Icosándria, Monogyñia. Sepals numerous, adnate to the ovary, and often remaining on the fruit, leaf-formed. Corolla rotate, nearly as in Opúnita. Stamens numerous, much shorter than the petals. Style filiform; stigmas collected, in a spiral manner. Berry globose or ovate. Seeds imbedded in the pulp.—Shrubs or trees. Branches terete. Prickles solitary at the axils of the leaves, and in fascicles on the stem. Leaves distinct, flat, larger than those of any other genus in the present order. Flowers somewhat panicked, solitary, terminating the branches, or rather lateral.—Perésscia, Thierry-Menon. voy. guáx. 2. p. 275. is probably a species of Opúnita.

1 P. aculea’ta (Mill. dict. Haw. syn. 198.) leaves elliptic; prickles solitary, in the axils of the leaves, but becoming at length in fascicles on the stems; flowers rather panicked; fruit globose, bearing the foliaceous sepals.  h. D. S. Native of the West Indies, where it is called American or Barbadoes Gooseberry by the inhabitants, and by the Dutch Blood-apple. Plum. gen. t. 26.—Dill. hort. elth. t. 227. f. 294. Cactus Perésscia, Lin. spec. 671. Prickles half an inch long. Buds rather woolly. Flowers white. Fruit yellowish, edible.


Long-spined Barbadoes-gooseberry. Shrub 4 to 6 feet. 3 P. Ble’s (H. B. et Kunth, nov. gen. amer. 6. p. 69.) leaves oblong, acuminated; prickles axillary, 5-6 in a fascicle; flowers 2-4 together at the tops of the branches, each on a short peduncle; petals obovate, retuse.  h. D. S. Native of New Granada, on the banks of the river Magdalena, near Badilla, where it is called Bleo by the inhabitants. Lindl. bot. reg. 1173. Flowers pale red. Stamens also red, but white at the base. Stigma 5-7-cleft.

Bleo Barbadoes-gooseberry. Fl. Oct. Jan. Clt. 1827. Pl. 8 to 10 feet. 4 P. nóráida (H. B. et Kunth, l. p. 70.) leaves oblong, acute at both ends; spines 1-3 together, subulate, in the woolly axils of the leaves; flowers 2-5 together, axillary, pedunculate, rising above the spines.  h. D. S. Native of South America, in the province of Jaén de Bracamoros, on the banks of the Amazon. Flowers small, red. Stigma 3-4-cleft.

Horrí Barbadoes-gooseberry. Shrub or tree. 5 P. portulacéfolia (Haw. syn. 199. in a note) leaves obovate-cuneated; prickles solitary, under the leaves, but at length coming in fascicles on the stem; flowers solitary; petals emarginate; fruit globose, retuse, naked.  h. D. S. Native of the West Indies.—Plum. ed. Burm. 197. f. 1. Cactus portulacéfolus, Lin. spec. 671. Lun. hort. jum. 2. p. 256. About the size of an apple-tree. Prickles blackish. Flowers terminal, purple; petals roundish. Fruit umbilicate, greenish, with white flesh, and numerous black seeds.


6 P. zimílleflóra (D. C. diss. t. 17.) leaves ovate, acute, undulate; prickles axillary, twin; but at length somewhat fasciculate on the stem, about the cicatrices occasioned by the falling of the leaves; flowers solitary, terminal; petals obcordate; ovary bearing the sepals.  h. D. S. Native of Mexico. Cactus zimilléflor, Moc. et Sesé, fl. mex. icon. ned. Flowers of a deep reddish-violet colour, greenish on the
outside, about an inch in diameter. Very like the preceding species.

*Zinnia*-flowered Barbadoes-gooseberry. Tree 10 feet.

7 P. *lychnidiflora* (D. C. diss. t. 18.) leaves ovate, acute; prickles solitary in the axils of the leaves, but perhaps in fascicles on the stems; flowers solitary, terminal; petals cuneated, fringed at the apex; ovary bearing the sepals. \( \gamma \). D. S. Native of Mexico. Cactus *fimbriatus*, Moc. et Sesse, fl. mex. icon. ined. Flowers of a coppery peach colour, about 2 inches in diameter, similar to those of *Lychne coronatus*.

*Lychne*-flowered Barbadoes-gooseberry. Shrub.

8 P. *opuntiiflora* (D. C. diss. t. 19.) leaves oblong, mucronate, usually 2 together; prickles axillary, solitary, very long, but perhaps disposed in fascicles on the stem? flowers usually terminal, or nearly so, solitary; petals ovate, acuminate; ovary bearing fascicles of hairs. \( \gamma \). D. S. Native of Mexico. Cactus *opuntiiflorus*, Moc. et Sesse, fl. mex. icon. ined. Flowers of a dirty scarlet colour, an inch in diameter; petals disposed in 2 series.

*Indian-fig*-flowered Barbadoes-gooseberry. Shrub.

9 P. *rotundifolia* (D. C. diss. t. 20.) leaves roundish, mucronate; prickles axillary, solitary, but perhaps disposed in fascicles on the stem; flowers solitary, lateral? petals broad, roundish, mucronate; ovary bearing the sepals; fruit obovate, full of cactriecies. \( \gamma \). D. S. Native of Mexico. Cactus *rotundifolius*, Moc. et Sesse, fl. mex. icon. ined. Flowers yellow, variegated a little with scarlet, 15 lines in diameter. Berry red, obovate.

Round-leaved Barbadoes-gooseberry. Shrub.

10 P. *grandifolia* (Haw. suppl. p. 85.) leaves oblong-lanceolate, smooth above, beset with rough dots beneath; stem very spiny. \( \gamma \). D. S. Native of Brazil. Cactus *grandifolius*, Link, Enum. 2. p. 25. Spreng. syst. 2. p. 498. Larger spines blackish, 2 inches long.

Great-leaved Barbadoes-gooseberry. CIt. 1818. Sh. 6 feet.

Cult. The species of this genus are very different in habit from the rest of the genera of the present order, from the branches being woody and furnished with proper leaves; but the flowers resemble the other genera of the order. They are of easy culture, growing freely in any light earth; and cuttings of them are readily rooted in mould or sand, under a hand-glass, in heat. A large plant of any of the species has a very grotesque and ornamental appearance, when several species of *Cereus* and *Epiphyllum* has been grafted or inserted on it.

Tribe II.

*RHIPSALIS* deae (this tribe only contains the genus *Rhisp- salis*). D. C. prod. 3. p. 475. Ovula, and therefore the seeds are fixed to the central axis of the berry.


Lin. syst. *Icosandra, Monogyenia*. Tube of calyx adhering to the ovary, smooth; limb superior, 3-6-parted, short; teeth acuminate, membranous. Petals 6, oblong, spreading, inserted in the calyx. Stamens 12-18, fixed to the base of the petals. Style filiform, crowned by 3-6 stigmas. Berry pellucid, roundish, crowned by the marcescent calyx. Seeds imbedded in the pulp, without albumen; radicle of the embryonic thick; cotyledons 2, short, obtuse.—Small shrubs, growing upon trees in the West Indies, usually pendulous, branched, leafless, and terete, naked or bearing rather falcate small bristles; fascicles of bristles, when present, disposed in a quincuncial spiral order. Flowers lateral, sessile, small, white. Berries pellucid and white, nearly like that of *Viscum* or *Mistletoe*.


Var. \( \beta \). Mauritiana (D. C. Prod. 3. p. 476.) plant creeping? branches crowded, jointed. \( \gamma \). D. S. Native of the Mauritius, on the rock called Lapoupe. Cactus pendulinus, Sieb. fl. maur. 2. no. 259. Perhaps this plant has been introduced to the Mauritius from the Brazils, as all the other species of this genus are natives of America. Flowers whitish. Berries white.


2 R. *hookeriata*; plant pendulous; branches verticillate, naked, glabrous; calyx 4-parted; petals 4. \( \gamma \). D. S. Native of the West Indies and Mexico. R. *Cassutha*, Hook. exot. fl. t. 21. R. *Cassutha beta*, Hookeriata, D. C. prod. 3. p. 476. Flowers white. Berries white, about the size of those of a red currant, 12-20-seeded.


*Cassutha*-like Rhipsalis. Shrub 1 foot.


Dichotomous Rhipsalis. Shrub 1 foot.


7 R. *salicornioides* (Haw. suppl. p. 83.) plant erect, branched, proliferous at the joints; joints short, obclavate, terete, and angular, with fascicles of very minute hairs, floriferous at the apex; flowers solitary. \( \gamma \). D. S. Native of South America. Otto et Link. abbl. t. 49. Petals 7-10, acute, yellow, longer than the stamens and style.


8 R. *mesembryanthoides* (Haw. rev. p. 71.) plant glomerately branched; branches erect, terete, straight, bearing joints.
joints lateral, crowded, terete, attenuated at both ends, clouded, bearing the flowers in the middle; fascicles of capillaceous bristles white or pale, but when old and faded black; flowers solitary.\footnote{D. S. Native of South America. Christy, in bot. mag. 3878. C. salicornoides \beta, Haw. suppl. p. 83. Joints at the sides of the branches numerous, crowded, and nearly erect. Flowers solitary, rising from the middle, not from the tops of the joints, white. Fruit a white berry, smaller than those of \textit{R. Cassijtha}.}

\textit{Fig-marigold-like} Rhipsalis. Fl. Ju. Ju. Clt. 1817. Shb. 3 ft. 9 \textit{R. parasitica} (D. C. prod. 3. p. 476.) plant pendulous, branched, glabrous; branches striated, or undulately repand.\footnote{D. S. Native of the West India Islands.—Plum. ed. Burnt. t. 197. E. 2.} Flowers like those of \textit{R. dichotoma}. This species is hardly known, but distinct from the others in the stem being repand in an undulating manner.

\textit{Parasitic} Rhipsalis. Shrub 1 foot. 10 \textit{R.? micrantha} (H. B. et Kunth, nov. gen. amer. 6. p. 65. under \textit{Cactus}) plant glabrous, pendulous, branched; branches with 3-4 angles, or compressedly 2-edged; flowers rising from the angles.\footnote{D. S. Native of Quito, in groves, near Olleros. Flowers white, minute.} Small-flowered Rhipsalis. Shrub 3/4 foot.\footnote{\textit{Cult.} This is a genus of singular plants, but without much beauty. Being parasites, on trees, they grow best in vegetable mould, mixed with a little brick rubbish; and they are easily increased by cuttings.}


\textbf{Calyx superior} (f. 32. d. f. 33. b.); limb 4-5-parted (f. 33. b. f. 32. a.), regular, coloured. Petals 5, inserted in the throat of the calyx (f. 33. c.), and alternating with its segments, equal. Stamens 4-5 (f. 33. c.), very rarely 6, very short, inserted alternately with the petals, equal; filaments conical or cylindrical, distinct; anthers 2-celled, opening lengthwise on the inside; but in the varieties of \textit{Rubrum} they burst laterally and transversely. Ovarium 1-celled, with 2 opposite parietal placenta; ovula numerous. Style one, 2 (f. 32. c. f. 33. e.) -3 or 4-cleft. Fruit succulent (f. 32. c.), nearly globose, umbilicate at the apex from the permanent calyx (f. 32. d.), 1-celled, many-seeded. Seeds arillate, suspended by a long filiform podosperm; outer integument gelatinous or juicy, and membranous: under one a very thin membrane, adhering closely to the albumen; blumish at the extremity opposite the hymen. Albumen horny, conforming to the seed, white. Embryo minute, placed at the sharpest end of the seed, excentral, with a blunt radicle, which is placed next the hilum.—\textit{Unarmed} or spiny shrubs. Leaves alternate, lobed or cut, plaited while in the bud. There is one bractea at the base of each pedicel, which is cut more or less, and two much smaller ones called bracteoles under each ovary. Flowers greenish, white, yellow or red, very rarely unisexual.

This order was formerly confounded with \textit{Cáctae} without the dissimilarity of their appearance they are most closely related; the principal differences between the two orders are, that in \textit{Cáctae} the stamens are indefinite, the seeds without albumen, and the calyx and corolla indistinguishable; while in \textit{Grossulariae} the stamens are definite, the seeds albuminous, and the calyx and corolla distinct. There are spines in both orders, and some of the \textit{Cáctae} have distinct leaves.

The properties of the gooseberry and currant are those of the generality of the order, except that in other species a mawkish or extremely acid taste is substituted for the refreshing and agreeable flavour of the former. Some are emetic. The black currant, which is tonic and stimulant, has fragrant glands upon its leaves and flowers; these reservoirs are also found upon some other species. Malic acid exists in currants and gooseberries. Turner, 634.

\textbf{I. RIBES} (the name of an acid plant mentioned by the Arabian physicians, which has been discovered to be the \textit{Ríbem Ríbes}). Lin. gen. 281. Berlandier, mem. soc. phys. gen. 3. pt. 2. p. 43. t. 1-3 and D. C. prod. 3. p. 477.—Grossularia. Tourn. Gétt.

\textbf{Lin. syst.} Pontändria, Monogjinía. Character the same as the order.

\textbf{Sect. I. Grossulaaria} (a dim. of grossus, thick; meaning a gooseberry bush; the species contained in this section all bear goosseberries). Ach. Rich. l. c. Berlandier, l. c. t. 1. Stems usually prickly (f. 32. ). Peduncles 1-3-5-flowered. Calyx more or less campanulate (f. 32. a.). Leaves plicate.

\* Flowers greenish.

1 \textit{R. oxyacantha} (Lin. spec. 291.) plant prickly and bristly, naked; spines 1 or 3, joined at the base; leaves corolate, 5-lobed, serrated, often pubescent beneath, and on the petioles; peduncles very short, usually 2-flowered; tube of calyx glabrous, hairy inside, with a spreading limb, which is longer than the obovate petals; germs and pedicles naked.\footnote{2. H. Native of North America throughout Canada, and as far as the Saskatchewan, and of Newfoundl. Berlandier, l. c. t. 1. f. 1. The shrub varies much in the aculei and spines, in their number and colour, and in the more or less dense ramifications, and pubescence. Mr. Drummond says, the fruit of this species is much like the common gooseberry, and is equally agreeable, either of a red or green colour.}

\textit{Hawthorn-like} Gooseberry. Fl. May, June. Sh. 3 to 4 ft. R. setosum (Lindl. bot. reg. t. 1257. Hook. fl. bor. amer. 1. p. 230.) branches beset with dense bristles; prickles unequal, subulate; leaves roundish, coriaceous at the base, pubescent, 3-5-lobed, deeply crenated; peduncles 2-flowered, rather bracteate; calyx tubularly campanulate, with the segments linear, obtuse, and spreading, twice the length of the petals, which are entire; berries hispid.\footnote{2. H. Native of North America, on the banks of the Saskatchewan.}


3 \textit{R. trilórum} (Willd. hort. berol. t. 61.) prickles wanting; spines usually solitary; leaves coriaceous, 5-lobed, serrated, glabrous; peduncles elongated, 2-3-flowered; tube of calyx narrow, cylindrical, glabrous, with a spreading limb, which afterwards becomes reflexed; stamens exserted; ovary naked.\footnote{2. H. Native of North America, in mountainous situations to the west of the Rocky Mountains; and of Pennsylvania. Berlandier, l. c. t. 1. f. 4. R. stamineum, Horn. hort. hafn. p. 237. Berry reddish, glabrous. The species seems to be easily distinguished from \textit{R. Cynoabati} by the constantly smooth fruit, very narrow flowers, and exserted stamens.}

A a
Three-flowered Gooseberry. Fl. April, May. Clt. 1812. Sh. 3 to 4 ft.
4 R. Cyno'sbati (Lin. spec. 292.) stem unarmed, rarely prickly; spines usually twin; leaves cordate, 5-lobed, serrated, more or less pubescent underneath, and on the petioles; peduncles elongated, 2-3-flowered; pedicels divaricate; tube of calyx ovate-cylindrical; limb spreading, with the segments extending the petals, which are obovate; stamens hardly exerted; ovarium bristly. h. H. Native of Canada (Michx.) Japan (Thunb.), Berlandier, l.c.t. 1. f. 3. Jacq. vind. 2. t. 123. Berries bristly or prickly. It hardly differs from R. divaricatum, except in the broader tube of the corolla, and the shorter stamens.

Var. β. fruit unarmed. h. H. Native of Hudson's Bay.

Var. γ; branches prickly; peduncles shorter; flowers pubescent, purplish; fruit prickly. h. H. Native about Lake Huron.

Dog-Bramble Gooseberry. Fl. Apr. Clt. 1759. Sh. 3 to 4 ft.
5 R. divaricatum (Dogl. in bot. reg. 1859.) branches divaricate, bristly, at length naked; spines 1-3 together, axillary, deflexed, large; leaves roundish, 3-lobed, deeply toothed, nerved, glabrous; peduncles 3-flowered, drooping; calyx funnel-shaped: with the segments at length spreading, and twice the length of the tube; style and stamens exerted; berries glabrous. h. Native of the north-west coast of America, a common bush on the banks of streams near Indian villages. This species comes nearest to R. triflorum. Berries black, smooth, and spherical, pleasant to the taste. Petals white.

Divericatum Gooseberry. Fl. April. Clt. 1826. Sh. 5 to 7 ft.
6 R. iridi (Dogl. in hort. trans. 7. p. 516. Hook. fl. bor. amer. 1. p. 231.) prickles axillary, tern; leaves cordate, somewhat 5-lobed, toothed, ciliated, piose on both surfaces, nerved; peduncles 3-flowered, beset with glandular pili; calyx campanulate; segments linear, about equal in length to the tube; berries glabrous. h. H. Native of the north-west coast of America, on moist mountain rocks near springs and streams, on the Blue Mountains, and on the banks of the Spokan river. Berries spherical, half an inch in diameter, smooth, juicy, and well flavoured. Apparently closely allied to R. triflorum.

Well-watered Gooseberry. Shrub 3 to 4 feet.
7 R. saxatum (Hook. fl. bor. amer. 1. p. 231.) stem unarmed, rarely prickly; spines wanting, solitary or twin; leaves cordate, 5-lobed, serrated, smoothish; peduncles very short, deflexed, 1-2-flowered, calyx glabrous, with a campanulate tube; segments spreading, but at length reflexed, twice the length of the corolla, and about equal in length to the stamens; ovarium naked. h. H. Native of the north-west coast of America, common on the undulating grounds of the interior among stones; and about Lake Huron, and on the banks of the Saskatchewan; also near Boston. R. saxatile, Doug. mss. R. triflorum, Bigel. fl. bost. ed. 2. p. 90. Fruit resembling a common gooseberry.

Stone Gooseberry. Shrub 3 to 4 feet.
8 R. hirtellum (Michx. fl. bor. amer. 1. p. 479.) spines nearly axillary; branches beset with a few short bristly hairs; leaves small, semi-trifid; lobes few-toothed; peduncles 1-flowered; berry glabrous, red. h. H. Native of North America, in Canada, in stony places by Signey; and on the mountains of Virginia.

9 R. lacustre (Poir. encycl. suppl. 2. p. 856. Pursh. fl. amer. sept. 1. p. 161.) stem very prickly; spines many-parted, slender; leaves cordate, deeply 3-5-lobed, cut; racemes 5-8-

flowered, loose; calyx rotate; teeth and pedicels hispid, and glandular. h. H. Native throughout Canada to Fort Franklin and Bear Lake, near the Arctic circle; mouth of the Columbia; mountains of the Columbia, and of North California; also of Virginia, &c. R. oxyacanthoides, Michx. fl. bor. amer. 1. p. 111. R. echinatum, Doug. mss. This has the flowers of the currant, and the prickly stems of the gooseberry. The fruit is about the size of black currants, in pendulous racemes, purplish black, shining, clothed with hairs, unpleasant to the taste.

Lake Gooseberry. Fl. April, May. Clt. 1812. Sh. 4 to 5 ft.
10 R. rotundifolium (Michx. fl. bor. amer. 1. p. 110.) spines nearly axillary, solitary; leaves nearly orbicular, clothed with very minute down, a little lobed; lobes roundish, obtuse; peduncles 1-flowered; limb of calyx tubular. h. H. Native on the high mountains of Carolina. Berries glabrous.

Round-leaved Gooseberry. Shrub 3 to 4 feet.
11 R. racemosa (Michx. fl. bor. amer. 1. p. 111.) spines nearly axillary, very short, solitary; leaves on slender petioles, lobed; lobes acute, cut; peduncles capillary, erect, usually 2-flowered; calyx glabrous, tubularly campanulate. h. H. Native of North America, on the mountains of Tennessee; and in mountain meadows from New York to Virginia. Berry glabrous, purple or blue, with a very pleasant taste. Leaves pubescent.

12 R. racemosa (Adams, in reliq. Willd. ex Ræm. et Schlult. sylt. 5. p. 507.) prickles stipular, tern; peduncles 1-flowered, erect; leaves 5-lobed, deeply toothed. h. H. Native of Canaceus. Perhaps only a variety of R. Uva-crispa.

13 R. microphyllum (H. B. et Kunth, nov. gen. amer. 6. p. 62.) prickles usually solitary; leaves nearly reiform, small; peduncles very short, 2-flowered; calyx campanulate; segments oblong, obtuse; petals spathulate obovate, retuse at the apex. h. H. Native of Mexico, in mountainous places near El Guada, between Guchila and the city of Mexico; at the elevation of 4800 feet. Ovaries rather turbinate. Flowers red.

Small-leaved Gooseberry. Shrub 4 to 6 feet.
14 R. cuneifolium (Ruiu et Pav. fl. per. 3. p. 233. f. c.) unarmed; leaves cuneiform, cut, trifid; petioles not half the length of the leaves; peduncles solitary, axillary, 2-3-flowered, length of the petioles; bracteas 2, at the base of each flower. h. G. Native of Peru, on the Andes. Berry pale red. Habit of R. Uva-crispa. Perhaps belonging to a separate section.

Wedge-leaved Gooseberry. Shrub 3 to 4 feet.
15 R. cuneifolium (Hook. et Arn. in bot. misc. 3. p. 250.) unarmed; branches glabrous; leaves glabrous, somewhat 5-lobed, roundish-reiform, cuneulate at the base, and cutinate; the lobes lying over each other, acutely and deeply lobed; pedicels a little shorter than the leaves; racemes hardly puberulous, axillary, short, few-flowered; flowers nearly sessile, hardly exceeding the bracteas, which are roundish. h. G. Native of the Cordillera of Chili. Nearly allied to R. cuneiformium, but apparently quite distinct.

Hooded-leaved Gooseberry. Shrub 4 to 5 feet.
16 R. acutiloba (Smith in Rees' cyclo.) very prickly; prickles stipular, 3-5-parted; leaves rather pubescent, nearly orbicular, 3-5-lobed; lobes bluntish, deeply serrated; peduncles usually 1-flowered, bracteolate in the middle; calyx campanulate, smoothish; berries bracteate, and are, as well as the styles, quite glabrous. h. H. Native of Siberia, in stony rocky mountainous places. Led. fl. ross. alt. ill. t. 230. R. Uva-crispa, Sievers in Pall. nord. beitr. 7. p. 274. Pall. fl. ross. 2. p. 37. Stem erect or procumbent. Petals white. Berries glabrous, yellowish or purplish, sweet, with a grateful taste.
Acicular-spined Gooseberry. Shrub.

17 R. grossularia (Lin. spec. p. 291) prickles 2 or 3 under each bud; branches otherwise smooth, and spreading or erect; pedicels 1-2-flowered; leaves 3-5-lobed, rather villous; bracteoles close together; calyx campanulate, with reflexed segments, which are shorter than the tube; petals rounded at the apex, glabrous, but beaded in the throat; style always bent with long down.

H. Native of Europe and Nipaul, in woods and hedges; plentiful in some parts of Britain, in hedges, thickets, and waste ground, as the woods and hedges about Darlington; apparently wild in Hamilton wood, Scotland. Smith, eng. bot. 1292. R. U'va-crispa, Oed. fl. dan t. 546. Grossularia hirsuta, Mill. dict. no. 2. R. U'va-crispa var. spina, D. C. fl. fr. 4. p. 408. Plench. icon. 148. The Nipaul plant has the stem thickly beset with bristles, and the spines strong and 3-parted. It is therefore probably a proper species.

Var. β, U'va-crispa (Smith, engl. fl. 1. p. 333.) plant beset with spines all over; leaves small, rather villous; berries smaller, glabrous.

Var. ε, subèrme (Berl. mss.) plant nearly glabrous; bark smooth, brown; prickles axillary; flowers and leaves small. Native about Geneva. Perhaps a variety of R. reclinatum.

Var. η, macroèrnum (D. C. prod. 3. p. 478.) stigmas often longer than the petals; flowers and berries large.

Var. ϑ, bracteatum (Berl. mss.) berries clothed with 2-4-5 straight coloured, nearly opposite, bracteas and bristles, emulating sepals, which fall off before the berry arrives at maturity.

The gooseberry is called Grosselle à maquerel, in French; Uva-spino in Italian; Stachelbeerstrauß, in German; in Scotland it is called Grosier; in Piedmont, where the gooseberry is found wild, and where the Italian botanists state the berries to be eatable, but astringent and neglected, it is called Grieselle. Some derive our name gooseberry from grosserry, from the resemblance of the bush to gorze; others, as Professor Martyn, from its being used as sauce with young or green geese. Gerard says it is called feaberry (feverberry) in Cheshire; and it has the same name in Lancashire and Yorkshire. In Norfolk this term is shortened to feabes, or, as they pronounce it, fapes. Carberry is another British name for this fruit.

The gooseberry is a low, branching, prickly shrub, bearing pendulous, hairy, or smooth berries, of various colours; it is a native of several parts of Europe, and abounds in the Vallaes, in copsewoods, where it produces a small, green, hairy, high-flavoured fruit. In England it is naturalized in various places, as on old walls, ruins, and in the woods and hedges about Darlington. It is cultivated in greater perfection in Lancashire than in any other part of Britain; and next to Lancashire the climate and treatment of the Lothians seem to suit this fruit. In Spain and Italy the fruit is scarcely known. In France it is neglected and little esteemed. In some parts of Germany and Holland the moderate temperature and humidity of the climate seem to suit the fruit; but in no country is its size and beauty to be compared with that produced in Lancashire, or from the Lancashire varieties, cultivated with care, in the more temperate and humid districts of Britain. Neill observes, that when foreigners witness our Lancashire gooseberries, they are ready to consider them as forming quite a different kind of fruit. Happily this wholesome and useful fruit is to be found in almost every cottage-garden in Britain; and it ought to be considered a part of every gardener's duty to encourage the introduction of its most useful varieties in their humble enclosures. In Lancashire, and some parts of the adjoining counties, almost every cottager, who has a garden, cultivates the gooseberry, with a view to prizes, given at what are called Gooseberry-prize Meetings, of which there is annually published an account, with the names and weight of the successful sorts, in what is called the Manchester Gooseberry Book. The prizes vary from 1l. to 5l. or 10l. The second, third, to the sixth and tenth degree of merit, receiving often proportionate prizes. There are meetings held in spring, to "make up," as the term is, the sorts, the persons, and the conditions of exhibition; and in August to weigh and taste the fruit, and determine the prizes.

Use.—The fruit was formerly in little esteem; but it has received so much improvement, that it is now considered very valuable for tarts, pies, sauces, and creams, before being ripe, and when at maturity, it forms a rich dessert fruit for three months; and is preserved in sugar for the same purpose, and in water for the kitchen. Unripe gooseberries can be preserved in bottles of water against winter; the bottles are filled with berries, close corked, and well sealed; they are then placed in a cool cellar till wanted. By plunging the bottles, after being corked, into boiling water, for a few minutes (heating them gradually to prevent cracking), the berries are said to keep better. —Neill.

Varieties.—The gooseberry is mentioned by Turner, in 1573. Parkinson enumerates 8 varieties; the small, great, and long common, 3 reds, 1 blue, and 1 green. Ray mentions only the pearl gooseberry, but Rea has the blue, several sorts of yellow, the white Holland, and the green. Miller only says, there are several varieties obtained from seed, most of them named from the persons who raised them; but as there are frequently new ones obtained, it is needless to enumerate them. The present list of the London nurserymen contains from 80 to 100 names, but those of some of the Lancashire growers above 300. Forsyth, in 1800, mentions 10 sorts as common; and adds a list of 48 new sorts, grown at Manchester. The following may be considered established varieties, and such as merit cultivation.

List of gooseberries.—Those marked with a star may be considered the best; the rest only second rate.

1. Fruit green.

§ 1. Branches spreading or pendulous.

* Berries smooth, green.

1 Barclay's green champagne. Fruit roundish, middle-sized.

2 Perrins evergreen. Fruit large, oblong.

3 Fame. Fruit large, oblong, ovalate. Branches pendulous.


5 Glory of Kingston. Fruit roundish, middle-sized.

6 Allen's glory of Ratcliff. Fruit oblong, middle-sized.*

7 Horsefield's green gage. Fruit large, roundish.

8 Green globe. Fruit round, middle-sized.

9 Nixon's green myrtle. Fruit large, oblong. Branches pendulous.

10 Berry's greenwood. Fruit large, oblong. Branches pendulous.

11 Massey's heart of oak. Fruit large, oblong. Branches pendulous.*

a a 2
12 Grundy's high sheriff of Lancashire. Fruit obovate, middle-sized. Branches pendulous.
13 Edward's jolly tar. Fruit large, obovate. Branches pendulous.*
14 Minerva. Fruit large, oblong.
15 Taylor's no-brity. Fruit large, obovate. Branches pendulous.
16 Northern hero. Fruit large, obovate.
17 Reformer. Fruit large, oblong.
18 Sabine's green. Fruit small, round.
19 Large smooth green. Fruit large, obovate.*
20 Green Walnut, Belmont's, smooth green, nonpareil. Fruit middle-sized, obovate.*

** Berries green, hairy, or downy.
21 Colonel Anson's. Fruit large, oblong, hairy.
22 Holt's beauty. Fruit large, oblong, downy.
23 Early green hairy, early green, green Gascoigne. Fruit small, round.*
24 Lovart's Eliza. Fruit large, roundish, hairy.
26 Green globe. Fruit small, round, hairy.
27 Green seedling. Fruit small, oblong, hairy. Branches pendulous.*
29 Lovely Anne. Fruit large, oval, downy. Branches pendulous.
30 Gregory's perfection. Fruit large, roundish, downy, late. Branches pendulous.*
31 Prophet's profit. Fruit large, oblong, downy.
32 Early royal George. Fruit middle-sized, oblong, hairy, early.
33 Ryder's triumph. Fruit small, obvate, hairy.
34 Moore's troubler. Fruit large, roundish-oblong, hairy.
35 Unicorn. Fruit large, oval, downy.

§ 2. Branches erect.
* Fruit green, smooth.
36 Pitmaston green-gage. Fruit small, obovate.*
37 Briggs's independent. Fruit large, obvate.
38 Merry lass. Fruit middle-sized, obvate.
39 Midsummer. Fruit small, roundish.
40 Royal George. Fruit middle-sized, oval.

** Fruit green, hairy, or downy.
41 Monck's Charles Fox. Fruit small, ova, hairy.
42 Green oak. Fruit large, roundish, hairy.
43 Greensmith. Fruit middle-sized, roundish, hairy.
44 Hebburn's prolific. Fruit middle-sized, roundish, hairy.*
45 Collier's jolly angler, Lay's jolly angler, Collins's jolly angler. Fruit large, oblong, downy.*
46 Mills's Langley green. Fruit large, roundish, hairy.
47 Late green. Fruit small, obvate, downy.
48 Parkinson's laurel, green laurel, green willow. Fruit large, obovate, pale green, nearly white.*
49 Hopley's Lord Crew. Fruit large, oblong, hairy.*
50 Mignonette. Fruit small, roundish, hairy.
51 Lovart's Mosc. Fruit large, obvate, hairy.
52 Green Rumbullion. Fruit small, round, hairy.
53 Small green. Fruit small, globular, downy.
54 Small hairy green. Fruit small, round, hairy.
55 Bratherston's Wistaston hero. Fruit large, oblong.

II. Fruit yellow.
§ 1. Branches spreading or pendulous.
* Fruit yellow, smooth.
1 Amber, amber yellow, smooth amber. Fruit small, roundish.
2 Diggles's Donny Roger. Fruit large, obvate.
3 Capper's Bunker's Hill. Fruit large, roundish.
4 Hopley's Cheshire cheese. Fruit large, oblong.
5 Forbes's golden chain. Fruit large, oblong. Branches pendulous.
6 Bamford's golden Purse. Fruit large, obvate. Branches pendulous.*
7 Beaumont's smiling beauty. Fruit large, oblong. Branches pendulous.*
8 Beardsell's smuggler. Fruit large, roundish, oblong. Branches pendulous.
10 Mather's victory. Fruit large, obvate. Branches pendulous.
11 Forester's Lord Combermere. Fruit large, obvate.
12 Saunderson's Napoleon. Fruit large, obvate.
14 Large yellow. Fruit obvate, middle-sized, golden yellow, smooth. Branches pendulous.
16 Long yellow. Fruit large, oblong, golden yellow.

** Fruit yellow, hairy, or downy.
17 Capper's bottom sawyer. Fruit large, obvate, downy.
18 Lister's Britannia. Fruit large, obvate, downy.
19 Hopley's globe. Fruit large, round, hairy. Branches pendulous.
22 Jackson's golden orange. Fruit large, oblong, Branches pendulous.
23 Bratherston's golden sovereign. Fruit large, roundish, hairy.
24 Hill's golden gourd. Fruit large, oblong, hairy. Branches pendulous.
28 Sparklet. Fruit small, obvate, downy.
29 Hallon's Trafalgar. Fruit large, oblong, hairy. Branches pendulous.
31 Weedham's delight. Fruit middle-sized, oblong, hairy.

§ 2. Branches erect.
* Fruit yellow, smooth.
32 Yellow ball. Fruit middle-sized, roundish.*
33 Bitthfeld. Fruit small, round, late.
34 Clegg's Tim Bobbin. Fruit middle-sized, oblong.
35 Old dark yellow. Fruit small, roundish.
36 White walnut. Fruit middle-sized, obvate, whitish yellow.
** Fruit yellow, hairy, or downy.

37 Hebburn yellow aston. Fruit small, roundish, hairy.*
38 Yellow champagne, hairy amber. Fruit small, roundish, hairy.
39 Catlow's conquering hero. Fruit large, oblong, coarse, hairy.
40 Heap's conquering girl. Fruit large, oblong, hairy.
41 Golden drop, golden lemon.
42 Part's golden fleece. Fruit large, oval, hairy.
43 Sulphur, rough yellow. Fruit small, roundish, hairy.*
44 Early sulphur, golden ball, golden bull. Fruit middle-sized, roundish-oblong, hairy.
45 Foster's husbandman. Fruit large, obvate, downy.
46 Heywood's invincible. Fruit large, roundish-oblong, downy.
47 Hardcastle's jolly gunner, royal gunner. Fruit large, oblong, hairy.
48 Prophet's regulator. Fruit large, roundish, hairy.
49 Rumbullion, yellow globe, round yellow. Fruit small, roundish, downy.
50 Smooth yellow. Fruit small, roundish, downy.*
51 Williamson's yellow hornet. Fruit small, ovate, downy.
52 Yellowsmith. Fruit small, roundish-oblong, hairy.*
53 Kelk's yellow. Fruit middle-sized, oblong, downy.

III. Fruit white, or greenish white.

§ 1. Branches erect.
* Fruit smooth, white.

1 Cranham's ambush. Fruit large, obvate, white.
2 White Damson. Fruit small, roundish.*
3 Honey white. Fruit middle-sized, roundish-oblong.
4 Hoslam's smiling yellow. Fruit large, roundish-oblong.
5 Cook's white eagle. Fruit large, obvate.*
6 Lovat's Queen Caroline. Fruit middle-sized, obvate.
** Fruit greenish white, hairy, or downy.

7 Large early white. Fruit large, obvate, downy.*
8 Sampson's Queen Ann. Fruit large, oval, downy.
9 Peer's Queen Charlotte. Fruit middle-sized, oblong, hairy.*
10 Morris's Queen Mary. Fruit middle-sized, ovate, downy.
11 Trueman. Fruit large, obvate, hairy.
** * Fruit white, hairy, or downy.

12 Bonny landlady, noble landlady. Fruit large, oblong.
13 Hopley's lady of the manor. Fruit large, roundish-oblong, hairy.
14 White lion. Fruit large, obvate, hairy.
15 Stringer's maid of the mill. Fruit middle-sized, obvate, downy.
16 Marchioness of Downshire. Fruit middle-sized, oblong, hairy.
17 Early rough white. Fruit large, oval, hairy.
18 Saunders royal rock getter, Andrews's royal rock getter. Fruit large, obvate, downy.
19 White royal. Fruit small, round, hairy.
20 Compton's Sheba Queen. Fruit large, obvate, downy.*
21 Wellington's glory. Fruit large, roundish-oblong, downy.*
22 Moore's white bear. Fruit large, obvate, hairy.*
23 Nixon's white heart. Fruit middle-sized, heart-shaped, hairy.
24 White lily. Fruit middle-sized, obvate, downy.
26 Taylor's bright Venus. Fruit middle-sized, obvate, hairy.*
27 White champagne. Fruit small, roundish-oblong, hairy.*
28 Saunders Cheshire lass. Fruit large, oblong, downy.*
29 Hedgehog. Fruit middle-sized, roundish, hairy.*

§ 2. Branches spreading or pendulous.
* Fruit smooth, white.

30 Crystal. Fruit small, roundish.*
31 White fig. Fruit small, obvate.*
32 Parkinson's first rate. Fruit large, oval.
34 Great Britain. Fruit large, oblong, greenish white.
35 White rasp. Fruit small, round.
36 Brundrett's white rock. Fruit large, obvate. Branches pendulous.
37 Diggles's wanton. Fruit middle-sized, roundish, greenish white.
38 Denny's Victoria. Fruit large, obvate, greenish white.
** Fruit greenish white, smooth.
39 Stringer's dusty miller. Fruit middle-sized, obvate.
40 Great Britain. Fruit large, oblong. Branches pendulous.
41 Denny's Vittoria. Fruit large, obvate. Branches pendulous.
** * Fruit white, hairy, or downy.

42 Capper's bonny lass. Fruit large, oblong, hairy.
43 White crystal. Fruit small, roundish, hairy or downy.*
44 Early white. Fruit middle-sized, roundish, downy.*
45 Grundy's fowler. Fruit middle-sized, obvate, downy.
46 Large white. Fruit middle-sized, oval, downy.
47 Smith's radical. Fruit large, roundish-oblong, hairy. Branches pendulous.
48 Irish white raspberry. Fruit small, round, hairy.
49 Cleftworth's white lion. Fruit large, obvate, downy. Branches pendulous.*
**** Fruit greenish white, hairy or downy.

50 Counsellor Brougham. Fruit large, oblong, downy.
51 Bratherton's governess. Fruit large, roundish-oblong, hairy.
52 Princess royal. Fruit large, obvate, hairy. Branches pendulous.*
54 Taylor's speedwell. Fruit large, roundish, hairy. Branches pendulous.

IV. Fruit red.

§ 1. Branches spreading or pendulous.
* Fruit hairy or downy.

1 Alexander. Fruit large, obvate, hairy.
2 Hamlet's beauty of England. Fruit large, oblong, hairy.
3 Waceham's black bullfich. Fruit middle-sized, obvate, dark red, downy.
4 Shipley's black prince. Fruit middle-sized, roundish, downy.
5 Boardman's British crown. Fruit large, roundish, hairy.
6 Williams's conqueror. Fruit large, obvate, hairy.
7 Melling's crown bob. Fruit large, oblong, hairy.*
8 Worthington's defiance. Fruit large, obvate, hairy. Branches pendulous.
10 Early black. Fruit middle-sized, oblong, dark red. Branches pendulous.
11 Early rough red. Fruit small, roundish-oblong.
13 Smith's favourite. Fruit middle-sized, roundish-oblong, hairy.
16 Jackson's slim. Fruit middle-sized, obovate, dark red, downy.
18 Bratherton's Lord of the Manor. Fruit large, roundish, hairy.
19 Knight's Marquis of Stafford. Fruit large, roundish-oblong, hairy.
20 Wright's matchless. Fruit middle-sized, oblong, dark-red, hairy.
21 Miss Bold, pigeon's egg. Fruit middle-sized, roundish, downy, dark red, early.
22 Bratherton's over-all. Fruit large, oblong, hairy. Branches pendulous.
24 Raspberry, nutmeg. Fruit small, roundish, hairy, dark red.
25 Red Mogul. Fruit small, roundish, hairy.
26 Large red oval. Fruit large, oval, hairy. Branches pendulous.
30 Rough red, little red hairy, old Scotch red, thick skinned red. Fruit small, round, hairy.
31 Small dark rough red, small rough red. Fruit small, round, hairy.
32 Royal oak. Fruit middle-sized, roundish, hairy.
33 Small red. Fruit small, round, hairy.
34 Capper's top sayer. Fruit large, roundish, hairy, pale red. Branches pendulous.
36 Lomax's victory. Fruit large, roundish, hairy. Branches pendulous.
37 Red walnut, Murray, Eckert's double bearing, Ashton red. Fruit middle-sized, obovate, downy, early.
38 Warrington red, Aston, volunteer. Fruit large, roundish-oblong, hairy. Branches pendulous. This is one of the best, and hangs late.
39 Knight's warrior. Fruit large, ovate, downy, pale red. Branches pendulous.
40 Wilmot's late superb. Branches large, roundish-oblong, hairy.

** Fruit smooth, red.
41 Gerard's Ajax. Fruit large, roundish.
42 Red ball. Fruit small, roundish.
43 Claret. Fruit small, roundish.
44 Worthington's conqueror. Fruit large, obovate. Branches pendulous.
45 Rival's emperor Napoleon. Fruit large, obovate. Branches pendulous.
46 Whitton's glory. Fruit middle-sized, oblong, dark red.
47 Hooper's great captain. Fruit large, oblong.

48 Amberley hero. Fruit large, oblong, dark red.
49 Jugg's red. Fruit large, roundish. Branches pendulous.
50 Eckert's jolly printer. Fruit large, oblong, dark red.
51 Brannie nutmeg. Fruit small, obovate.
53 Boardman's Prince Regent. Fruit large, roundish, dark red.
54 Red Turkey, smooth red. Fruit small, obovate.
56 Johnson's ringleader. Fruit large, oblong. Branches pendulous.
57 Farron's rearing lion, great chance. Fruit very large, oblong. Branches pendulous.
58 Saint John. Fruit middle-sized, obovate.
59 Rider's scented lemon. Fruit large, oblong, obovate. Branches pendulous.
60 Greaves's Smolensko. Fruit large, obovate. Branches pendulous.
61 Chadwick's sportsman. Fruit large, oblong, dark red. Branches pendulous.
62 Bratherton's whipper-in. Fruit large, oblong, dark red. Branches pendulous.
63 Wilmot's early red. Fruit large, roundish-oblong, dark red. Branches pendulous.
64 Wilmot's seedling red. Fruit large, oblong, dark red.

§ 2. Branches erect.

* Fruit smooth, red.

66 Small red globe, smooth Scotch. Fruit small, roundish.

** Fruit red, hairy or downy.

67 Brundrett's atlas, Brundell's atlas. Fruit large, oblong, hairy.
68 Barton's red. Fruit middle-sized, roundish, hairy.
69 Red Champagne, red Turkey, countess of Errol, Ironmonger of many. Fruit small, roundish-oblong, hairy. A fruit of unequalled richness.
70 Dakin's black. Fruit middle-sized, oblong, dark red. A bad bearer.
71 Large red globe. Fruit large, roundish, hairy.
72 Barton's hairy red. Fruit small, roundish, hairy. A good bearer.
73 Bratherton's huntsman, Speechley's rough red. Fruit large, roundish, hairy. A good bearer.
74 Irish plum. Fruit middle-sized, roundish, hairy.
75 Hopley's jubilee. Fruit large, roundish, hairy, dark red.
76 Allcock's king. Fruit large, roundish, hairy, dark red.
77 Lad Harthorn's Lancashire. Fruit large, roundish, hairy, dark red. A good bearer.
78 Little John. Fruit small, oblong, hairy, dark red.
79 Beaumont's red. Fruit middle-sized, roundish, hairy.
81 Rob Roy. Fruit middle-sized, obovate, hairy.
82 Scarlet transparent. Fruit small, roundish, hairy. A bad bearer.
83 Scotch best jam, dumpling. Fruit small, hairy, roundish.
84 Denny's Shakspeare. Fruit large, roundish, hairy.
85 Mellor's Sir Francis Burdett. Fruit large, obovate, pale red.
86 Hampson's Tantarara. Fruit middle-sized, obovate, downy.
87 Speechley's Yaxley hero. Fruit large, obovate, hairy.
Selection of sorts.—"It must be admitted," Neill observes, "that although large gooseberries make a fine appearance on the table, they are often deficient in flavour when compared with some of smaller size. Many of them have very thick strong skins, and are not eatable unless thoroughly ripened. Some of the large sorts, however, are of very good quality, such as the red Champagne and the green walnut, &c. For culinary use in the month of May, Wilmot's early red is larger and better than most others, the skin not being tough, and the whole berry melting to a fine consistence." Forsyth judiciously recommends cultivating the early and late sorts, in order to prolong the season of this fruit. But the best way of selecting sorts for any particular purpose is from the list given above, where those that are of particular excellence are marked by an asterisk.

Propagation.—The gooseberry may be propagated by all the modes applicable to trees or shrubs, even by pieces of the roots; but the mode by cuttings is usually adopted for continuing varieties, and that by seeds for procuring them.

By seeds.—The scientific mode of impregnating one variety with another has, we believe, not been applied to this fruit. In general the seed of some choice variety, thoroughly ripe, is taken and sown in autumn or early in spring, in beds or pots of rich light mellow earth; when the plants are a year old, they are planted out in nursery rows, to be cultivated and trained there a year or two; in general they will bear the third year. By preparing for the best of these seedlings a very rich soil, and by watering, shading, and thinning the fruit, the largest sorts have been obtained. Not content with watering at the roots and over the top, the Lancashire connoisseur, when he is growing for exhibition, places a small saucer of water immediately under each gooseberry, only 3 or 4 of which he leaves on the tree. This is technically called suckling. He also pinches off a great part of the young wood, so as to throw all the strength he can into the fruit.

By cuttings.—Miller says, the best season for planting gooseberry cuttings is in autumn, just before their leaves begin to fall. The cuttings should be taken from bearing shoots, rather than from those that issue from the main stem. Cut them to such a length as the strength and ripeness of the wood will bear, and cut off all the buds, excepting three, or at most four at top, and train the plants with a single stem of 9 inches or a foot high, from the top of which the branches should radiate upwards at an angle of 45°, or better if 45°. Haynes advises taking off cuttings in July, when the fruit is on the bush, in order to make sure of the sorts. He says, by immediate planting, watering, and shading, as good plants are produced as from ripe wooden cuttings. Treat. of the gooseberry, &c. p. 29.

Soil and manure.—Any good garden soil, on a dry bottom, and well manured, will suit the gooseberry. That which is soft and moist produces the largest fruit. The situation should not be under the drip of trees, over much shaded or confined, otherwise the fruit will be small, ill flavoured, and the plants apt to mindew. Forsyth says, gooseberries should be dugged every year, or at least have a good coat of dung once in two years. Haynes recommends a mixture of peat and loam well manured, and a shaded situation. The last he proposes to effect by planting among his quarters of gooseberries, rows of Jerusalem artichokes in the direction of east and west.

Final planting.—"The season for planting gooseberries is any time during open weather, from October till March. When trees are procured from the public nurseries, choose such as are in some advanced state, about 3 years' growth, with pretty full heads, for immediate plentiful bearers. Let the general supply be in standard bushes, and plant principally in the kitchen garden, in single rows along the boundary edges of the main quarters or outward borders, from 6 to 8 feet apart, or some may be planted in cross rows, to subdivide extensive quarters. When the object is to raise large quantities of fruit, plantations are made in continued parallel rows, 6 or 10 feet asunder, by 6 feet in the row. It would be eligible to plant a few choice sorts against south and other sunny walls or paling, for earlier and larger fruit; and on north walls to ripen late in succession." Abercrombie. Forsyth says, "The market gardeners about London plant them in rows, from 8 to 10 feet apart from row to row, and 6 feet from plant to plant in the rows. In small gardens I would recommend planting them in quarters by themselves, at the distance of 6 feet between the rows, and 4 feet from plant to plant; or you may plant them round the edges of the quarters about 3 feet from the path; you will then have the ground clear for cropping, and a man, by setting one foot on the border, can gather the gooseberries without injuring the crop." Neill says, "In some places gooseberry bushes on the sides of the borders, are trained to a single tall stem, which is tied to a stake; this, though 6 or 8 feet high, occasions scarcely any shade on the border, and it does not occupy much room, nor exclude air; while, at the same time, the stem becomes close hung with berries, and makes a pleasant appearance in that state." Edinb. encyl. art. hort. § 161. Maher observes (Hort. trans. 2. p. 146.) "that as the crop of ripe fruit is often injured by having the largest and earliest berries prematurely gathered, whilst green, for tarts, a sufficient number of trees of such varieties as are earliest should be planted in a separate quarter of the garden, and devoted exclusively to the use of the kitchen, for tarts and sauce."

Mode of bearing.—"The gooseberry produces its fruit not only on the shoots of last summer, and on shoots 2 or 3 years old, but also on spurs or snags arising from the elder branches along the sides; but the former afford the largest fruit. The shoots retained for bearers should therefore be left at full length or nearly so." Abercrombie.

Pruning.—"The bushes will require a regular pruning twice in the year."

Summer pruning.—"Where any bushes are crowded with cross and water shoots of the same year, shading the fruit from the sun, and preventing the access of air, thin the heart of the plant and other tufted parts moderately, pinching off or cutting out close what spray is removed; but do not touch the summer shoots in general. Maher says, it will greatly contribute to the perfection of the fruit, if the very small berries are taken away with a pair of scissors about the middle or end of May; and these small berries will be found quite as good for sauce or gooseberry cream as the larger."

Winter pruning.—"You may proceed to the winter pruning any time from November until the end of February, or until the buds are so swelled, that further delay would endanger their being rubbed off in the operation. Cut out the cross-shoots and water-shoots of the preceding summer, and the superfluous among crowded branches. Prune long ramblers and low stragglers to some well placed lateral or eye; or if any under straggler spring very low, cut it away. Of last year's shoots retain a sufficiency of the best well-placed laterals and terminals in vacant parts, to form succession bearers, and to supply the places of unfruitful and decayed old-wood, which, as you proceed, should be removed. Mostly retain a leading shoot at the end of the principal branch, leaving it either naturally terminal, or, where the branch would thus be too extended, pruning in some competent lateral within bounds. The superfluous young laterals on the good main branches, instead of being taken off clean, may be cut into little stubs of one or two eyes; which will send out fruit-buds and spurs. Of the supply reserved for new bearers, a small number will probably require shortening, where too extended, or curvd incommodiously; leave these from 8 to
12 inches in length, according to strength and situation; those of moderate extent and regular growth will require very little shortening, and many none at all. Observe, too close cutting or general shortening, occasions a great superfluity of wood in summer; for the multiplied laterals thus forced from the eyes of the shortened branches, increase to a thicket, so as to retard the growth, and prevent the full ripening of the fruit; on which account it is an important part of pruning to keep the middle of the head open and clear, and to let the occasional shortening of the shoot be sparing and moderate. Between the bearing branches keep a regular distance of at least 6 inches at the extremities, which will render them fertile bearers of good fruit. Some persons, not pruning the gooseberry bush on right principles, are apt to leave the shoots excessively close and tufted, while they shorten the whole promiscuously; others sometimes clip them with garden shears to close round heads; in consequence of being pruned in these methods, the bushes shoot crowdedly, full of young wood in summer, from which the fruit is always very small, and does not ripen freely with full flavour." Forsyth says, "Many of the Lancashire sorts are apt to grow horizontally, and the branches frequently trail on the ground, which renders them liable to be broken by high winds, especially when they are loaded with fruit. In that case I would recommend 2 or 3 hoops to be put round them, to which the branches may be tied to support them, and prevent their being broken by the wind." S. Jeeves has tried training gooseberries on an arched trellis in the manner of a herculean or arboreum walk. For this purpose he plants in rows, 6 feet apart, and the plants 3 feet distant in the row. He chooses the strongest growing kinds, and trains 4 branches at 9 inches distance from each plant, till they meet at the top. The advantages of this plan are beauty of appearance, fruit not splashed by rain, easily gathered, and the ground more readily cultivated.

Insects and diseases, &c.—The caterpillars of saw-flies (Teenthredinidae, Leach), of butterflies (Papilia, Lin.), and of moths (Phalaena, Lin.), are well known as serious enemies to gooseberries. The larvae of the Tenthredinidae have from 16 to 20 feet, a round head, when touched they will roll themselves together. They feed on the leaves of the gooseberry, apple, and most fruit trees, as well as on roses, and other shrubs and plants. When full grown they make, sometimes in the earth, and sometimes between the leaves of the plants on which they feed, a nest-work case, which, when complete, is strong and gummy, and in that change to the pupa incomplete, which for the most part remains during the winter in the earth. The perfect fly emerges early in the ensuing spring; its serrated sting is used by the female in the manner of a saw, to make incisions in the twigs or stems of plants, where it deposits its eggs. The Caledonian Horticultural Society having requested information respecting the best method of preventing or destroying the caterpillar on gooseberries, received various communications on the subject, and the following are extracts from such as they deemed fit for publication.

J. Gibb describes the large black, the green, and the white caterpillar, with his methods of destroying them:

"During the winter months the large black kind may be observed lying in clusters on the under parts, and in the crevices of the bushes; and even at this season (Feb.) I find them in that state. In the course of 8 or 10 days, however, if the weather be favourable, they will creep up in the daytime, feed on the buds, and return to their nest during the night. Whenever leaves appear upon the bushes they feed upon them till they arrive at maturity, which is generally in the month of June; after which they creep down upon the under sides of the branches, where they lodge till the crust or shell is formed over them. In July they become moths, and lay their eggs on the under side of the leaves and bark. The produce of these eggs, coming into life during the month of September, feed on the leaves so long as they are green, and afterwards gather together in clusters on the under side of the branches, and in the crevices of the bark, where they remain all the winter, as already said. Winter is the most proper time for attacking this sort with success, as their destruction is most effectually accomplished by the simple operation of pouring a quantity of boiling-hot water upon them from a watering-pan, while no injury is thereby done to the bushes."

"The green sort are at present (February) in the shelly state, lying about an inch under ground. In April they come out small flies, and immediately lay their eggs on the veins and under sides of the leaves. These eggs produce young caterpillars in May, which feed on the leaves till June or July, when they cast a blackish kind of skin, and afterwards crawl down from the bushes into the earth, where a crust or shell grows over them, and in that state they continue till the following April. The only method which I have hitherto found effectual for destroying these is, 1st, to dig the ground around the bushes very deep during the winter season, by which means the greater part of them are destroyed, or buried too deep ever to penetrate to the surface; 2ndly, in April, when the flies make their appearance, to pick off all the leaves on which any eggs are observable; this is a tedious operation, but may be done by children. If any of the enemy should escape both these operations, they will be discernible as soon as they come into life, by their eating holes through the leaves, and may then easily be destroyed, without the least injury to the bushes or fruit."

"The white kind, otherwise called borers, are not so numerous as the other kinds, though very destructive; they bore the berry, and cause it to drop off; they preserve themselves during the winter season in the chrysalis state, about an inch under ground, and become flies nearly at the same time with the last mentioned kind; they lay their eggs on the blossoms, and these eggs produce young caterpillars in May, which feed on the berries till they are full grown, and then creep down into the earth, where they remain for the winter in the shelly state." Caled. mem. vol. 1.

Macmurray, in autumn, pours a little cow urine around the stem of each bush, as much as suffices merely to moisten the ground. The bushes which were treated in this manner remained free of caterpillars for two years; while those that were neglected or intentionally passed over, in the same compartment, were totally destroyed by the depredations of the insects. A layer of sea-weed laid on in autumn, and dug in in the spring had the same effect for one year. Caled. mem. vol. 1. p. 95.

R. Elliott says, "take 6 pounds of black currant leaves, and as many of elder leaves, and boil them in 12 gallons of soft water; then take 14 pounds of hot lime, and put it in 12 gallons of water; mix them altogether; then wash the infested bushes with the hand engine; after that is done, take a little hot lime, and lay it at the root of each bush that has been washed, which completes the operation. By these means you completely destroy the caterpillars, without hurting the foliage. A dull day is to be preferred to any other for washing. When the foliage is all off the bushes, wash them over with the hand engine to clean them of decayed leaves; for this purpose any sort of water will do; then stir up the surface of the earth around the roots of the bushes, and lay a little hot lime about them to destroy the eggs. Thus I have never found to fail of success since the first trial, 6 years ago. The above mentioned proportion of leaves, lime, and water, will serve for 2 acres of ground or more, covered with bushes or trees in the ordinary manner, and will cost very little money indeed. The same proportion is
to be observed in making a wash for the rest of the trees or bushes.

J. Machray procured some tobacco and soft or black soap, and boiled a quarter of a pound of tobacco with the one pound of soft soap in about 18 scotch pints of water; and kept stirring the liquid while boiling with a whisk, in order to dissolve the soap; this liquor, when milk-warm, or so cool as not to hurt the foliage, he applied to the bushes with a hand-squirt, in the evening, and in the morning found all the ground under the bushes covered with dead caterpillars. This practice he continued for six years, always when he saw any symptoms of the approach of caterpillars.

J. Tweedie, in the course of any of the winter months, pares all the earth from under the bushes to the depth of about 3 inches, into a flat ridge between the rows; and on the first dry day following, either treads, beats, or rolls these ridges, and trenches the whole down 1½ or 2 spades deep, observing to tread the foot earth into the bottom of the trench.

Foryth's method is as follows: "Take some sifted quick-lime, and lay it under the bushes, but do not at first let any of it touch the branches or leaves; then shake each bush suddenly and smartly, and the caterpillars will fall into the lime; if the bush be not shaken suddenly, the caterpillars, on being a little disturbed, will take some time to crawl as not easily to be shaken off. After this is done, sift some of the lime over the bushes; this will drive down those which may have lodged on the branches. The caterpillars ought to be swept up next day, and the bushes well washed with clear lime-water mixed with urine; this will destroy any caterpillars that may still remain, and also the aphides, if there are any on the bushes."

Of all the methods for destroying caterpillars mentioned above, Gibb's appears to us the only plan on which any reliance can be placed.

**Taking the crop.**—"From gooseberries being useful for different purposes, both in a green and in a mature state, and from the compass of time afforded by early and late sorts, they are in season in great request 4 or 5 months in summer, from April till September. The early sorts on south walls come in for gathering in small green berries for tarts, &c. in April or early in May, and attain maturity in June. From common standard bushes an abundant supply is yielded in May and June of gooseberries in a green state; and in proportion as part is reserved to ripen, a succession, in full size and maturity, is obtained in June, July, and August. Some late kinds, either planted in shady situations, or shielded from the sun in their ripening state, continue good on the bush till September.

**Prolonging the crop.**—In addition to planting late sorts in shady situations, the bushes, whether standards or trained, may be matted over when the fruit is ripe, and in this way some of the reds, as the Warrington, and the thick-skinned yellow sorts, as the Mogul, will keep on the trees till Christmas.

**Forcing.**—The gooseberry may be forced in pots or boxes placed in pits, or in the peach-house or vinery. The plants in pots or boxes, are placed in pits, or in the peach-house in January, and has ripe fruit in the end of April, which is sent to table growing on the bush.

**Common Gooseberry.** Fl. March, April. Britain. Shrub 4 to 6 feet.

* Flowers red.

18 R. speciosum (Pursh. fl. amer. sept. 2. append. 731.) shrub bristly and prickly; spines tripartite; leaves roundish-oval, 3-5 lobed, obtuse; peduncles few-flowered; bracteas broadly ovate; calyx cylindrical, 4-parted, with erect glandular segments; germs and pedicels beset with glandular bristles. ½ H. Native of North California and Monterey, and Mexico. Sweet. R. vol. III.

19 R. stamineum, Smith in Rees' cyc. R. triacantho, Mezzies. R. fuchsioides, Mc. et Sesse, fl. mex. icon. ined. Flowers large, scarlet, pendulous, very like those of a Fuchsia. Stamens much exserted; style long, entire; petals cuneate, inserted on the very short tube of the calyx, the margins involute. Fruit hispid. (f. 32.)

**Showy Gooseberry.** Fl. May, June. Clt. 1824. Sh. 4 to 5 ft. 19 R. Meneziesii (Pursh. fl. amer. sept. 2. append. p. 732.) plant very prickly; spines triplicate; leaves cordate, truncate at the base, 5 lobed, serrated, wrinkled from veins, clothed with pubescence beneath; peduncles usually 1-flowered; calyx cylin-
drically campanulate, deeply 5 parted, glandular; stamens 5, inclosed; style a little exserted; germs and peduncles prickly. ½ H. Native of North California, at Port Trinidad. R. ferox, Smith in Rees' cyc. The present species and the preceding are very showy plants, from their large bright red or crimson glandular flowers, and may be considered as holding the same rank among the gooseberries as R. sanguineum does among the currants.

**Menezies's Gooseberry.** Shrub 4 to 5 feet.

**Sect. II. BOTRYCA’RFUM (from βορυς, botrys, a raceme, and καρπος, karpos, a fruit; fruit disposed in racemes). This is an intermediate section between sect. 1. Grossularia, and sect. 3. Ribesia, having the prickles of the former, and racemose flowers and small fruit of the latter. R. lacistre, no. 9. ought probably to have been placed in this section.

20 R. ORIENTALE (Poir. encycl. suppl. 2. p. 856.) plant rather prickly; leaves 5-5 lobed, orbicular somewhat reniform, cut, hairy; lobes rather deep, obtuse; pedioles hairy; racemes erectish, few-flowered; bracteas longer than the flowers; style bident at the apex. ½ H. Native of Syria. Des. arb. 2. p. 88. Flowers greenish yellow. Fruit like those of the currant.

**Eastern Gooseberry.** Fl. April, May. Clt. 1824. Shrub 4 to 6 feet.

21 R. saxatilis (Pall. nov. act. petr. x. p. 276.) prickles scattered; leaves roundish-cuneiform, bluntly 3 lobed; racemes erect; bracteas linear, shorter than the pedioles; calyx flat, scabrous; petals small, of a livid green colour. ½ H. Native of Siberia. Led. fl. ross. alt. ill. t. 239. R. alpinum, Sievers in Pall. nord. beitr. p. 7. 345.? Flowers small, greenish purple. Petals spatulate. Berries smooth, globose, bractless, dark purple, when mature full of edible pulp, rarely so large as common currants, and like them.

**Rock Gooseberry.** Fl. April, May. Clt. 1819. Shrub 4 to 5 feet.

22 R. DIACA’NTHA (Lin. fil. suppl. p. 157.) prickles twin, spiral; leaves cuneiform, tripartite, quite glabrous, shorter than the pedioles; lobes toothed; racemes long, erect; flowers on long pedicels; bracteas length of flowers; sepals roundish, yellowish; petals small, roundish. ½ H. Native of Tahiti and Siberia. Berl. l. c. t. 2. f. 8. Pall. fl. ross. 2. p. 36. t. 66. append. no. 79. t. 2. f. 2. Berries about the size of currants, red, of a sweetish acid taste.

**Two-spined Gooseberry.** Fl. May, June. Clt. 1781. Shrub 4 to 5 feet.

**Sect. III. RIBE’SIA (an alteration from Ribes). Shrubs unarmed (f. 33.). Racemes for the most part many-flowered (f. 33.) Leaves plicate. Calyx campanulate (f. 33. b.), or cylindrical.
* Flowers greenish or greenish-yellow.

23 R. alpinum (Lin. spec. 291.) leaves 3-5-lobed, obuse, shining beneath, pubescent above; racemes erect, rather crowded; bracteas lanceolate, ventricose, bearing a few glands, usually longer than the flowers; petals minute, almost abortive; anthers more or less nearly sessile; styles joined. _H._ Native of Europe and Siberia, on the Alps; in Britain, in woods, in the north of England; near Bradford, Yorkshire; near Ripon and in Durham; also of Scotland, but rare. Smith, engl. bot. 704. Fl. dan. t. 698. Jacq. aust. 1. t. 47. Flowers greenish-yellow. Berries red, elliptic, mucilaginous and insipid. _Var. a. stérilé_ (Wallr. sched. p. 108.) flowers flat, destitute of the germ, fugaceous; racemes dense, many-flowered; anthers nearly sessile, bearing pollen, acute. _R. diococum_, Meech. meth. p. 683.

_Var. b. baceiferum_ (Wallr. l. c.) flowers somewhat hypocryptiform; racemes few-flowered; anthers distinctly pedicellate, but imperfect; style hardly semi-bifid; germ large. Cultivated in gardens.

_Var. c. pinifolium_ (Lindl. in hort. trans. 7. p. 244.) in every respect the same as the species, but not one-third the size, never exceeding 3 feet.

Alpine Currant. Fl. April, May. Britain. Shrubs 3 to 6 ft. 29 R. salicifolium (Pursh, fl. amer. sept. p. 163.) all parts of the shrub are full of resinous glands; leaves 3-5-lobed, roundish; racemes erect; calyx flat; petals bluntly rhomboidal; bracteas linear, longer than the pedicels. _H._ Native of North America, on the mountains. Sims, bot. mag. 1583. Berl. l. c. t. 2. f. 10. Flowers greenish yellow. Berry hairy, red? Perhaps the flowers are dioecious. Very like _R. alpinum._

Resinous Currant. Fl. April, May. Clt. 1800. Sh. 3 to 5 ft. 25 R. ciliatum (Willd. mm. ex Rom. et Schultes, syst. 5. p. 500.) plant beset with glands; leaves 5-lobed, deeply cordate, doubly crenate-serrate, ciliated, glabrous above, but hairy on the nerves and veins beneath; lobes acute; petals beset with glandular hairs; racemes solitary. _H._ Native of Mexico, on the burning mount Jorullo, at the elevation of 1500 feet. R. Jorullénse, H. B. et Kunth, nov. gen. amer. 6. p. 61. Nearly allied to _R. macrobrotys._

Ciliated Currant. Shrubs 3 to 4 feet.

26 R. macrobrotys (Ruiz et Pav. fl. per. 3. p. 12. t. 202. f. a.) leaves cordate, lobed, deeply serrate; petals ciliated at the base; racemes very long, pendulous, hairy; bracteas linear-subulate, pubescent, nearly the length of the pedicels; calyces pubescent; petals small, red. _G._ Native of Peru, on the Andes, in groves. Berl. l. c. t. 2. f. 17. Berries greenish, hairy.

Long-racemous Currant. Shrubs 4 to 5 feet.

27 R. alibifolium (Ruiz et Pav. fl. per. 3. p. 12. t. 132. f. 6.) leaves rather cordate, deeply serrate; racemes twice the length of the leaves, pendulous; bracteas spatulate, ciliated, length of pedicels; petals roundish, purplish; anthers nearly sessile. _H._ Native of Peru, in groves about Munna. Berl. l. c. t. 2. f. 18. Berries globose, rather hairy. Allied to _R. macrobrotys._

White-leaved Currant. Shrubs 4 to 5 feet.

28 R. bracteatum (Doug. mm. ex Hook. fl. bor. amer. 1. p. 222.) leaves on long petioles, cordate, deeply 5-7-lobed; lobes acuminate, cut, doubly serrated, hispid above, but full of resinous dots beneath; racemes often terminal, at length reflexed; pedicels erectly spreading, pubescent, exceeding the spatulate bracteas; calyx rotate, glabrous; petals minute, roundish; galls and berries full of resinous dots. _H._ Native of the north-west coast of America, at the confluence of the Columbia with the ocean. This is a very remarkable and elegant shrub, with leaves nearly as large as, and resembling, those of _Sycamore_; these, as well as the fructified racemes, have a very strong resemblance to _R. macrobrotys_; but the flowers are widely different. Flowers purplish-yellow. Berries about the size of those of _R. ribrum._

Macrobrotys Currant. Shrubs 5 to 8 feet.

29 R. stipitatum (Humb. et Bppl. in Wild. herb. ex Rom. et Schultes, syst. 5. p. 501.) leaves ovate, rather cordate, 3-lobed, reticulated beneath from hairy nerves and veins, and pale, but blackish green above; lobes deeply serrated, middle one the largest; petioles pilose, glandularious, and somewhat tomentose; racemes reflexed; bracteas dentately ciliated; petals roundish-obovate; styles bifid. _H._ Native of South America, in cold places on Mount Antisanza, at the elevation of 300 feet. Berl. l. c. t. 2. f. 13. R. frigidum, H. B. et Kunth, nov. gen. amer. 6. p. 62. Flowers flesh-coloured. Berries hispid.

Hairy Currant. Shrubs 4 to 5 feet.

30 R. fraîgrans (Pall. nov. act. pet. 5. p. 377. t. 9.) leaves glabrous, on long petioles, 3-5-lobed, greener above than below; racemes erect, stiff; flowers campanulate, white, sweet-scented; bracteas deciduous; petals lanceolate, acute, spreading. _H._ Native of Siberia, on the higher mountains. Berries red, of a very sweet taste. From the under surface of the leaves exudes, in very frequent little yellow drops, a very fragrant balsamic exudate, having a peculiar agreeable odor.

Fragrant Currant. Shrubs 1 to 2 feet.

31 R. procumbens (Pall. fl. ross. 2. p. 35. t. 65.) leaves bluntly lobed; lobes serrated; lateral ones a little cut; racemes erect; peduncles long, setaceous; segments of the limb of the flower pubescent, acute, of a livid purplish colour; anthers hardly rising from the calyx. _H._ Native of Siberia, in moist shady places. Flowers flatish. Berries very grateful to the taste, rufescent when ripe. Ait. hort. kew. 2. p. 41. _R. polycarpum_, Gmel. syst. veg. p. 419.


32 R. prostratum (Lob. st. p. 1. p. 3. t. 2.) leaves deeply cordate, 5-7-lobed, glabrous; lobes acute, cut, doubly serrated, naked on both surfaces; racemes erect, loose, slender; bracteas small, obtuse, much shorter than the pedicels, which are beset with glandular bristles; calyx rotate; galls and berries beset with glandular bristles. _H._ Native of Newfoundland; throughout Canada; and in woods on the Rocky Mountains. Berl. l. c. t. 2. f. 12. R. glandulosum, Ait. hort. kew. ed. 1. p. 12. Bigel. fl. bot. ed. 2. p. 9. _R. glandulosum_, Richards, in Frankl. 1st journ. ed. 2. append. p. 7. R. laxifolium, Richards, in Frankl. 1st. journ. ed. 2. append. p. 7. Berries large, redish. This is a very distinct species.


33 R. trifidum (Mich. fl. bor. mer. 1. p. 110.) leaves smoothish, moderately lobed; racemes loosely many-flowered, pubescent; flowers small; calyx segments rather trifid; berries hairy, red. _H._ Native of North America, near Quebec, and at Hudson's Bay. Lobes of leaves acutish. Racemes weak, nearly like those of _R. ribrum_, but the flowers smaller. Petals purplish, spatulate, rounded at the apex. Perhaps this is the same as _R. prostratum._


34 R. takare (D. Don, prod. fl. nep. p. 208.) leaves cordate, 3-lobed, acuminate, doubly serrated, pubescent on both surfaces, as well as on the branches. _H._ Native of Nipal, in Srinagar. Leaves as large as those of _Sycamore_. Flowers unknown. The bush is called Takare by the Nipalese.

Takare Currant. Shrubs.
GROSSULARIÆ. I. RIBES.

35 R. MULTIFLORUM (Kit. in Röm. et Schultes, syst. 5. p. 492, but not of H. B. et Kuntl.) leaves 5-lobed, cordate, tomentose beneath; racemes very long, pendulous, drooping; bracteas shorter than the flowers; petioles length of leaves; petals wedge-shaped; styles bifid, and sometimes distinctly trident.  H. Native of Croatia. Sims, bot. mag. 2368. Berl. l. c. t. 2. f. 11. R. spicatum, Schultes, oestr. fl. ed. 1. p. 453.


36 R. ACUMINATUM (Wall. cat. no. 6834.) branches glabrous; leaves glabrous above, but with a few scattered hairs beneath, 3-5-lobed; lobes acuminate, serrated; racemes axillary, erect; peduncles pubescent; berries nodding; calyx campanulate; petals rounded at the apex.  H. Native of Nipau, on Sirmore and Emodi. Berries red, about the size of red currants.

Acuminated-leaved Curant. Shrub 4 to 6 ft.

37 R. SPICA'TUM (Robs. in Linn. trans. 3. p. 240. t. 21.) leaves roundish-cordate, 3-5-lobed, covered with soft pile above, and tomentum beneath; racemes erect; flowers more or less pedicellate; bracteas obtuse, tomentose, much shorter than the pedicels; sepals roundish-cuneate; petals oblong; styles bifid.  H. Native of the North of England, in woods, near Richmond, in Yorkshire; and between Piersbridge and Gainford, Durham. Smith, engl. bot. 1290. Berl. l. c. t. 2. f. 16. Berries glabrous, globoso, color and taste of those of R. rubrum. The tree currant affords a fruit rather smaller and more acid than the common red currant; but by crossing and cultivation might, no doubt, be greatly improved; and from its comparatively tree-like habits, might be a more convenient fruit shrub in respect to crops around it.

Spiked-flowered Curant. Fl. April, May. Engl. Sh. 4 to 6 ft.


Stiffish-racemated Fl. April, May. Clt. 1812. Sh. 4 to 6 feet.

40 R. VILLÈSUS (Wall. cat. no. 6832.) branches pubescent; leaves nearly orbicular, cordate, bluntly 3-lobed, villous as well as the petioles; racemes erect, few-flowered.  H. Native of Sinaurug.

Villous Currant. Shrub 5 to 6 feet.

41 R. ALBÈNÈ'RIÈVUM (Michx. l. c.) leaves short, petiolate, deeply and acutely lobed, smoothish, with whiths nerves; racemes recurved.  H. Native of Canada, and on the Catskill Mountains, in the state of New York. Flowers small. Berries red, glabrous.


42 R. RUÈ'BÈU'M (Eschscholtz, pl. calif. p. 281.) leaves cordate, 3-lobed, clothed with white tomentose pubescence be-
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Var. a, sybœtre (D. C. fl. fr. 4. p. 406.) leaves and berries smaller; lobes of leaves short.

Var. b, hortense (D. C. l. c.) leaves larger, sometimes variegated; berries sweeter and larger than in var. a. Cultivated in gardens.

R. rubrum. Lois. nov. dict. 3.

Var. g, cœnœnus (Berl. mss. ex D. C. prod. 3. p. 481.) leaves rather tomentose beneath; sepals red; cells of anthers distant; berries pale red. R. rubrum domesticœm b, fœcis cœneœis, Wallr. sched. p. 106.

Var. c, variegœtûm (D. C. prod. 3. p. 481.) berries variegated.

Waller. l. c.


The red currant is called Groseille ordinaire à grappes, or d'outre mer, in French; Johannesberge, in German; and Uveta, in Italian. It is a low shrub, with smooth branches, downy leaves, yellowish green flowers, disposed in pendulous racemes, which appear in May, and the fruit ripens in June and July. The berries of this shrub, in its wild state, are red; but cultivation has produced white and pale red berries. Professor Martyn observes, that “The currant does not seem to have been known to the ancient Greeks and Romans, as the southern nations of Europe have not even an appropriate name to it at this day. The old French name, grossesœilles d'outre mer, and the Dutch, beskins overzee, proclaim their having been strangers imported. Our English name of currant is evidently from the similitude of the fruit to that of the Corinth grape, the small grape of Zante, or the common grocers' Corinths or currants. The red currant has been long cultivated in Britain, and very much improved in the size of the bunch and berry.”

Use.—The fruit is acceptable at the dessert, being of an agreeable acid taste. It is much used for jellies, jams, and wines. Forsyth says it is the most useful of all the small fruit, either for the table and kitchen, or for preserving, making wine, &c., and continues longer in succession than any other. According to Withering, the juice forms an agreeable acid to punch; and Professor Martyn says it was a common beverage in Paris in 1768. Its medicinal qualities are similar to those of other sub-acerb fruits, allaying thirst, lessening an increased secretion of the bile, and correcting a putrid and scorbatic state of the fluids.

Varieties.—There are as follows:

* Red currants.

1. Common red, grossieril rouge à petit fruit, grossieril ordinaire à fruit rouge.

2. Red Dutch, large red Dutch, New red Dutch, large red, large bunched red, Morgan's red, red grape, grossieril rouge à gros fruit. This is the best of the red currants for all purposes.

3. Knight's large red.

4. Knight's sweet red currant.

5. Knight's early red currant.

6. Champagne, grossieril à fruit couleur de chair.

7. Striped-leaved currant, and variegated-leaved currant.

8. Large pale red Dutch.

** White currants.

1. Common white currant, grossieril à fruit blanc.

2. White Dutch currant, new white Dutch, Morgan's white, white crystal, white Leghorn, pearl white. This is one of the very best of the white currants.

3. Pearl white, blanc perlé.

4. Sparty's white.

Propagation and nursery culture.—The same as in the goose-berry. With a view to obtaining new improved varieties from seed, Mr. Knight procured cuttings, in the year 1810, of the finest varieties of the red and white currants, which he planted in pots of very rich mould, and placed under a south wall, to which the trees were subsequently trained. At the end of 3 years, within which period the pots had been as often changed, the trees were first suffered to produce blossoms. These were, with the exception of a very small number, removed from the white currant bushes, as soon as their buds unfolded; and those which remained were deprived of their stamens while immature, and subsequently fertilized by the pollen of the red variety. The seeds thus obtained were sown in pots, as soon as the fruit had become perfectly mature, and were subjected early in the following spring to the artificial heat of a forcing-house; by which means, and by proper subsequent attention, the plants grew more than a foot in height the first season. At 2 years old, in the year 1816, several of the plants, and in 1817, the greater part of them, produced fruit of great variety of character and merits; but out of about 200 varieties, only 3 red and 2 white appeared to possess greater merits than their parents.

Final planting.—The season for planting, on a dry soil, is any time in open weather from the fall of the leaf till February or March. Plants expected to bear the following summer, are best moved in October, unless the ground be wet in winter. Allot a competent supply of standard bushes, to be planted chiefly in the kitchen garden, in a single row, round the main quarters, or in the outward borders, or some in cross rows, to divide extensive quarters. Plant them from 5-10 feet distance in the row. To raise large supplies, full plantations are formed in parallel rows, with intervals between the rows of 8 or 10 feet, and between the trees in each row of 6 feet. Where convenient, have also some choice sorts, trained against walls, paling, or trellis-work, of different aspects, to obtain early and late fruit in perfection; some against a south exposure for early production; others on east, west, and north walls for intermediate succession and late fruit. Plant them at 6, 8, or 10 feet distance; letting them occasionally fill up the vacant spaces between other wall-trees. The branches should be allowed to advance from near the bottom, and be trained in a nearly horizontal direction, from 3-6 inches asunder. Before nailing them, cut out superabundant and irregular growths, retaining a competency of regular shoots for orderly training, among which, if any are of very considerable length, prune them to moderate extent. Some may likewise be trained as espaliers, in a detached row in the borders or divisions of the quarters. The bushes so trained may either be left to grow without support, or be tied occasionally to stakes, and the branches thus will not overspread the ground. Being kept moderately thin and regular, they will bear fine large fruit, and make an agreeable appearance.

Mode of bearing.—Currant bushes, in general, bear the fruit both on the young wood of one, two, or three years' growth, and on the older branches from small spurs and snags along the sides, which continue for several years fruitful; but the fruit produced on the last year's shoots are always the finest, especially when the old mother bearers have borne more than 4 years.
Pruning.—The chief part of the future culture is seasonal pruning. After the plants are furnished with full heads, they produce many superfluous and disorderly shoots every summer, crowding the general bearers, so as to require reenforcement and regulation, both in the young growth of the year and older wood. The season for the careful pruning is winter; but a preparatory part is performed in summer, to thin the superfluous shoots of the year where too crowded, excluding the sun and air from the fruit. First as to standards:—

Summer pruning.—In May or June cut out close the most irregular shoots, rising in the centre of the bush with all the cross and water shoots, to admit more freely the essential influence of the air and sun, and promote the growth of the fruit and improve its flavour. Also twist off all root suckers as they appear.

Winter pruning.—This extends both to the old and young wood; the time for it is when the plant is at rest. Of the shoots of the preceding summer, cut out the cross-placed and the otherwise irregular, with those which are not wanted for vacancies; but superfluous good lateral shoots are to be cut down to short stubs or artificial spurs, about half an inch long, so as to leave an eye or two, in order that they may send out fruit-shoots and spurs. With regard to the old bearers, take away those which are naked, or getting unfertile, or of which the fruit is declining in size; reduce any of excessive length, pruning in to some well-placed lateral young shoot, to preserve the head within some regular compass; cut out also any decayed or cankery parts; retain a competency of the finest best-placed new shoots above and below vacant parts, to come in for successive bearers, or to supply the places of defective old wood, and preserve a leading shoot to the principal branches, where within orderly limits, shortening such terminal shoots as are of greatest length to 10, 12, or 15 inches, according to their strength and the situation of the branches, and leaving those of small extent mostly entire. Take care of the small lateral fruit-spurs, and occasionally select short lateral shoots of 1, 2, or 3 inches, for bearing fruit; or similar small shoots may be cut to short snags of an inch or two long, also for fruiting. Thin out spurs of the old branches where very thick. As the old fruit branches decline bearing, or decay, cut them away, taking care to provide young ones in succession; and thus keep the bushes always furnished with full-bearing branches, and advancing young bearers, in a regular open expansion, 6, 8, or 10 inches asunder at the extremities, circumscribing the general head within the height of 3 or 4 feet, or 5 at most.

"Currants of the finest quality," Mr. Neil observes, "are raised by Macdonald, at Dalkeith House. A good deal depends upon the way in which he manages the bushes, especially during the ripening of the fruit. He prunes the bushes at the usual season of mid-summer, shortening the last year's shoots down to an inch or an inch and a half. Next summer the plants show plenty of fruit, and at the same time throw out plenty of strong shoots. As soon as the berries begin to colour, he cuts off the summer shoots to within 5 or 6 inches before the fruit. This is commonly done with the garden shears, with which a man may go over half an acre of bushes in a day. Sun and air thus get more free access, and more of the vigour of the plant is directed to the fruit; the berries are found not only to be of higher flavour, but larger than usual."—Neil, Cal. mem. vol. 2.

To wall-bushes, espaliers, and fan-standards, without support, the same course of summer and winter pruning is applicable, with the obvious variations required by their figure. In training wall-trees, 2 branches are led in an horizontal direction along the bottom of the wall or trellis, perhaps half a foot from the surface of the earth, and the growths from these of all upright shoots, which will admit of being arranged at the distance of 5 or 6 inches from each other, is encouraged. Fan standards are sometimes trained in a manner nearly similar, and sometimes with the branches radiating from the crown of the stem.

Insects, &c.—The red currant is occasionally attacked by the caterpillar, and very frequently by the aphides ribes, Lin. which changes the colour of the leaves to red, pits and pucker them, and causes the fruit to be shrivelled and colourless. Forsyth says, "As currants are very liable to be devouried by earwigs, which take shelter under their leaves and branches, bundles of bean-stalks should be hung up some time before the bushes are covered with mats or nets. If proper attention be not paid to this, the fruit will generally suffer very much from these insects. After the bushes are covered, take the mats off once in 3 or 4 days, and kill the earwigs that have got into the bean-stalks, which it will be necessary still to keep hung up. As there is a sweetness in the inside of bean-stalks which attracts the earwigs, they very regularly take shelter in them from rain."

Taking the crop and preserving.—The ripening fruit comes in for small gatherings in June, advances to maturity in July, and continues in perfection till the end of August; or if trees in a full exposure are timely defended from birds and the full sun, with garden mats, or protected with nets where they grow against walls, the fruit may be continued good till September or October. Gather in a dry state, as in rainy weather they lose their flavour.

Forcing.—To obtain early currants by forcing, let some good bearing trees, in pots, be placed early in January or February, in any common forcing department: they will produce ripe fruit in April or May.

Red and White Currant. Fl. April, May. Brit. Sh. 4 to 6 ft. 50 R. glandulosum (Ruiz. et Pav. fl. per. t. 253. f. 6, but not of Kit.) leaves cordate, bluntly 5-lobed, doubly serrated, rugged; racemes short; calyx glandular, pubescent. H. Native of Chili, on wooded hills. Berl. l. c. t. 2, f. 20.


51 R. cananula'tum (Humb. et Bonpl. in Wildl. herb. ex Rœm. et Schultes, 2. p. 500.) leaves somewhat 5-lobed, doubly crenated, cordate, hairy beneath; lobes obtuse; petals ciliated with glandular hairs; racemes pendulous; calyx campanulate; petals oblong-spatulate; styles bident. H. Native of Mexico, near Moran, at the height of 3900 feet. R. affine, H. B. et Kunth, nov. gen. et spec. amer. 6. p. 60. Flowers white. Hardly distinct from the following species.

Campanulate-calyxced Currant. Shrub 4 to 5 feet.

52 R. kirt'nu (Berl. mss. ex D. C. prod. 3. p. 482.) leaves somewhat 5-lobed, doubly serrated, rather cordate at the base, pubescent; racemes solitary or numerous, crowded, erect; calyx campanulate; petals spatulate, reflexed; stamina 5-6, hardly shorter than the petals; styles 3-4-clerit; stigmas capitate. H. Native of Mexico, along with the preceding. R. multiflorum, H. B. et Kunth, l.c. but not of Kit.

Kint's Currant. Shrub 4 to 6 feet.

53 R. tri'ste (Fall. nov. act. petro. 10. p. 378.) leaves 5-lobed; branches simple, twiggy, bearing leaves and racemes of flowers at the apex; racemes pendulous, both when in flower and in fruit; corolla flat; reddish on the outside, and yellowish inside; petals revolute. H. Native of Siberia, on the Mongol Mountains. Berries small, black, insipid. Root creeping.


54 R. glacia'le (Wall. cat. no. 6833.) branches smooth; glabrous above, but with a few scattered bristly hairs beneath, cordate at the base, 3-5-lobed at the apex; lobes acute, serrated; petals long, serrated at the base; racemes droop-
ING; calyx campanulate; petals longer than the calyx. \( \frac{7}{2} \). H. Native of Nipal, on Emodi and Gosingtan. Flowers white. Berries black.

**Icey Currant.** Fl. April, May. Clt. 1823. Sh. 4 to 6 ft. 55 R. sieratum (Lin. spec. 291.) leaves dotted from glands beneath, 3-5-lobed; racemes loose; bracteas minute, subulate or obtuse, much shorter than the pedicels; petals oblong; calyx campanulate, with reflexed segments. \( \frac{7}{H} \). Native of Europe and Siberia, in woods; plentiful in some parts of Britain about the banks of rivers, in the north of England and in Scotland. Berl. l. c. t. 2. f. 21. Woodv. med. bot. t. 75. Fl. dan. 556. Blackw. Smith, engl. bot. 1291. R. glidum, Mændch. meth. 683. Flowers whitish green; calyx often of a rich brownish red-colour. Stamens sometimes more than 5, and there are fewer petals; so that when there are 10 stamens, there are no petals; this change of petals into stamens is just the reverse of the process by which single flowers become double; but it is the only fact of the kind which has hitherto been observed. Stigmas bifid. Berries globose, black, glabular. The black currant is a shrub with smooth branches, strong smelling leaves, with a solitary 1-flowered pedicel at the base of each raceme. The flowers appear in April, and the fruit ripens in June and July, and changes from a green to a black colour. It is a native of most parts of Europe, especially the more northern parts. It abounds in the woods in the north of Russia, and the subalpine regions of Siberia, where the branches and berries are very large, and sapid. In Britain it is found in wet hedges, on the banks of rivers, in alder swamps, and sometimes in woods.

**Use.**—The fruit, which has a peculiar flavour, and disliked by some, is seldom brought to the dessert; but it is eaten in puddings and tarts, and made into jellies and wines. The Russians put the berries into brandy, and the Irish into whisky, in the same way as the English put cherries: the Russians also ferment the juice with honey, and so form a strong and palatable wine. Many cottagers, who cannot afford to mix green tea with black, substitute one or two dried leaves of the black currant, the flavour produced by which few are so acute as to distinguish from that of the mixture of green and black tea.

**The varieties are as follows:**

1. **Wild black.** 2. Black grape, Ogder's black grape. 3. Black Naples, Cassis of the French; this is one of the best of black currants. 4. Green-fruited black; fruit of a dingy colour, of no value. 5. Russian green.

**Propagation.**—By cuttings. See gooseberry.

**Soil and site.**—A moist soft soil, and shady situation; such as is afforded by borders of north exposure is preferable. Miller says, “the fruit is always best when the plants are placed in an open situation, in light loamy soil.”

**Final planting.**—As only a few plants are in general required for private gardens, these may be placed at the distance recommended for gooseberries, in the margin of a shady border, or against a wall of a north exposure. Mr. Neil says, it produces most fruit as a standard, but the largest berries when trained to a wall.

**Mode of bearing.**—The black currant bears chiefly on the shoots of the preceding year, and also from snags and spurs, which, however, are less abundant, and of smaller size in the black currant than in the gooseberry or red currant.

**Insects and diseases.**—The black currant is seldom attacked by insects, though, like the elder tree, it has its own varied caterpillar, which sometimes reduces it to a state of complete nudity.

**Gathering the fruit.**—See red currant.

**Forcing.**—The black currant may be forced in pots like the gooseberry. In Russia this is often done for the sake of the fragrance of the leaves.

**Black Currant.** Fl. April—May. Britain. Shrub 4 to 6 ft. 56 R. Biebersteinii (Berk. miss. ex D. C. prod. 3. p. 482.) leaves coriace, acutely 5-lobed, sharply and doubly serrated, rather pilose above, and villously tomentose beneath; segments numerous; racemes nodding; petals minute. \( \frac{7}{H} \). Native of Caucasus. R. Caucasicum, Bieberl. f. taur. suppl. 160. but not of Adams. Leaves having a strong scent like those of R. nigrum. Berries black.

**Bieberstein's Currant.** Shrub 4 to 6 ft. 57 R. Huculianum (Richards in Frankl. first journ. ed. 2. append. p. 6.) branches erect; leaves 5-lobed, quite glabrous above, full of resinous dots beneath, and are, as well as the petals, villos; gernments dotted; berries globose, glabrous, black; racemes erect, pubescent; racemes short; segments of the calyx, which is campanulate, spreading. \( \frac{7}{H} \). Native of North America, from Hudson's Bay to the Rocky Mountains, in the west, and as far north as lat. 57°. Flowers small; petals white. The fruit, and peculiar odour of the plant, are that of R. nigrum.

**Var. \( \beta \); racemes longer; calyx smoothish. \( \frac{7}{H} \). Native of the north-west coast of America, on the mountains of the Columbia, about the Kettle Falls. R. petiolare, Doug. in hort. trans. 7. p. 514.

**Hudson's Bay Currant.** Shrub 3 to 4 ft. 58 R. Flordium (Lher. stipr. 1. p. 4.) leaves full of resinous glands, 3 or 5-lobed, cordate, double-serrate; racemes pendulous, pubescent; bracteas linear, longer than the pedicels; calyx tubularly campanulate, glabrous; with the segments obtuse, and at length reflexed; gernments and black berries oval-glabrous, glabrous. \( \frac{7}{H} \). Native throughout Canada; and of Pennsylvania. Berl. l. c. t. 2. f. 22. R. nigrum \( \beta \), Lin. spec. 291. R. Pennsylvanicum, Lam. dict. 3. p. 49. R. recurvatum, Michx. fl. bor. amer. 1. p. 109. according to Torrey.—Ribesium nigrum, &c. Dill. elth. 2. t. 244. & f. 315. This is in many respects allied to R. nigrum, but its more copious, denser flowers, and especially the long bracteas, and more tubular calyx, will always distinguish it; the solitary pedicel too at the base of the flowers is wanting in this species. Petals oblong, rather erose at the apex.

**Flowering Currant.** Fl. April, May. Clt. 1729. Sh. 4 to 6 ft. 59 R. Inebranis (Lindl. in bot. reg. 1471.) leaves roundish, deeply 3-5-lobed, and deeply toothed, truncate at the base, glandular on both surfaces; petioles pubescent; peduncles 3-5-flowered, pendulous; flowers aggregate; calyx tubular, glabrous, with the segments recurved. \( \frac{7}{H} \). Native of North America. Calyx greenish white, with the tube 4 lines long. Leaves smelling like those of R. Flordium. The species was received from Mr. Floy of New York, under the name of intoxicating currant, but without any account of its quality. The berries probably possess some narcotic quality.

**Intoxicating Currant.** Clt. 1827. Fl. April. Shrub 3 to 4 ft. 60 R. Cre'sium (Doug. l. c. t. 7. p. 512. bot. reg. 1263. Hook. fl. bor. amer. 1. p. 234.) leaves small, cordate, lobed, serrated, clothed with glandular pubescence, glabrous, glaucous, full of white glands above; racemes pendulous, rather capitate; bracteas ovate, adpressed to the gernments, which are glabrous; flowers nearly sessile, cylindrical, rather angular; calyx segments small, reflexed. \( \frac{7}{H} \). Native of North West America, on the banks of the Columbia, and its southern tributary streams, from the Great Falls to the Rocky Mountains, in gravelly or sandy soil. In the small foliage, and few-flowered racemes, this species resembles the gooseberry tribe, but without any thorns. The flowers are rather large, pink, with a slight tinge of green, rather downy. White waxy dots like scales cover the upper surface of the leaf, whence the specific name.

**Waxy-leaved Currant.** Fl. April. Clt. 1827. Shrub 2 to 3 ft.
61. Ribes viscous simum (Pursh. fl. amer. sept. 1. p. 153.) leaves cordinate, obtuse, 3-5-lobed, deeply crenated, viscid from glandular pubescence: glands on both surfaces; racemes erect, corymbose; bracts linear-obovate, rather shorter than the pedicels, which are clothed with glandular hairs; calyx tubularly campanulate, with finely spreading oblong segments; gersims and fruit ovate-oblong, clothed with viscid hairs. ð. ñ. Native of North America, on the Rocky Mountains, and in dry plains in partially shaded places towards the sources of the Columbia; also on the summits of the hills near the Spoken and Kettle Falls, at an elevation of 8000 feet above the sea. Hook. fl. bor. amer. 1. p. 234. t. 74. Berries oblong-ovate, black. Flowers large, pale yellowish green. This is a very fine and remarkable species.


**Flowers deep red.**

62. Ribes atropurpureum (Meyer in Led. fl. ross. alt. ill. t. 231. fl. alt. 1. p. 268.) stem erect; leaves pubescent, nearly obicular, cordinate, 3-5-lobed; lobes acute, serrated; racemes drooping; pedicels exceeding the bracts; calyces campanulate, ciliated; berries glabrous, bracteate. ð. ñ. Native of Altaia, on mountains and subalpine places at the river Ural, also at the river Tscharysh. Berries dark purple, size of those of the common currant.

Var. a; flowers deep purple; leaves rather pubescent beneath, but smooth and glabrous above, as well as the branches. Var. b: leaves rather pubescent beneath, but hispid from bristles above, as well as the petioles and stems. Near the river Volshoi Ulegumen.

Var. y; flowers paler; leaves pubescent above, but most so below; branches smooth.

Dark-purple-flowered Currant. Fl. April, May. Shrub 4 to 6 feet.

63. Ribes sanguineum (Pursh. fl. amer. sept. 1. p. 164.) leaves cordinate, somewhat 5-lobed, serrated, veins, smoothish above, but clothed with villous tomentum beneath; racemes drooping, pubescent, twice the length of the leaves; calyx tubularly campanulate, with oblong obtuse spreading segments, exceeding the petals, which are red, and quite entire; bracts ovate-spatulate; berries tubinate, hairy. ð. ñ. Native of the north-west coast of America, in abundance from lat. 38° to 52°, usually growing in rocky situations by the sides of streams. Doug. in hort. trans. 7. t. 13. bot. reg. 1349. Sweet, fl. gard. n. s. t. 109. R. malvaceum, Smith in Rees’ cyc. This is perhaps the most ornamental species of the genus, bearing a profusion of large racemes of deep rose-coloured flowers, and is therefore well adapted for ornamenting shrubbery and pleasure grounds. The berries are brownish black and bitter, completely destitute of the pulpy substance common to most of the species of the tribe.


SECTION V. Symphocalyx (from συμφωνο, symphuo, to join together, and καλυξ, calyx, a calyx; in reference to the calyx being tubular in all the species belonging to this section). Berl. l. c. t. 2.


64. Ribes aureum (Pursh. fl. amer. sept. 1. p. 164.) quite glabrous; leaves 3-lobed; lobes divaricate, with a few deep teeth, shorter than the petioles, which are ciliate at the base; calyxes tubular, longer than the pedicles; tube slender; segments oblong, obtuse; petals linear, much shorter than the calycine segments; bracts linear, length of the pedicels; style entire; berries glabrous. ð. ñ. Native of North-west America, in light gravelly soils, from the Great Falls of the Columbia River to the mountains, and on the southern branches. Berl. l. c. t. 2. f. 23. Flowers golden yellow. Fruit yellow, seldom black, and of an exquisite flavour.

Var. a, præcox (Lindl. in hort. trans. 7. p. 242.) flowers earlier; leaves cuneated at the base, pubescent beneath; lobes deeply serrated; berries copious, earlier, tubinate; racemes bracteate. ð. ñ. Native of North America.

Var. b, villosum (D. C. prod. 3. p. 483.) leaves rather vil- lous. R. longiflorum, Fraser, cat. 1813.

Var. y, serünum (Lindl. l. c.) flowers late; leaves of various forms, smoothish beneath; lobes deeply serrated; berries few, late, round; racemes naked. ð. ñ. Native of North America.


65. Ribes tenuiflorum (Lindl. in hort. trans. 7. p. 242. bot. reg. 1274.) unarmed, quite glabrous; leaves roundish, 3-lobed, mealy; lobes bluntly toothed at the apex; racemes pendulous, many-flowered; calyx tubular, glabrous, longer than the pedicels, coloured; petals quite entire, linear, one-half shorter than the segments of the calyx, which are oblong and obtuse; bracteas linear, length of the pedicels; berries glabrous. ð. ñ. Native of North America, common on the rocky tracts of the Columbia, near the head waters of the Missouri. R. aureum, Colla, hort. rip. append. 3. t. 1. f. A. R. flavum, Berl. in D. C. prod. 3. p. 483. R. Missouriens, Hort. In habit this species is more erect than R. aureum, and has the young wood more thinly clothed with leaves; its whole appearance is also paler during the early part of the season. The flowers are not more than half the size of those of R. aureum, and have entire, not notched petals. The fruit is the size of a red currant, of an agreeable flavour, but possessing little acidity.

Var. a, fructu-nigro; berries changing from yellow to red, and finally acquires a deep blackish purple-colour.

Var. b, fructu-lateo; fruit yellow, always retaining the same colour.

Slender-flowered Currant. Fl. April, May. Clt. 1812. Sh. 6 to 8 feet.

66. Ribes flatum (Coll. hort. rip. append. 3. p. 4. t. 1. f. ß.) unarmed, quite glabrous; young leaves 3-lobed; adult ones usually 5-lobed, deeply toothed, about equal in length to the ciliated petioles; racemes short, 4-5-flowered; calyx tubular, much longer than the pedicels; tube slender; segments rather spatulate, reflexed; petals one-half shorter than the calycine segments; bracts elliptic; berries oblong, glabrous. ð. ñ. Native of North America. R. aureum ã. sanguineum, Lindl. in hort. trans. 7. p. 242. R. palmatum, Desf. hort. par. R. aüreum, Ker, bot. reg. t. 125. but not of Pursh. Flowers yellow.

Yellow-flowered Currant. Fl. April, May. Clt. 1812. Shrub 6 to 8 feet.

Cult. All the species of Ribes grow well in any kind of soil, and all root freely from cuttings planted in autumn, or early in spring. Those species, natives of Chili, Peru, Mexico, and other parts of South America, require shelter in severe weather. Some of the species are well adapted for ornamenting shrubbery and pleasure grounds. But the most ornamental and
most worthy of cultivation are R. speciösum, R. Menziöti, R. sanguineum, R. atropurpureum, and R. auricrum.


Calyx superior, 5-toothed (f. 34. b. f. 35. a.). Corolla of 5 petals (f. 34. c. f. 35. b.), alternating with the calycine segments, from within which they rise, forming by their cohesion a tube (f. 34. c.), but finally separating from each other (f. 35. b.), imbricate in aestivation. Stamens arising from the calyx (f. 35. b.), alternating with the petals (f. 35. b.); anthers bursting lengthwise. Disk conical, epigynous (f. 34. c.), plaited, surrounding the base of the style (f. 34. c.). Ovarium inferior (f. 34. a.), 2-celled, with 2 large polypernous placents (f. 34. f.) in the axis. Style simple (f. 34. d.). Stigma 2-lobed. Fruit capsular, 2-celled, crowned by the style and calyx (f. 34. a. b. c. d.), which are permanent, splitting by the separation of the cells at their base. Seeds numerous, minute, with a transparent membranous integument. Embryo minute, in the apex of an oily albumen, having the radicle pointing to the extremity opposite the hilum.—Shrubs or trees. Leaves alternate, exstipulate, simple, full of resinous glands. Flowers axillary, conspicuous, white, rarely reddish.

This order is distinguished from Grossulariœ by the cohering petals, and by the radicle being at the extremity of the seed, opposite the hyllum; the albumen is also oily, not horny, and the placents are not parietal; from Philadelphœ they are known by their glandular leaves and minute embryo; from Vacciniœ, by the final separation of the petals, and by the anthers.

Synopsis of the genera.

1 Escallonía. Limb of calyx 5-toothed or 5-lobed (f. 34. b.). Stigma peltate, 2-lobed (f. 34. d.). Capsule baccate (f. 34. f.), somewhat 2-celled, opening by pores at the base. Seeds scrobiculate.


3 Forgeșia. Limb of calyx 5-parted. Style finally divisible into 2 parts; stigma 2-lobed. Capsule 2-celled, decising between the parts of the style.

4 Anöterus. Calyx 6-lobed (f. 35. a.). Petals and stamens 6 (f. 35. b.). Stigma bífid (f. 35. c.). Capsule 1-celled, 2-valved (f. 35. d.). Seeds compressed, furnished with a wing at the top.


straight, bearing 1 leaf each, just under the calyx. Petals white, spreadingly reflexed. Stigma peltate.

*Corimbos-flowered Escallonia.* Shrub 6 to 10 feet.


**Twiggly Escallonia.** Shrub 5 to 10 feet.

8 E. punctata (D. C. prod. 4. p. 3.) shrub smoothish; branches erethic; leaves obovate obtuse, or lanceolate acuminate, serrated, full of resinous dots beneath; pedicels 1-flowered, arising from the axils of the upper leaves, each bearing 2 linear bracteoles; lobes of calyx long, denticulated. L. F. Native of South America. Allied to E. virgata, but differs in the leaves being dotted beneath; to E. rubra, but the flowers are on axillaries, solitary, 1-flowered pedicels. In this and in E. rubra the urceolus is conical and pervers at the apex, 10-angled, and 10-toothed, girding the style at the base.

**Dotted-leaved Escallonia.** Shrub 5 to 8 feet.

9 E. florda (Popp. pl. exsic. no. 845. ex D. C. prod. 3. p. 666.) shrub glabrous; leaves linear-lanceolate, acuminate at both ends, with a few serratures, crowded; flowers on short pedicels, arising from the axils of the upper leaves, solitary, collected in an ovate raceme; limb of calyx 5-cleft, with obtuse recesses and acute lobes; petals obovate, on short claws. L. F. Native of Chili, probably on the mountains. Leaves 8-9 lines long, and 1$\frac{1}{2}$ line broad. Petals with obscure veins, which are pinnately disposed.

*Florid Escallonia.* Shrub 4 to 6 feet.

* * * Flowers disposed in terminal racemes or panicles.

10 E. rubra (Pers. ench. 2. p. 235.) shrub smoothish; branches erect, when young clothed with glandular villi; leaves obovate-oblong, acuminate, serrated, full of resinous dots beneath; peduncles 2-7-flowered, bracteate; lobes of calyx denticulate; petals spatulate. L. F. Native of Chili, on the mountains at Colocolo, in the fissures of rocks, and about Valparaíso. Hook. bot. mag. 2890. Stereoxylon rubrum, Ruiz et Pav. fl. perf. 3. t. 236. f. b. Petals red, connivent, but spreading a little at the apex. (f. 34. c.) Var. a, glabríssula (Hook. et Arn. in bot. misc. 3. p. 252.) branches glandular, hardly pubescent; leaves glabrous; flowers red. L. F. Native of Chili, near La Guardia, on the Andes of Chili, and about Valparaíso.

Var. b, albiglória (Hook. et Arn. l. c.) flowers white. L. F. E. glandulósa, Loddd. bot. cab. t. 1291. Native of Chili; and the province of Maule.

Var. c, pubéscens (Hook. et Arn. l. c.) branches hardly glandular, but clothed with villous pubescence; leaves pubescent on both surfaces, but more so beneath; flowers red. L. F. Native of the Andes of Chili. The leaves of all the varieties are spotted beneath with resinous dots.

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11 E. Peppigiana (D. C. prod. 4. p. 3.) shrub smoothish; branchlets pubescent, rather clammy; leaves oval, acute, tapering into the petiole, serrated, full of resinous dots beneath, rather clammy above; pedicels 1-flowered, disposed in a few-flowered, terminal raceme; calyx glandular, with the tube drawn out beyond the ovaryum; teeth subulate; petals erect, oblong. L. F. Native of Chili. E. ribra, Popp. pl. exsic. no. 81. Flowers red. Like E. rubra, but differs in the peduncles being 1-flowered, in the teeth of the calyx being subulate, in the urceolus not being prominent, and in the style being equal in length to the petals. There is a long-leaved variety of this, or a species, which was collected on the mountains in Chili, where it is called by the natives Ropa.

*Peppig’s Escallonia.* Shrub 4 to 6 feet.

12 E. macrántia (Hook. et Arn. in bot. misc. 3. p. 251.) branches pubescent, glandular; leaves ovate-elliptic, bluish, cuneated at the base, glabrous, full of resinous dots beneath, bluntly crenate-serrate; lower pedicels simple, axillary: upper ones racemose; bracteoles wanting, or very minute; calyceal teeth subulate. L. F. Native of Chile. Petals connivent. The flowers are larger and the leaves broader than in E. rubra.

*Large-flowered Escallonia.* Shrub.

13 E. myrtóidea (Bert. in litt. ex D. C. prod. 4. p. 666.) shrub glabrous; leaves lanceolate, serrated, attenuated at the base; racemes terminal, nearly simple, hardly longer than the leaves; limb of calyx campanulate, 5-cleft; lobes subulate, reflexed; petals obovate, on long claws. L. F. Native of Chili; at the river Cachapul near Rancagua, where it is commonly called Lun. The calyx agrees with that of E. macrántia, but differs in the whole plant being smooth, and in many other points.

*Myrtle-like Escallonia.* Shrub 3 to 6 feet.

14 E. Illiníta (Presl, in relic. Haenk. 2. p. 49. t. 59.) quite glabrous; branches spreading, anointed with resin; leaves petiolate, obovate or oblong, obtuse, crenulated, attenuated at the base, beset with glandular dots above, and clammy; panicle terminal, many-flowered, leafy; calyceal segments acuminate, quite entire; petals on long claws; capsule turbinate, 5-nerved; style furnished with a 10-toothed, 10-angled, pervalvate, cylindrical urceolus at the base, as in most of the species. L. F. Native of the Cordillera of Chili.

Var. a; leaves beset with shining resinous dots on both surfaces, but especially beneath. L. F. Native of Chili, in El Arroyo de Los Lanes, Valle del Rio Tinguiririca, where it is called by the natives Lun.

Var. b; leaves bearing minute glands beneath. L. F. Native of Chili, in La Siente Vieja, and La Cuesta de Chacabuco, and La Laguna near Valparaíso, where it is called by the natives Araca or Arayán. This variety is perhaps a distinct species; the glands beneath sometimes pass into a kind of pubescence.

*Anointed Escallonia.* Shrub 3 to 6 feet.

15 E. Arou’ra (Presl, relic. Haenk. 2. p. 48. t. 58.) quite glabrous; branches erect; leaves obovate or oblong-lanceolate, mucronate, sharply serrated, attenuated into the petiole, discoloured beneath; panicle terminal, many-flowered; racem pubescent; segments of calyx acute, quite entire; petals spatulate, on long claws; capsule turbinate, 10-nerved. L. F. Native of Chili, at San Gabriel, La Guardia, and La Cuesta del Inga; Andes of Chili; and Valle del Rio Claro. Lun is its vernacular name. E. microcarpa, Gill. mss. E. reflexa, Gill. mss. E. myrtóidea, Gill. mss. hardly of Bertero. The race is very compact, and the flowers nearly sessile. Perhaps afterwards it may prove a mere state of M. rubra.

C C
**ESCALLONEÆ.**

207. *Escallonia.* Shrub 3 to 6 feet. Branches erect; leaves oblong, cuneated at the base, acutish, finely serrated, full of resinous dots beneath; petiole terminal, many-flowered, crowded, intermixed with foiliaceous bracteas; lobes of calyx acute, rather denticulated; petals obovate-oblong. F. Native of Brazil, in many places, but especially on the sandy banks and pastures of the Uruguay. *E. floribunda* var. ρξ., Montevideensis, Schlecht. in Linnaea. p. 543. Lindl. bot. reg. 1487. E. bifida. Link et Otto, abbild. t. 28. Flowers white, very like those of the Hawthorn. Style permanent, double the length of the fruit after flowering.

**Monde-Vídeo Escallonia.** Fl. July, Sept. Clt. 1827. Shrub 6 to 10 feet. Leaves obtuse, nearly sessile, obtusely crenated, glandular, pubescent, nearly sessile, whitish beneath; petiole terminal, nearly sessile, whitish beneath; petiole terminal, many-flowered, crowded, intermixed with foiliaceous bracteas; lobes of calyx acute, rather denticulated; leaves oblong, obtuse, finely serrated, full of resinous dots beneath; calyx terminal, many-flowered, crowded, intermixed with foiliaceous bracteas; lobes of calyx acute, rather denticulated; petals obovate-oblong. F. Native of Brazil, in many places, but especially on the sandy banks and pastures of the Uruguay. *E. floribunda* var. ρξ., Montevideensis, Schlecht. in Linnaea. p. 543. Lindl. bot. reg. 1487. E. bifida. Link et Otto, abbild. t. 28. Flowers white, very like those of the Hawthorn. Style permanent, double the length of the fruit after flowering.

**Bundle-flowered Escallonia.** Tree 10 to 20 feet. Leaves when young clanny and shining above. Flowers white. This species is said to come near *E. cuneifolia.*

208. *Caracasa* (H. B. et Kunth, nov. gen. amer. 3. p. 297.) Shrub glabrous; branches scattered, somewhat trigonal; leaves oblong, acute, cuneated at the base, petiolate, finely crenated, membranous; petiole terminal, many-flowered, leafy; teeth of calyx acute; petals obovate-spatulate. F. Native of New Granada, on the Andes. Style length of the stamens. Leaves when young clanny and shining above. Flowers white. Style length of the petals, shorter than in any other species, rather conical at the base, striated.
Discoloured-leaved Escallonia. Clt. 1829. Shrub 6 to 8 ft.
30. \textit{E. revoluta} (Pers. ench. 1. p. 235.) shrub hairy in every part; branches erect, very hairy, but smoothish in the adult state; leaves obovate, dentilicate, revolute; raceme thyrsoid; teeth of calyx subulate; petals linear-spatulate. \textit{F}. Native of Chili, in shady moist places, and on the banks of rivulets about Concepcion, Valparaiso and Quillota, where it is called \textit{Lun} or \textit{Lun} by the inhabitants, and \textit{Siete Canisas}. Stereoxylon revolutum, Ruiz et Pav. fl. per. 3. p. 15. t. 236. a. Flowers white?

\textit{Revolute}-leaved Escallonia. Tree 10 to 20 feet.
31. \textit{E. fulvululesta} (Pers. ench. 1. p. 235.) shrub hairy in every part; branches rather erect, somewhat trigonal; leaves elliptic, obtuse, on short petioles, serrulately, rather cymose above when young; racemes terminal, spike-formed, erect; teeth of calyx spreading; petals obovate. \textit{F}. Native of Chili, between Concepcion and the tract of Carcano, where it is called \textit{Mardognia} by the natives, and about Valparaiso. Poeppl. pl. exsic. no. 79. Cham. et Schl. in Linnaea. 1. p. 541. Stereoxylon pulvululentum, Ruiz et Pav. fl. per. 3. p. 15. t. 237. a. Flowers white, nearly globose, when in the bud. The style is shorter in this than in any other species.

\textit{Powdered} Escallonia. Shrub 6 to 10 feet.
32. \textit{E. Berteroana} (D. C. prod. 4. p. 666.) shrub glabrous, cymose from resin; leaves elliptic, petiolate, serrated, shining above; racemes spicate, terminal, simple, twice the length of the leaves; calyces shining and cymose, 3-leaved; petals elliptic-oblong, sessile. \textit{F}. Native of Chili, on the banks of rivers, and in valleys on the mountains, as at La Guardia del Maypu, banks of Rio Maule, Valle del Rio Tinquiriqui, and Causa Blanca, and in woods near Rancagua. E. resinumum, Bertero in litt. Leaves 1$\frac{1}{2}$ to 3 inches long, and 1$\frac{1}{2}$ broad. Petioles 3 lines long. Vernacular name of the shrub \textit{Corentillo}.

\textit{Bertero's} Escallonia. Shrub 5 to 6 feet.
33. \textit{E. chlorophylla} (Cham. et Schl. in Linnaea. 1. p. 542.) shrub glabrous; branches rather angular; leaves oblong-cuneated, mucronulate, quite entire, of a greyish white colour; racemes terminal, clothed with powdery down; bracteoles about equal in length to the peduncles; petals obovate-spatulate.

\textit{G}. Native of Brazil. Flowers white?

\textit{Green-leaved} Escallonia. Shrub.
34. \textit{E. pendula} (Pers. ench. 1. p. 235.) branches erectly spreading, rather cymose when young; leaves oblong-lanceolate, acute, finely crenulated, hairy beneath, but especially on the nerves; racemes terminal, spike-formed, pendulous, calyx hairy, with the teeth acute; petals linear-spatulate. \textit{F}. Native of Peru, in groves; and on the Andes about Loaxa, near Gonzanama. Stereoxylon pendulum, Ruiz et Pav. fl. per. 3. p. 16. t. 257. f. b. E. pendula, H. B. et Kunth, nov. gen. amer. 3. p. 296. Perhaps the plant from Loaxa is the same as that from Peru. Flowers white.

\textit{Pendulous-racemed} Escallonia. Tree 10 to 14 feet.
35. \textit{E. hiuta} (Willd. in Böasm. et Schultes, syst. 3. p. 329.) leaves obovate-oblong, almost quite entire, glabrous; pedicle terminal; peduncles hairy. \textit{H}. Native of South America, where it is said to have been gathered by Humboldt and Bonpland, but it is not mentioned in the nov. gen. amer.

\textit{Hairly} Escallonia. Shrub.
Cult. All the species of \textit{Escallonia} are very fine ever-green shrubs; they grow best in a mixture of peat, sand, and loam, and cuttings strike readily in mould or sand under a hand glass. Most of the species will probably be found sufficiently hardy to stand in the open air in our climate, provided they are planted in a warm sheltered situation, particularly against a south wall or hot-house; and in winter they may be protected by throwing a mat over them.


\textit{Lin. syst. Pentadria, Monogynia.} Tube of calyx adhering to the ovary, marked by 10 nerves; limb 5-toothed, perennate. Petals 5, obovate. Stamens 5. Style columnar, filiform; stigma peltately capitate, 4-5-lobed. Capsule crowned by the style and calyx teeth, 5-celled, with the dissepiments hardly complete; cells many-seeded. Seeds small, ovate, compressed. — Shrub smooth. Leaves alternate, petiolate, oval, acuminate at the apex, attenuated at the base, quite entire, coriaceous. Panicles terminal, composed of spreading racemose branches. Pedicels spreading, shorter than the fruit.


\textit{Sieber's Quintinia}. Shrub.
Cult. See \textit{Escallonia} above for culture and propagation.


\textit{Lin. syst. Pentandria, Monogynia.} Tube of calyx turbinate, adnate to the ovary; limb 5-parted; lobes lanceolate. Petals 5, inserted in the calyx, linear-lanceolate, approximate at the very base, hardly longer than the calyx, somewhat valvate in adnation. Stamens 5, erect; anthers ovate. Style filiform, finally separable into 2 parts; stigma 2-lobed. Capsule half adnate, crowned by the erect separated styles, 2-celled, many-seeded, opening between the styles. — Tree small, quite glabrous. Leaves alternate, coriaceous, lanceolate, attenuated at both ends, on short petioles, serrated. Racemes terminal, few-flowered, bracteate at the base of the pedicels.


Cult. For culture and propagation see \textit{Escallonia} above.

IV. \textit{ANOPTERUS} (from \textit{anwra}, \textit{ano}, upwards, and \textit{ptesov}, \textit{pteron}, a wing; in reference to the seeds, which are winged at the apex). Labill. nov. holl. 1. p. 86. t. 112. R. Br. in Frankl. narr. journ. 756. vern. schrift. 1. p. 545.

\textit{Lin. syst. Hexandria, Digynia.} Tube of calyx turbinate (f. 35. a.), adnate to the ovary at the base; lobes 6, short, acute, permanent. Petals 6 (f. 35. b.), alternating with the calycine lobes, and inserted in the calyx. Stamens 6 (f. 35. b.), inserted with the petals, shorter, and alternating with them. Style short; stigma bifid (f. 35. c.). Capsule oblong, 1-celled, 2-valved (f. 35. d.); valves opening from the apex to the base, with the placenta at the margins (f. 35. e.). Seed ovate, compressed, furnished with a wing at the top. — Tree, quite glabrous. Leaves alternate, rarely nearly opposite, ovate-oblong, attenuated at both ends, nearly sessile, coriaceous, cally toothed. Racemes simple, terminal. Flowers sometimes 7-cleft.

FIG. 35.
ESCALLONIÆ. V. ITEA. CUNONIACEÆ.

Glandular Anopterus. Tree 25 feet.

Cult. See Escallonia, p. 195. for culture and propagation.

V. ITEA (rzea, itea, is the Greek name of the willow; given to this genus on account of the quick growth of the I. Virginica). Lin. gen. 275. Rich. in Michx. fl. bor. am. 1. p. 156. Garrn. fruct. 3. p. 142. t. 209. f. 4. D. C. prod. 4. p. 6.


Lin. syst. Pentandria, Monogyne. Calyx regular, permanent, campanulate, 5-cleft, with the receptacle obtuse, and the teeth subulate. Petals 5, lanceolate-linear, inserted in the upper part of the tube of the calyx, and alternating with its lobes, valvate in aestivation. Stamens 5, alternating with the petals, and shorter than them; anthers oblong, rather bifid at the base, 2-celled, butting lengthwise. Ovarium oblong, free. Style 1, but at length separating into 2 parts: stigma capitulate, usually divisible in the furrow. Carpels 2, joined into a 2-celled compressed bispulate capsule, which separate at length from each other from the base to the apex. Seeds numerous, disposed in 2 rows along the inflexed margins of the carpels.—Shrubs, with alternate simple exstipulate leaves. Flowers racemose, as in Weimândria, but pentandrous, and as such were simple style. The character of the genus is alone taken from I. Virginica.

1 I. Virociâne(Lin. spec. 282.) leaves lanceolate, acutely toothed; racemes simple, terminal. ½ H. Native of North America, from Pennsylvania to Carolina. Lam. ill. 1. t. 147. f. 1. Lher. strîp. 1. p. 138. Lois. in Duham. abr. ed. 2. vol. 6. t. 9. Sims. bot. mag. 2409.—Trew. chert. t. 98. When this shrub is in vigour it is entirely covered with racemes of white flowers in July and August, and then makes a fine appearance.

Virginian Itæa. Fl. June, Aug. Clt. 1744. Sh. 6 to 7 feet.

† Asiatic shrubs related to Itæa, and referred to the genus by the authors, but will probably constitute 2 or 4 different genera when the parts of fructification are properly examined.

* Leaves alternate.

2 I. ? Umbellâta (Roxb. fl. ind. 2. p. 419.) leaves alternate, broadly lanceolate, entire, smooth; panicles axillary and terminal, composed of simple umbels, on long peduncles. ½ S. Native of the Malay Islands. Capsule 1-celled, 2-valved, with 2 parietal placenta on each side. Flowers white.

Umbellata-flowered Itæa. Shrub 6 to 8 feet.

3 I. ? Macrophylâlla (Wall. in Roxb. fl. ind. 2. p. 419.) leaves alternate, elliptic-ovate, acuminate, callously serrate; racemes axillary, fasciculate, erect, equal in length to the leaves. ½ G. Native of the East Indies, on the Khasee mountains bordering on the province of Silhet. Flowers yellow, fragrant, when young conical, and valvate in aestivation. Ovarium half adhering to the calyx, 2-celled. Style columnar.

Long-leaved Itæa. Tree 20 feet.

** Leaves opposite.

4 I. ? Fragrâns (Wall. in Roxb. fl. ind. 2. p. 420.) leaves opposite, cuneate-lanceolate, entire; racemes terminal; flowers in sessile fascicles, tetrandrous, and pentandrous. ½ G. Native of the East Indies, in the Island of Singapore. Flowers yellow, fragrant. Calyx cup-shaped, 4-5-toothed. Petals 4-5, linear, valvate in aestivation, longer than the stamens. Ovarium adnate to the calyx, 2-celled. Style columnar. This species, with the preceding, will perhaps form a new genus nearly allied to Escallonâia.

Fragrant-flowered Itæa. Shrub 5 to 6 feet.

5 I.? Rosmarinus (Rœm. et Schultes, syst. 5. p. 408.) leaves opposite, filiform, glabrous, hardish; peduncles axillary, 1-flowered. ½ F. Native of the north of Cochín-china, in sandy places, and in China about Macao. Cedrelâ Rosmarinus, Lour. coch. p. 160. Calyx somewhat campanulate, 5-toothed, with the base permanent, and the teeth deciduous. Petals 5, obtuse. Stamens 5, equal in length to the petals. Style 1, capsule 3-celled, 3-valved, dehiscing at the apex, many-seeded. Leaves odoriferous, from containing a quantity of essential cephalic oil. This plant hardly belongs to the order.

Rosmary-like Itæa. Shrub 5 to 6 feet.

Cult. Itæa Virginica is a very pretty hardy shrub, well adapted for decorating the front of a shrubbery. It is increased by layers put down in the autumn. The rest of the species should be grown in pots, in order that they may be protected by a frame in winter, or to be grown against a south wall, where they may be easily preserved from the frost by mats; a light soil is best suited for them, and they may be either increased by layers put down in the autumn, or by cuttings.


Calyx of many divisions (f. 36. a. f. 37. a. f. 38. a. f. 39. a.), valvate in aestivation. Petals equal in number to the divisions of the calyx (f. 36. b. f. 38. b. f. 39. c.), and alternating with them, imbricate in aestivation, sometimes wanting. Stamens inserted in a perigynous disk, definite (f. 37. b.), rarely indefinite; anthers petaloid, 2-celled (f. 38. c. f. 39. d.), bursting lengthwise by a double fissure. Ovarium 2-celled: ovula usually indefinite; styles 2 (f. 36. e. f. 37. d. f. 38. e. f. 39. b.), rarely connate: stigmas 2, simple, obtuse, pruinose. Capsule composed of 2 conflated follicles, which are applied to each other, rarely confluent, 2-celled, 2-valved; for the most part furnished with 2 beaks, and many-seeded; dissepiments double, from the inflexed edges of the valves. Placenta central, composed of fascicles of umbilical vessels. Seeds pendulous, sometimes winged; testa crustaceous or membranaceous. Albumen copious, fleshy. Embryo slender, straight, with the radicle turned towards the umbilicus, usually rather long.—Trees or shrubs, for the most part natives of the southern hemisphere. Leaves usually opposite, but sometimes verticillate, simple or compound. Stipulas interpetiolar, rarely wanting. Flowers usually disposed in spicate racemes or panicles.

The Cunoniææ were first proposed by Dr. R. Brown as a separate family from Saxifragææ, to which they had been referred by Jussieu, and to which they are intimately related, being chiefly distinguished by habit alone. M. Kunth considers them merely as a section of Saxifragææ, but it appears preferable to regard them as a distinct family; for the advantages arising from dividing extensive families and genera are, that the individuals composing these become better understood, and their characters more accurately investigated. The Saxifragææ are almost exclusively confined to the northern, as Cunoniææ are to the southern hemisphere. Some pass beyond these limits, but their number is very small. Both families agree in having entire
and divided petals, and a superior and inferior ovarium. In the series of natural affinities the Philadelphus clearly follow the Cunoniaceae, with which they correspond in habit; and in Bauera and Belangera the stamens are indefinite, and the seeds of Calcluvia have a striking analogy to those of Philadelphus. The styles both in Saxifragaceae and Cunoniaceae are often 3, and in Cornidia of the Flora Peruviana that number is always constant.

A species of Weinmannia is used in Peru for tanning leather, and its astringent bark is employed to adulterate the Peruvian bark. The Indian Weinmannias appear to possess similar astringent qualities.

Synopsis of the genera.

Tribe I.


Tribe II.


Tribe III.

Ba'ueria. Stamens indefinite. Ovarium free.


Tribe IV.


Tribe I.

Cunoniaceae (plants agreeing with Cunonia in having definite stamens). Stamens definite. Ovarium distinct from the calyx.


—Trees, natives of South America and the Mauritius. Leaves compound or simple; pelti'oles articulated. Stipulas undivided, caducous.
Flowers hermaphrodite, racemose, usually white; pedicels in fascicles.

* Leaves simple.

1. **W. ovata** (Cav. icon. 6. p. 45. t. 566.) leaves elliptic-oblong, bluntish, crenated, glabrous on both surfaces, as well as the branches, acute at the base. ♀. S. Native of Peru. Leaves 2-3 inches long, and an inch or an inch and a half broad. Racemes 3 inches long, loose. Hypogynous disk with 8 glands (f. 36 d.).


2. **W. kunthiana** (D. Don in edinb. phyl. journ. April, 1830.) leaves elliptic, crenated, cuneated at the base, membranous, glabrous; racemes elongated; fascicles many flowered. ♀. S. Native of New Granada, near Santa Fe de Bogota. W. ovata. W. racemes. W. racemes. W. Racemes 2-3 inches long, and an inch or an inch and a half broad. Racemes 3 inches long, loose. Hypogynous disk with 8 glands (f. 36 d.).

Kunth's Weinmannia. Tree 10 to 15 feet.


Balbis's Weinmannia. Tree or shrub.

4. **W. laurina** (H. B. et Kunth, l. c. 6. p. 51.) leaves oblong, acute, crenated, glabrous, attenuated at the base; fascicles of racemes many flowered. ♀. S. Native of South America. Leaves 3 inches long or more, puberulous on the veins beneath. Racemes 2 inches long.

Laurel-like Weinmannia. Tree.

5. **W. macrophylla** (H. B. et Kunth, l. c. 52. t. 521.) leaves nearly sessile, ovate, acuminate, serrated, glabrous on both surfaces, as well as on the branches, rounded at the base; fascicles of racemes many flowered. ♀. S. Native of the Andes of Quito, between Loxa and Nabon. Leaves 2-5 inches long, and 2-3 inches broad, shining above. Racemes rather loose. Capsule terete, oblong, glabrous.

Long-leaved Weinmannia. Tree or shrub.

6. **W. latifolia** (Presl, in Hänke, relig. 2. p. 51.) leaves ovate-elliptic, obtuse, acute at the base, crenately serrated, coriaceous, quite glabrous above, hairy beneath; racemes longer than the leaves; stipulas oblong, obtuse, silky outside; urceolus entire. ♀. G. Native of Peru, in mountain woods.

Broad-leaved Weinmannia. Tree.

7. **W. elliptica** (H. B. et Kunth, l. c. 50.) leaves petiolo-elliptic, obtuse, crenated, glabrous on both surfaces, acute at the base; racemes loose. ♀. S. Native of Quito, near Loxa. Leaves an inch or an inch and a half long, coriaceous. Racemes 1½ or 2 inches long. Capsule ovate, glabrous. Flowers purplish.


8. **W. ovalis** (Ruiz et Pav. fl. per. 4. t. 333. f. a. ined.) leaves petiolo-oval, crenated, quite glabrous on both surfaces, as well as the branches, shining, acute at the base; fascicles of racemes many flowered. ♀. S. Native of Peru, on the Andes, in groves at Pillao. Leaves coriaceous, 2 or 3 inches long. Racemes loose, a hand long. Capsule ovate, quite smooth.

Oval-leaved Weinmannia. Tree.

9. **W. crassifolia** (Ruiz et Pav. fl. per. 4. t. 331. f. a. ined.) leaves nearly sessile, oval, coarsely crenated, rather pilose as well as the branches, rounded at the base; fascicles of racemes many flowered. ♀. S. Native of Peru. Leaves 2 inches long, coriaceous, thick, pilose on the rib and veins beneath. Racemes 2-3 inches long. Capsule ovate-oblong, smooth.

Thick-leaved Weinmannia. Tree.

10. **W. subcordata** (Moricand, herb. ex D. C. prod. 3. p. 8.) leaves oval, obtuse, somewhat cordate at the base, dentately crenated, coriaceous, glabrous, shining above; racemes when in flower exceeding the leaves a little. ♀. S. Native of Peru. Flowers on very short pedicels. Leaves 24-30 lines long, and 16-18 lines broad.

Subcordate-leaved Weinmannia. Tree.

* * Leaves simple and ternate.

11. **W. heterophylla** (H. B. et Kunth, nov. gen. amer. 6. p. 52. t. 523.) leaves simple and ternate, ovate-oblong, acute, and coarsely serrated, rather pilose beneath; fascicles of racemes many flowered. ♀. S. Native of New Granada, near Santa Fe de Bogota. Leaves for the most part simple, glabrous above, pilose beneath, particularly at the ribs, 3-5 inches long, and 1½ or 2 inches broad. Petioles half an inch long. Racemes loose, 4 inches long. Capsule ovate, smooth.

Variable-leaved Weinmannia. Tree.

12. **W. cordata** (D. Don in edinb. phyl. journ. April, 1830.) leaves nearly sessile, cordate-ovate, bluntish, coarsely serrated, rather pilose beneath, and on the branches; fascicles of racemes many flowered. ♀. S. Native of Peru. W. heterophylla. Ruiz et Pav. fl. per. 4. t. 331. f. b. Leaves simple or ternate, 2 inches long. Racemes loose, 3 inches long.

Cordate-leaved Weinmannia. Tree.

13. **W. auriculata** (D. Don, in edinb. phyl. journ. April, 1830.) leaves elliptic, with revolute, serrated margins, rounded at the base, hairy beneath and on the branches; fascicles of racemes crowded. ♀. S. Native of Peru, in groves at Pillao. W. ovata. Ruiz et Pav. fl. per. 4. t. 335. f. b. ined. W. crassifolia. D. C. prod. 4. p. 9. Leaves shining and glabrous above, but densely clothed with fulvous hairs beneath, an inch or an inch and a half long, 1-lobed at the base, and sometimes trifoliate. Racemes dense, spicate, 2-3 inches long. Capsule roundish-ovate, and are as well as the styles rather hairy.

Auricled-leaved Weinmannia. Tree.

14. **W. australis** (Cunning. in Field's New south wales, p. 353.) leaves trifoliate; leaflets ovate-lanceolate, deep and equally serrated, sessile; flowers terminal. ♀. G. Native of New Holland, on moist shady rocks, at Springwood.

Southern Weinmannia. Shrub.

* * * Leaves ternate and quinate.

15. **W. pentaphylla** (Ruiz et Pav. fl. per. 4. t. 330. f. a.) leaves ternate and quinate; leaflets 3-5, ovate-lanceolate, acute, serrated, glabrous on both surfaces; racemes loose. ♀. S. Native of Peru. Branchlets pubescent. Leaflets coriaceous, shining above, 2-3 inches long; lateral ones unequal-sided at the base. Racemes loose, a hand long; pedicels longish. Capsule ovate, smooth. Styles sometimes 3, when this is the case the capsule is 3-celled.

Five-leaved Weinmannia. Tree.

16. **W. venezuelana** (Presl in relig. Hänke. 2. p. 51.) leaves of the branches with 2 pairs of leaflets and an odd one, those of the branchlets ternate; leaflets oblong, obtuse, broadly crenated, quite glabrous, coriaceous, terminal one oblong-lanceolate, attenuated at the base; wings of the rachis and petiole semi-ovate; racemes longer than the leaves, and are as well as the branches pubescent; flowers glomerate; segments of the calyx
ciliated; urceolus crenated. ʒ. G. Native of Peru, in mountain woods.

*Weinmannia* Tree.

17 W. M.aurita (D. Don, in edinb. phil. journ. April 1830.) leaves ternate and quiniate; leaflets 3-5, obvate, or elliptic, obtuse, crenated, smoothish; racemes crowded. ʒ. Native of the Mauritian, where it is called *La Lou*. W. triflora, Linn. dict. 7. p. 579. ill. t. 313. f. 2. exclusive of the synonyme. Smith, in Rees’ cyclo. exclusive of the synonymes of Linn. Thunb. and Willd. W. Madagascariensis, D. C. prod. 4. p. 9. Leaflets coriaceous, pubescent beneath, ʒ. 1 or 1 inch long. Racemes loose, 2 inches long; fascicules few-flowered.

*Mauritian* Weinmannia. Tree.

18 W. margina (Moricand, mss. ex D. C. prod. 4. p. 10.) leaves with 3-5 leaflets; leaflets ovate-lanceolate, acute, serrated, attenuated at both ends: extreme one the largest; petiole margined; capsule glabrous. ʒ. S. Native of Quito, near Loxa. Leaves with sometimes only 2 leaflets; leaflets small, cuneate-ovate, crenated, quite glabrous, shining, ʒ. 3 lines long. Capsule ovate, glabrous. Small-leaved Weinmannia. Shrub.

**•••• Leaves impari-pinnate.**

20 W. glabra (Linn. fil. suppl. p. 228.) leaves with many pairs of leaflets; leaflets obovate or oblanceol. crenated, rather pilose beneath; racis with rhomboid joints; racemes loose. ʒ. S. Native of the Islands of Santa Cruz and Martinique; and of Mexico, near San Salvador and Chiconquila. Willd. spec. 2. p. 456. exclusive of the synonyme of Linn. W. pinna, Linn. spec. 1. p. 515. exclusive of the synonyme of Browne, Jam. Flowers numerous, white.


21 W. trichosperma (Cav. can. 6. p. 45. t. 567.) leaves with many pairs of leaflets; leaflets oblong, acutely toothed, rather pilose beneath; joints of racis exactly rhomboid. ʒ. S. Native of the Island of San Carlos de Chiole; and of Peru. W. dentata, Ruiz et Pav. fl. per. 4. t. 334. f. c. W. pinna, Linn. and Cav. mss. Leaflets obliquely cuneate at the base, naked and shining above, but rather pilose on the nerves and veins beneath. Racemes loose. Capsule roundish-ovate, ribbed, glabrous.

*Hair-seeded* Weinmannia. Shrub.

22 W. hirta (Swaitz. prod. p. 63. fl. ind. occid. 2. p. 691.) leaves with 3 pairs of leaflets; leaflets elliptic, serrate, hairy beneath as well as the branches; joints of racis cuneate. ʒ. S. Native of Jamaica, St. Domingo, and Brazil. Windmánna fruticos, &c. Browne, Jam. p. 212. Leaflets hairy, at length smoothish above, coriaceous. Racemes loose, very copious, 2 inches long.


23 W. nitida (D. Don, in edinb. phil. journ. April, 1830.) leaves with usually 3 pairs of leaflets; leaflets obvate, crenated, glabrous, and shining on both surfaces; joints of racis cuneate. ʒ. S. Native of Jamaica. Weinmannia hirta, var. Smith, herb.

*Shining-leaved* Weinmannia. Tree.

24 W. glomerata (Presl, in relig. Hænk. 2. p. 52.) leaves with 4-6 pairs of leaflets; leaflets oblong, obtuse, coriaceous, toothed towards the apex, hairy on the middle nerve beneath: terminal leaflet oblong-lanceolate, acute at both ends; wings of racis semi-obovate; racemes spicate, longer than the leaves, and are as well as the branchlets and pedioles very hairy; flowers glomerate, sessile; calyx smoothish; urceolus entire. ʒ. G. Native of Peru, on the mountains.

*Glomerate-flowered* Weinmannia. Tree.

25 W. tintoria (Smith, in Rees’ cyclo.) leaves with many pairs of leaflets; leaflets oblong, serrated, smoothish; joints of racis spatulate; fascicules of racemes many-flowered. ʒ. S. Native of the Island of Bourbon. W. glabra, Linn. dict. 7. p. 578. ill. t. 313. f. 1. W. macrostachya, D. C. prod. 4. p. 10. The tree is called *Tan rouge* by the inhabitants of Bourbon, where it is used for drying red.

*Dyers’* Weinmannia. Tree.

26 W. fagaroides (H. B. et Kunth, nov. gen. amer. 6. p. 54. t. 524.) leaves with many pairs of leaflets; leaflets obvate or elliptic, crenated, glabrous on both surfaces, shining above; joints of racis obcordate. ʒ. S. Native of Peru, at Pillao, and at Loxa. Branchlets with annular chinks, pubescent. Leaflets from 5-15, coriaceous, pilose on the joints beneath, 3 lines long. Racemes 2 inches long; fascicules many-flowered. Capsule ovate-oblong, glabrous.

*Fagara-like* Weinmannia. Tree.

27 W. farfifolia (Ruiz, mss. ex D. Don, in edinb. phil. journ. April, 1830.) leaves with many pairs of leaflets; leaflets oblong, serrated, pilose beneath; joints of racis obvate-oblong; racemes short. ʒ. S. Native of Peru, at Pillao, where it is commonly called *Macho* and *Arbol del Peregrin* by the inhabitants. W. microphylla, Ruiz et Pav. fl. per. 4. t. 334. f. a. Branchlets densely pilose. Leaflets from 9-15, contiguous, naked and opaque above; 3-5 lines long. Racemes dense, cylindrical, hardly an inch long; fascicules many-flowered, crowded. Capsule roundish, ovate, glabrous.

*Small-leaved* Weinmannia. Tree.

28 W. reticulata (Ruiz et Pav. fl. per. 4. t. 332.) leaves with many pairs of leaflets; leaflets elliptic, crenated, clothed with rusty tomentum beneath; joints of racis obvate-oblong; fascicules of racemes crowded. ʒ. S. Native of Peru, at Pillao and Acomaya. W. pubescens, Ruiz, mss. Branchlets densely clothed with rusty tomentum, usually with annular chinks. Leaflets 9-17, pilose above and shining, reticulately veined, half an inch long. Racemes dense, cylindrical, 2 or 3 inches long; fascicules many-flowered, very pilose. Styles rather pilose at the base. Capsule ovate, smooth.

*Reticulated-leaved* Weinmannia. Tree.

29 W. lentiscifolia (Presl, in relig. Hænk. 2. p. 52.) leaves with 3-5 pairs of leaflets; leaflets oblong, obtuse, toothed, coriaceous, hairy on the nerves, racemes, and petioles: terminal one oblong-lanceolate, acuminate at both ends; wings of petiole and racis semi-obovate; flowers on long pedicels; segments of the calyx ciliis; urceolus angular and crenated. ʒ. G. Native of Peru, on the mountains.

*Lentiscus-leaved* Weinmannia. Tree.

30 W. tomentosa (Linn. fil. suppl. p. 277.) leaves with many pairs of leaflets; leaflets oval, with revolute margins, quite entire, clothed with hoary tomentum beneath; spikes cylindrical, much crowded. ʒ. S. Native of New Granada. H. B. et Kunth, nov. gen. amer. 6. p. 55. t. 555. Leaflets size of those of box leaves, 9-15, approximate, very blunt, convex and pubescent above, but at length green. Joints of racis obvate, with revolute margins. Spikes cylindrical, obtuse, an inch long; fascicules many-flowered, much crowded; peduncles short, densely clothed with tomentum.

*Tomentose* Weinmannia. Tree.

31 W. cineerea (Ruiz et Pav. fl. per. 4. t. 332. f. b.) leaves with usually 3 pairs of leaflets; leaflets elliptic, serrated, reticulated, smoothish; joints of racis cuneate-oblong; racemes
CUNONIACEÆ.  I. WEIMANNIA. II. LEIOSPERMUM. III. CALDCLUVIA. IV. PLATYLOPHUS.


32. *W. subesseliiformis* (Ruiz et Pav. fl. per. 4. t. 334. f. b.) leaves with many pairs of leaflets; leaflets oval or oblong, serrated, smooth, lappetted, elliptically, cylindrical; styles pubescent; capsule silky; h. S. Native of Peru, in the Andes, at Pillaio.  W. polystálychá, Ruiz, mss.  Leaflets 11-15, 1/2 or 1 inch long, while young concescent on both surfaces.  Joins of rachis obovate.  Spike narrow, 3-4 inches long; fascicles crowded, many-flowered.  Pedicels and calyxes silky.  *Subesseliiformis* Weimannia.  Tree.


34. *W. pubéscens* (H. B. et Kunth, nov. gen. amer. 6. p. 56.) leaves with many pairs of leaflets; leaflets elliptic-oblong, serrated, pilose on both surfaces; capsule ovate, tomentose.  h. S. Native of New Spain, on Mount Avila, near Caracas.  Leaflets 4-6 pairs, 6-10 lines long.  Racemes loose, 3-4 inches long.  *Pubescent Weimannia*.  Tree.


37. *W. polyphyllá* (Moricand, ex D. C. prod.  4. p. 11.) leaves with 8-15 pairs of leaflets; leaflets elliptic, obtuse, serrated, glabrous: outer one lanceolate; joints of rachis triangular; branchlets, petioles, and the nerves on the under side of the leaves pilose; racemes exceeding the leaves.  h. S. Native of Peru, near Guayaquil.  Leaves 4 inches long; leaflets 4-8 lines long, and 2-4 lines broad.  *Many-leaved Weimannia*.  Tree.

38. *W. paulilíneófólia* (Pohl, in litt. ex D. C. prod.  4. p. 11.) leaves glabrous, except the rachis, which is hairy; leaflets 7-9, oblong, cuneate at the base, serrately toothed at the apex; joints of rachis oblong; racemes length of leaves.  h. S. Native of Brazil.  *Paulilíneófólia* Weimannia.  Tree.

39. *W. producta* (Moricand, mss. in D. C. prod.  4. p. 10.) leaves with 6-7 pairs of leaflets; leaflets small, ovate, coarsely toothed, rather coriaceous, glabrous on both surfaces: outer one elongated, acute, cuneate at the base; joints of rachis semi-obovate; racemes dense, much longer than the leaves.  h. S. Native of Peru.  W. sessilífofon, Pav. in herb. Moricand.  Branches pubescent.  Extreme leaflet an inch and more long, the rest 4-5 lines long, but the lower 2 are hardly 2 lines long.  Flowers white.  Pedicels length of flowers, and exceeding the bracteas.  *Drawn-out-leaved Weimannia*.  Tree.

*Cult.* The species of *Weimannia* will grow in any light rich soil; and cuttings will strike root in the same kind of soil, under a hand-glass, in heat.  None of the species are worth cultivating for ornament.

II. LEIOSPERMUM (from λειος, leios, smooth, and σπέρμα, sperma, a seed; in reference to the seeds being smooth).  D. Don, in edinb. phil. journ. April, 1830.—Weimannia, species of authors.


2 L. parvifólium (D. Don, l. c.) petioles jointed at the base; racemes corymbose.  h. G. Native of New Zealand.  Weimannia parvifólium, Forst. prod. p. 29.  Leaves elliptic, recurved at the apex, an inch and a half long.  Racemes numerous, 1 1/2 or 2 inches long.  Flowers 3 times smaller than those of the first species.

*Small-flowered Leiospermum*.  Tree.

*Cult.* For culture and propagation see *Callicoma*, p. 201.  Not worth growing, unless in botanic gardens.


LIN. SYST.  *Octandria, Digynia*.  Calyx membranous, 4-parted, deciduous.  Petals 4, unguiculate.  Stamens 8.  Hypogynous glands 8, alternating with the stamens; cells of ovary many-ovulate, 20-30.  Styles 2, rarely 3, thickish.  Capsule opening from the top at the disseminates; cells many seeded, usually 5-10.  Placenta tetragonal.  Seeds fusiform, glabrous; testa larger than the nucleus, membranous, loose, elongated, and subarillate at the base.—A tree, native of Chili, with simple, serrated, glabrous leaves; jointless pedicels; twin, subfalcate, toothed, caducous stipulas; terminal panicked flowers; woody capsule, and the seeds nearly as in *Philadelphus*.


*Cult.* For culture and propagation see *Callicoma*, p. 201.

IV. PLATYLOPHUS (from πλατυς, platys, broad, and λόφος, lophos, a crest; the capsule is so much compressed at the apex as to appear winged).  D. Don, in edinb. phil. journ. April, 1830.—Weimannia species of Lin.

LIN. SYST.  *Octo-Decandria, Digynia*.  Calyx 4, but sometimes 5-cleft, permanent.  Petals 4, rarely 5, permanent, trifid;
segments linear, acute, sometimes undentate. Stamens 8 or 10. Disk hypogynous, urceolate, entire; cells of ovary bivolute. Styles very short. Capsule membranous, reticulately, flattened into a bipyramidal inflation at the apex, ventricose at the base, 2-celled; cells 1-seeded. Seed large, arched, with a smooth carunculate testa.

—An elegant tree, native of the Cape of Good Hope. Leaves petiolate, ternate; leaflets sessile, lanceolate, acuminate, sharply serrate, coriaceous, glabrous, reticulately with many veins. Flowers terminal, panicled.

1. P. trifoliata (D. Don, l. c.) 7. G. Native of the Cape of Good Hope, where the tree is called white ash by the English colonists. Weinmannia trifoliata, Lin. fil. suppl. 227. Thunb. prod. p. 77. exclusive of the synonyme of Lamark.

Trifoliate Platyphylus. Clt. 1820. Tree. Cult. For culture and propagation see Callicoma, below.


—Osterdyckia, Burm. afr. 259. t. 96.

Lin. syst. Decadria, Digynia. Calyx 5-cleft; segments deciduous. Petals 5, entire. Stamens 10. Disk hypogynous, small. Capsule opening from the base at the dissepiments; seeds many seeded. Seeds oblong, compressed, smooth, winged, with a rather loose membranous testa. Cotyledons somewhat foliaceous.—Smooth trees, with impari-pinnate leaves, serrated coriaceous leaflets, large caducous interpetiolar stipules, and with the flowers disposed in axillary racemes or panicles.

1. C. Carissa (Lin. spec. p. 569.) shrub; leaflets 5-7, lanceolate, coriaceous, serrate; racemes spicate, opposite; pedicels numerous, in fascicles. 7. G. Native of the Cape of Good Hope. Lam. ill. t. 371. Lodd. bot. cab. t. 826. Flowers white.


2. C. indica (Blum. bijdr. p. 867.) shrub; leaves somewhat ternately pinnate; leaflets ovate-oblong, acuminate, obliquely subulate at the base, nearly sessile; panicles axillary, clothed with rusty tomentum. 7. S. Native of Java, in woods on the higher mountains.

Indian Cunonia. Shrubs 6 to 8 feet.

3. C. Celebica (Blum. l. c.) arboreous; leaflets ovate-oblong, acuminate, serrated; lateral ones oblique at the base; panicles coriaceous, axillary. 7. S. Native of the Celebes, on the mountains.

Celebes Cunonia. Tree 20 to 30 feet. Cult. See Callicoma for culture and propagation.


1. A. pinna'ta (Blum. l. c.) leaves with 4-5 pairs of lanceolate, bluntly serrated coriaceous leaflets; stipulas deciduous; racemes usually twin. 7. S. Native of Java, in mountain woods, where it is called Kiringiti. Spiræa pinna'ta, Blume, cat. hort. Butl. p. 76.

Pinnate-leaved Arnoldia. Shrub.

2. A. heterophylla (Blum. l. c.) lower leaves with two pairs of leaflets, and an odd one: upper ones ternate or simple; leaflets lanceolate, distinctly serrulate; racemes twin or tern. 7. S. Native of Java, in mountain woods in the province of Bantam.

Variable-leaved Arnoldia. Shrub.

Cult. For culture and propagation see Weinmannia, p. 200.

VII. PTEROPHYLLA (from πτερον, pteron, a wing, and φυλλον, phyllon, a leaf; so called in reference to the large foliaceous stipules). D. Don, in edinb. phil. journ. April, 1830.


1. P. traxi'nea (D. Don, l. c.) 7. S. Native of the Island of Honimao, one of the Moluccas. Weinmannia? fraxinea, Smith, herb.

Ash-like Pterophylla. Tree.

Cult. See Weinmannia, p. 200. For culture and propagation.

VIII. CALYCOMIS (from καλος, kalos, beautiful, and σωμη, soma, body; in allusion to the tufts of flowers). R. Br. in gen. rem. p. 17. D. Don in edinb. phil. journ. April 1830.


1. C. verticillata (D. Don, l. c.) 7. G. Native of New Holland, among the mountains on moist rocks.

Whorled-flowered Calycomis. Shrub.

Cult. For culture and propagation see Callicoma.

IX. CALLICOMA (from καλος, kalos, beautiful, and σωμη, soma, body; appearance of tufted heads of flowers). Andr. bot. rep. t. 566.

Lin. syst. Octo-Decadria, Digynia. Calyx 4-parted, rarely 5-parted (f. 37. a.), permanent. Petals wanting. Stamens 8, rarely 10 (f. 37. b.). Disk hypogynous, small. Ovarium distinct; cells many-ovulate. Styles 2, setaceous (f. 37. d.). Capsule inclosed in the calyx, which is permanent, dehiscent at the dissepiments; cells many-seeded from abortion. Seeds obovate, scarious from minute papillae on every side, like those of Saxifraga; with a crustaceous testa.—Trees, natives of Australia. Leaves simple, petiolate, serrate; petioles jointless. Stipulas membranous, bidentate, caducous. Flowers capitate; heads terminating the tops of the branchlets, pedunculate, globose.

1. C. serratifolia (Andr. l. c.) leaves lanceolate, acuminate, hoary beneath, attenuated at the base. 7. G. Native of New Holland, where the tree is called black wattle by the English colonists. Delaun. herb. amat. t. 239. Sims. bot. mag. 1811. Codin serratifolia, Ser. ms. ex D. C. prod. 4. p. 7.

D d
Flowers yellow. The twigs are used for making baskets in New Holland. Perhaps the flowers are dioecious. (f. 37.)


2 C. FERRUGINEA (D. Don, in edinb. phil. journ. April, 1830.) leaves oblong, acute, cuneate at the base, clothed with rustyomentum beneath, and on the branchlets. G. Native of New Holland. Leaves simple, petiolate, elliptic-oblong, acute, serrated, coriaceous, glabrous, with the veins numerous and reticulated beneath: petals articulated at the base. Stipulas undivided, caducous. Flowers small, white, panicled. Panicle terminal, much branched. 1 S. ovata (D. Don, l.c.) G. Native of New Holland.

Ovate-leaved Schizomeria. Fl. 1825. Shrub 8 to 10 feet. Cult. For culture and propagation see Callicoma above.

X. CERATOPETALUM (from κέρας, keras, a horn, and πεταλον, petalon, a petal; the petals are jagged so as to resemble a stag's horn). Smith, nov. holl. 1. p. 9. t. 3.

Lin. syst. Decandria, Digyna. Calyx with a 5-parted permanent limb (f. 38 a.). Petals 5 (f. 38 b.), linear, multifid, stiff, permanent, or wanting. Stamens 10; anthers cordate, terminated by a beak-formed process (f. 38 c.). Ovarium half inferior, 2-celled, few-ovulate. Capsule 1-seeded from abortion, dehiscing at the apex. Seed round, with a thick crustaceous testa. —Trees, natives of New Holland, with ternate or simple serrated glabrous leaves, standing on petioles, which are jointed at the apex. Stipulas undivided, rather foliacious, caducous. Flowers terminal, panicled.

* Leaves ternate; flowers with petals.

1 C. Gummi'ferum (Smith, nov. holl. t. 3.) G. Native of New Holland, where it is called red gum-tree by the English colonists. (f. 38.)

Gum-bearing Ceratopetalum. Cilt. 1820. Tree 60 feet.

** Leaves simple; flowers apetalous.

2 C. Apetalum (D. Don, in edinb. phil. journ. April, 1830.) leaves lanceolate. G. Native of New Holland. Ceratopetalum monopetalum, Caley, mss. Perhaps the flowers are sometimes furnished with one petal.

Apetalous Ceratopetalum. Tree.

3 C. Montana'num (D. Don, l. c.) leaves linear-lanceolate. G. Native of New Holland, on the mountains.

Mountain Ceratopetalum. Tree.

Cult. For culture and propagation see Callicoma above.

XI. SCHIZOMERIA (from σχίζω, schizo, to cut, and μέρος, meris, a part; in reference to the cut petals). D. Don, in edinb. phil. journ. April, 1830.

CUNONIACEÆ. XIII. Belangeria. XIV. Bauera. XV. Geissois. GALACINÆ.

Cunicate-leafletted Belangeria. Tree.
3 B. tomentosa (Cambess. l. c. p. 205. t. 116.) leaves trifoliate; leaflets oblong, acuminate, sharply serrated, tomentose beneath; capsule clothed with white tomentum. f. S. Native of Brazil, in the province of Minas Geraes, near Tejucu, Barbacena, &c., and near the town of St. Paul. Polysémon triphyllus, D. Don, in edinb. phil. journ. April, 1830.

Tomentose Belangeria. Tree.
4 B. speciosa (Cambess. l. c. p. 206. t. 117.) leaves of 5 leaflets; leaflets ovate-elliptic or lanceolate, acute, sharply serrated, glabrous. f. S. Native of Brazil, in that part of the province of Minas Geraes called Minas Novas. Polystémon pentaphyllus, D. Don, in edinb. phil. mag. April, 1830.

Beautiful Belangeria. Tree.
Cult. See Weinmannia, p. 200., for culture and propagation.

XIV. BAUERA (named in honor of Francis and Ferdinand Bauer, two celebrated German draughtsmen). Salisb. in ann. bot. p. 512. t. 10.
Linn. syst. Icosandria, Trigynia. Calyx 6-10-parted (f. 39. a.). Petals 6-10 (f. 39. c.). Stamens numerous, disposed in a double order; anthers peltate (f. 39. d.); cells connate, bursting lengthwise. Styles 2 (f. 39. b.,) glabrous; stigma simple, obtuse. Capsule superior, 2-celled, 2-valved, opening at the apex by a transverse chink; cells few-seeded; disseminat placentiferous. Seeds oblong-cylindrical, erect, branched, leafy, roughish from resinous atoms.—Small shrubs, natives of New Holland. Leaves 6 in a whorl, approaching by threes, and therefore as it were opposite and ternate, exstipulate. Flowers rosaceous, axillary, solitary, pedunculate.
2 B. humilis (Sweet, hort. suburb. p. 124.) leaves oblong, crenated; flowers poly-petalous. f. G. Native of New Holland. Loud. bot. 1197. Calyx 8-10-cleft. Corolla 8-10-petalled, red, one half smaller than those of B. rubifolia, and the plant is altogether much smaller.
3 B. Billardierii (D. Don, in edinb. phil. journ. April, 1830.) leaves lanceolate, nearly quite entire; flowers with 6 petals.
4 B. Native of Van Diemen's Land. B. rubioides, Labill. miss. Habit of the rest.
La Billardier's Bauera. Shrub 1 to 2 feet.
4 B. microphylla (Sieb. pl. exsic. nov. holl. no. 289. D. Don, in edinb. phil. journ. April, 1830.) leaves elliptic-oblong, quite entire; flowers with 6 petals. f. G. Native of New Holland. Leaves like those of Thymus serpyllum. Flowers smaller than those of B. rubifolia, red.
Small-leaved Bauera. Shrub 1 to 2 feet.
5 B. capitata (Ser. miss. in D. C. prod. 4. p. 13.) leaves oblong, 3-lobed at the apex; flowers terminal, capitate, sessile.
6 B. Native of New Holland, on the western coast.
Capitate-flowered Bauera. Shrub.
Cult. The species of this genus are very pretty little shrubs, which flower nearly the whole year through; they are therefore very desirable plants for a greenhouse or conservatory. They are rather hardy, and easily cultivated. An equal mixture of sandy loam and peat is the best soil for them; and young cuttings root freely in the same kind of soil, under a bell glass.

Tribe IV.

SYMPHYOGENYNE (from symphyos, symphyo, to join, and γυνη, gynæ, a style; styles joined). Stamens definite. Ovarium free. Styles connate.

XV. GEISSOIS (from geissos, geisson, the house-eaves; seeds imbricated like the tiles on a house). Labill. sert. cal. p. 50. t. 50. D. Don, in edinb. phil. journ. April, 1830.
Linn. syst. Octandria, Monogynia. Calyx deciduous. Petals wanting. Stamens 8. Style 1, with the base remaining; stigmas 2, simple. Capsule compressed, 2-celled, 2-valved; cells many-seeded. Seeds compressed, winged, with a membranous testa.—A tree, with opposite, petiolate, quinate leaves; elliptic, obtuse, quite entire leaflets, which are pubescent beneath; oblong, ribbed, undivided, caducous stipulas; and axillary, many-flowered racemes, which are either solitary or by threes.
1 G. racemosa (Labill. sert. caled. p. 50. t. 50.). f. G. Native of New Caledonia.
Racemose Geissois. Tree.


Calyx 4-5-parted, permanent. Petals 4-5, hypogynous, caducous, alternating with the calycean segments; stamens 8-10-16, hypogynous, joined into a tube, which is toothed at the apex, or distinct; filaments or alternate teeth antheriferous. Ovarium composed of 3 or 4 follicles, which are joined, therefore 3-4-celled; ovula indefinite; stigma composed of 3-4 joined ones, undivided or 4-lobed. Capsule 3-4-celled, 3-4-valved; valves bearing the disseminations in the middle. Central placenta none. Seeds numerous, minute, scobiform, inserted in the inner angle of the cells; outer testa loose, membranous, cellular: inner one very thin, closely adhering to the albumen. Albumen copious, fleshy, Embryo erect, terete, with short cotyledons, and a long cylindric centripetal radicle.—Perennial American herbs. Leaves radical, simple, lyrate, pinnatisect or serrated; the teeth tipped each by a gland. Flowers terminal, copious, disposed in spicate racemes; pedicels 1-flowered, propped each by a permanent bracteole.

This order differs from Saxifragaceæ by the presence of sterile stamens, alternating with the fertile ones; in the absence of a central placenta; and in the frequent quaternary arrangement, in the parts of the calyx and corolla.

Synopsis of the genera.

1 Galax. Calyx 5-parted. Petals 5. Stamens joined into a tube, which is 10-toothed: the alternate teeth antheriferous; anthers 1-celled. Stigma entire. Capsule 3-celled.
2 Francoa. Calyx 4-parted. Petals 4. Stamens distinct,
16. of which are fertile; anthers 2-celled. Stigma 4-lobed. Capsule tetragonal, 4-celled.


Lin. syst. Pentandroa, Monogynia. Calyx 5-parted. Petals 5. Stamens joined into a tube, which is 10-toothed at the apex: the alternate teeth bearing anthers; anthers 1-celled; cell transverse. Stigma of 3 joined ones, therefore trigonal, 3-furrowed. Ovarium villous. Capsule 3-celled, destitute of any central column. Seeds mucronate at both ends, as in Acispora of De Candolle.—A small herbaceous plant; with radical corollae stiff crenated leaves; and naked scapes (f. 40. c.), bearing a loose, spicate raceme of small white flowers at the apex.


Cult. This is a pretty little plant; succeeds best in peat soil, and if planted out in a moist situation, will grow and flower freely. It is increased by dividing at the roots.


Lin. syst. Ocantandra, Tetragyna. Calyx 4-parted. Petals 4, spathulate, with their nerves pinnate and branching towards the apex. Stamens 16, only 8 of which are antheriferous, these are subulate or setaceous, and tapering at the apex; the 8 sterile ones are flattened, obtuse, shorter and broader; anthers corollae, 2-celled, 2-lobed at the base: cells confluent at the apex. Ovarium bluntly 4-sided, 4-celled, with 4 furrows, which are opposite the dissepiments. Style very short, or wanting; stigma 4-lobed: lobes dilated, obtuse, and pruinose. Capsule tetragonal, having the angles drawn out a little at the apex into 4 tubercles, 4-celled, 4-valved; cells prominent, debasing by a longitudinal suture, many-seeded; dissepiments formed from a double lamina. Seeds ovate-oblance, fuscous, smooth, mucil.—Perennial herbs, natives of Chili, beset with simple, deciduous hairs. Leaves lyrate, nearly like those of the turnip, reticulately veined; lobes roundish, toothed: terminal one large, corollae, obtuse, sinuate-toothed; teeth terminated each by a gland. Flowers red, terminal, copious, in spicate racemes, which are disposed in a panicle; pedicels 1-flowered.

1 F. Appendixulata (Cav. in ann. sc. nat. mattr. 4. p. 275. icon. 4. p. 76. t. 596.) stemless; leaves petiolate; racemes loose, second; calyce segments lanceolate, acute; lobes of stigma cuneate, emarginate. 2 F. Native of the island of San Carlos de Chiloe. D. Don, in Sweet, fl. gard. new ser. t. 151.—Herb hairy. Leaves petiolate, lyrate. Spike nearly simple. Petals pale red, marked each by a deeper spot in the middle. Fertile filaments 3 times longer than the sterile ones.

FIG. 40.


3 F. Ramósia (D. Don, in edinb. phil. journ. Oct. 1826.) plant caulescent; leaves petiolate; racemes spicate, erect; calyce segments lanceolate, obtuse, nerveless; lobes of stigma cuneate. 4 F. Native of Chili, near Santiago. Herb erect, branched, hairy. Stem furnished with small, petiolate, simple, deeply-toothed leaves. Radical leaves not seen, but they are probably lyrates. Flowers smaller and more numerous than in the rest of the species, neither are they secund, but disposed on every side of the racemes, erect; petals obovate, obtuse. Fertile filaments 4 times longer than the flatter, obtuse, sterile ones. Style distinct, but very short; stigma 4-lobed; lobes cuneate, emarginate, or 2-lobed, thick, with revolute margins.


Cult. The species of Francoa are beautiful plants when in flower, and deserve a place in every garden. A mixture of pot and sand is the best soil for them; they should be grown in pots, well drained with sherd, to prevent their rotting. The protection of a frame is sufficient for them in winter; or they may be planted out in the open ground, in a warm sheltered situation, where they will probably survive the winter by a little protection. They are only to be increased by seeds.


Lin. syst. Octandria, Diphyma. Calyx 4-parted; lobes ovate, equal. Petals 4, the 2 superior ones roundish-ovate, large; the 2 inferior ones small, oblong. Stamens 8. Ovarium ovate, clothed with glandular pubescence. Styles 2, very short, smoothish, slender. Capsule 2-celled, dehiscing at the apex at the dissepiments, many-seeded.—A smoothish slender herb. Radical leaves on long petioles, orbicular, profusely corollae, with the recess closed, palmately 3-nerved, sinuate-toothed; recesses broad, obtuse, mucronulate. Spike erect, naked, simple. Racemes elongated; pedicels short, 1-flowered, longer than the bracteae; larger petals cream-coloured, red at the base, smaller ones red.

1 T. hydrocotylepflora (D. C. l. c.). 2 F. Native of Chili, at Concon, in the mountains of Leone, where it is called Tetilla by the natives.

Hydrocotyle-leaved Tetilla. Pl. 1 to 2 feet.

Cult. This is a curious and beautiful plant. Its culture and propagation are the same as that recommended for the species of the genus Francoa.

Calyx either superior or inferior, of 4 or 5 sepalae (f. 42. a. f. 43. a.), which cohere more or less at their base. Petals 5 (f. 42. b. f. 45. d.) or wanting, inserted between the lobes of the calyx. Stamens 5-10, inserted either into the calyx or beneath the ovary; therefore they are either perigynous or hypogynous; anthers 2-celled, bursting lengthwise. Disk either hypogynous or perigynous, sometimes obsolete, sometimes annular and notched, rarely consisting of 5 scales. Ovarium inferior, or nearly superior, usually consisting of 2 or 5 carpels (f. 42. d. f. 46. c. f. 48. c.) or follicles, cohering more or less on the inner side, but distinct at the apex; sometimes 2-celled, with a central placenta; sometimes 1-celled, with parietal placentae, rarely 4-5-celled. Styles none; stigmas sessile on the tips of the lobes of the ovary (f. 42. c. f. 52. c.). Fruit generally a membranous 1-2-celled capsule, with 2 bracteas, rarely a 4-5-celled 4-5-valved capsule, and sometimes a 4-celled berry. Seeds numerous, very minute, usually with long hexagonal reticulations on the side of a transparent testa. Embryo terete, in the axis of a fleshy albumen, with the radicle next the hilum.—

Shrubs or herbs, variable in habit. Leaves simple, either divided or entire, alternate, without stipules. Flower-stems simple, often naked.

The plants of this order agree in some respects with the herbaceous part of Rosaceae, with which they agree in habit, and from which they differ in their polyspermy partially concreta carpella, albuminous seeds, and want of stipules. From Cunoniaceae they are divided by their habit, and by the want of stipules. To Caryophylleace their habit allies them; but they differ in the insertion of their stamens, the situation of the embryo, and otherwise. Grossulariace agree very much in the structure of the flowers, but differ from them in the capsular fruit, usually 2-celled ovary, in the seeds being without aril, furnished with a short podosperm, not gelatinous on the outside, and in the more fleshy albumen and habit. From Grossulariaceae they differ in the fewer carpella, which are joined together, and usually with the calyx; and in having no glands on the inner side of the carpella. From Umbelliferae they are easily distinguished in the carpella or cells of the ovary being dehiscent and many seeded, not indesinient and 1-seeded, in the form of the petals, in the absence of vine, and in habit. From Viagnnea, to which the tribe Hydrangeae comes very near, in the fruit being capsular, not baccate, and in the styles being exerted, not wanting, &c. From Vacciniaceae, Campanulaceae, Ericaceae, Gentianaceae, in the corolla being polyptalous, not gamopetalous. The genus Drummionia has the stamens equal in number to the petals, and opposite them; thus indicating some analogy to the monopetalous Primulaceae.

According to De Candolle the whole order is more or less astringent. The root of Heuchera Americana is a powerful astringent, whence it is called in North America alum-root, Barton, 2. p. 162. Otherwise they possess no known properties; for the old idea of their being lithontripic appears to have been derived from their name, rather than their virtues.

Synopsis of the genera.

Tribe I.


§ 1. Stamens twice the number of the petals or sepalae.

1 Saxifraga. Calyx 5-parted (f. 41. a. f. 42. a.). Petals 5 (f. 41. b. f. 42. b. f. 46. c.), on short claws, entire. Stamens 10 (f. 42. c. f. 46. d.), Capsule adnate to the calyx or nearly so, composed of 2 carpella (f. 42. d.), which are usually joined to the ovary, many seeded (f. 42. f.).

2 Erigynia. Calyx 5-cleft. Petals 5, hardly unguiculate. Stamens 20, monadelphous at the base. Ovary 4-6, free, connected together by dense wool. Carpels distinct, 4-6, free from the calyx, many seeded.

3 Leftera. Calyx 5-parted (f. 47. a.). Petals 5 (f. 47. b.), entire, on short claws. Stamens 10; anthers (f. 47. c.), 1-celled, 2-valved. Capsule composed of 2 carpellae (f. 47. c.), which are joined at the base, many seeded.

4 Chrysosplenium. Tube of calyx adhering to the ovary; limb 4-5-lobed. Petals wanting. Stamens 8-10. Styles 2. Capsule 2-valved and 2-beaked, at length 1-celled and many seeded.


6 Tellima. Free part of the calyx inflated, 5-toothed (f. 49. b.), the adhering part conical. Petals 5 (f. 49. c.), jagged. Stamens 10 (f. 49. a.). Styles 2-3, distinct. Capsule (f. 49. f.), 1-celled, 2-valved at the apex.


§ 2. Stamens equal in number to the petals, or fewer, and alternating with them.


Tribe II.

Hydrange'æ (plants agreeing with Hydrângēa in being shrubby). D.C. prod. 4. p. 13.


17 Cian'tis. Limb of calyx 5-toothed. Petals 5, rather fleshy. Stamens 10. Styles 3-5; stigmas obtuse. Berry crowned by the teeth of the calyx, somewhat 3-5-celled, many seeded.


19 Broussai'sia. Calyx 5-parted, hemispherical, free from the ovary. Petals 5, oblong, acuminate, with the acumen reflected as in umbelliferous plants. Stamens 10, hypogynous. Ovarium roundish, crowned by the short style and truncate stigma, 5-celled; cells many seeded.

Tribe I.


§ 1. Stamens twice the number of the petals and sepals.


Lin. syst. Decândria. Dijg'nia. Calyx 5-cleft (f. 41. a. f. 42. a. f. 46. a.). Petals 5 (f. 42. b. f. 46. c.), entire, unguiculate. Stamens 10 (f. 42. c. f. 46. d.); anthers 2-celled. Styles 2 (f. 42. c.), permanent. Capsule (f. 42. d.) 2-celled, 2-valved, 2-beaked, opening within the beak by an orbicular hole, many seeded. Seeds minute, smooth.


1 S. crassif'olia (Lin. spec. 575.) leaves oval or obovate, very blunt, glabrous, serrulatad; petals elliptic-oblong. 2. H. Native of Siberia, on the Alps. Curt. bot. mag. 196. Gmel. fl. sib. 4. p. 166. t. 56. Megâsea crassif'olia, Haw. enum. sax. 6. Flowers large, red. The root is stiptic or astringent when chewed.

Var. b, Haw'orthiana (Ser. in D. C. prod. 4. p. 36.) leaves somewhat orbicularly cordate, flat, hardly crenated. 2. H. Native of Siberia. Megâsea média, Haw. enum. sax. 7.


Var. b, minor (Wall. mss.) leaves much smaller; flowers more loose, and distant.


Petals white or pale red, furnished at the base with red and yellow spots.


Var. $\gamma$, crenata (Haw. l. c.) hairy; leaves reniform, round, bluntly crenated. $\gamma$. H. Robertsonia crenata, Haw. l. c. S. crenata, Loud. hort. brit. p. 53.

Var. $\delta$, polia (Haw. l. c.) hairy; leaves reniform, roundish, sharply toothed, with the surface naked and smooth. $\gamma$. H. Native on the mountains of Scotland. Robertsonia polia, Haw. l. c. S. polia, Loud. hort. brit. p. 176.

Saxifraga, Fl. May, July. Ireland. Pl. 1 foot.


Var. $\beta$; leaves roundish, cordate, glabrous on both surfaces.

Var. $\gamma$, sphaeroidea (Haw. enum. sax. p. 54.) leaves broadly oval, somewhat cordate, bluntly crenated, with the surface naked. $\gamma$. H. Native of the Pyrenees. Robertsonia sphaeroidea, Haw. syn. 32%. S. sphaeroidea, Loud. hort. brit. 176.

Saxifraga, Fl. May, June. Ireland. Pl. $\frac{1}{2}$ to 1 foot.


Shady Saxifrage, None-so-pretty, or London-pride. Fl. April, June. Ireland. Pl. $\frac{1}{2}$ to 1 foot.

7 S. cuneifòlia (Lin. spec. p. 574.) leaves cuneiform, re-


Wedge-leaved Saxifrage. Fl. May, June. Clt. 1768. Pl. $\frac{1}{2}$ to $\frac{1}{4}$ foot.

8 S. paucifòlia (Sternb. rev. sax. suppl. 1. p. 6. t. 4. f. 2.) root tufted; leaves roundish or ovate-roundish, toothed, cuneated at the base, running down the petiole, which is short: petals ovate, unguiculate, longer than the calyx. $\gamma$. H. Native of Siberia and Kantschatka. Petals spotted.

Few-flowered Saxifrage. Pl. $\frac{1}{2}$ foot.

9 S. specifòla (D. Don, in Lin. trans. 13. p. 354.) leaves on long petioles, orbicularly cordate, sharply serrated, veiny, pilose; petioles dilated at the base; raceme elongated, spike-formed; calyces segments very short. $\gamma$. H. Native of Sledge Island, on the west coast of America. S. gèum, Pursh, fl. amer. sept. 1. p. 311. but not of Lin. Plant tufted. Petals elliptic-oolong, dotted, 3-nerved, with the nerves branched.

$\gamma$. H. Native of the western coast of America. Flowers white, size of those of S. stellàris. A beautiful species.

Nelson's Saxifrage. Pl. $\frac{1}{2}$ to 1 foot.


$\gamma$. H. Native of the western coast of America. Flowers white, size of those of S. stellàris. A beautiful species.

Sharp-cut-leaved Saxifrage. Pl. $\frac{1}{2}$ foot.


Var. $\beta$, elàta (D. Don, in Lin. trans. 13. p. 357.) scapes numerous, a foot high. $\gamma$. H. Native of Siberia.

Var. $\gamma$, angustifòlia (D. Don, l. c.) leaves narrower and longer, with few teeth at the apex. $\gamma$. H. Native of Siberia.

Var. $\delta$, Schleichèri (D. Don, l. c.) leaves obovate, re-panidly crenated; scapes humble, flexuous. $\gamma$. H. Native of Switzerland, on the Alps. S. stellàris, Schleich. in litt.

Var. $\epsilon$, Bellàrdì (D. Don, l. c.) plant stemless; leaves roundish, re-panid; flowers sessile. $\gamma$. H. Native of the Alps of Piedmont. S. Bellàrdì, Allion. pedem. no. 1536. t. 88. f. 1.
Var. ë, dissimilis; leaves with deep broad teeth. ë. H. Native of Scotland, on the western Highlands. S. dissimilis, G. Don, in Loud. hort. brit. p. 176.

Var. ë, stellata (D. C. fil. fr. 4. p. 379. var. a.) plant very minute; leaves 1-flowered. ë. H. Native of Switzerland, on the Alps. S. stellaris β, pumila, Gaudin, fl. helv. 3. p. 100.

Var. ë, acaulis (Hall. fl. in Meiss. anz. 1818. p. 76) flowers sessile, in the heart of the leaves. ë. H.


13 S. Foliolata (R. Br. in Parry's 1st voy. app. p. 275.) radical leaves cucumed, a little toothed; scape divided; branches bearing 1 flower at the apex, covered below by a fascicle of small leaves; calyx inferior, ovate; segments of the petals cordate-lanceolate. ë. H. Native of Lapland, Melville Island, and other arctic islands. S. stellaris γ, Lin, fl. lapp. ed Smith, p. 144. t. 2. f. 3. S. stellaris β, comosa, Willd. spec. 2. p. 644.

Leafy Saxifrage. Pl. 1 foot.


Var. β; plant clothed with pubescent tomentum. ë. H. Native of the north-west coast of America, on Dundas Island, in Queen Charlotte's Sound.


15 S. Melaleuca (Fisch. in Sternb. rev. sax. suppl. 3. t. 3.) leaves roundish ovate, acutish, somewhat dentilicate, tapering into the petiole, glabrous; scape few-flowered, also glabrous; flowers disposed in a somewhat paniculate corymb; calyxine segments ovate, acute; petals unguiculate. ë. H. Native of Altai, on the Alps in the river Tschulyschm, and at Lake Teletskoje Osero. S. elongāta β, glabra, Sternb. rev. sax. p. 9. Petals ovobate, pale sulphur coloured, suffused with violet on the outside; filaments of a pale violet colour. Leaves greenish yellow; upper part of plant of a deep violet colour.

Black and white Saxifrage. Fl. ½ to 2 foot.

16 S. Strigosia (Wall. cat. no. 448.) lower leaves sessile, somewhat roundish, oblangu-lanceolate, few-toothed, mucronate at the apex, clothed with strong hairs; calyces leaves lanceolate-linear, acute, entire, much smaller than the lower ones; stem simple, few-flowered, and is as well as the pedicles bent with numerous capitulate hairs; sepals lanceolate, acute; petals 3-nerved, obtuse; styles very short; stigmas thickish. ë. H. Native of Nipaul, on the Emodi mountains at Gosainthth, and at Kamoone. Leaves almost the same and form of those of Arabis alpina. Filaments flat.

Strigose Saxifrage. Pl. ½ foot.

17 S. Sarmentosa (Lin. fil. suppl. p. 240.) stolons or runners creeping; leaves orbicularly cordate, lobately crenated, pilose, red beneath; petals unguiculate, the 2 outer ones large and flaccid. ë. F. Native of China and Japan, in moist places on mountains, among stones. Schreb. mon. dion. p. 16. t. 2. f. 3. Curt. bot. mag. 92. S. stolonifera, Jacq. icon. rar. 1. t. 80. Ligularia sarmentosa, Duval, pl. sec. p. 11. ex Haw. env. sax. p. 50. Diptera sarmentosæ, Borkh. in Rœm. mag. 1. p. 29. S. ligulata, Mohr. comm. 1781. p. 26. t. 1. S. Chinensis, Lour. cochl. p. 281. Petals white: 3 inner ones cordate; of these the 3 lateral ones are marked by a yellow spot at the base; and the central one by 2 scarlet spots at the base: but the 2 outer petals are large, flaccid, and 3-nerved.

Var. β, cuscuseformis (Ser. in D. C. prod. t. 4. p. 43.) plant more slender; stem usually 2-flowered; leaves ovate-roundish, coarsely and simply toothed; flowers less irregular; petals more acute. ë. F. Native of China. S. cuscuseformis, Lodd. bot. cab. t. 186. Ligularia minor, Haw. env. sax. p. 151. The stolons or runners resemble dodder very much.


Var. β; leaves hairy.


19 S. huasta (Haw. env. sax. p. 47. under Aulaxis) leaves naked, doubly and deeply toothed. ë. H. Native country unknown.

Naked-leaved Saxifrage. Fl. May, Ju. Clt. 2. Pl. ½ to 1½ foot.

Sect. III. Léuconyx (from λευκος, leios, smooth; and γυνη, gyné, a female; in reference to the stigmas being beardless). D. Don, in Lin. trans. 13. p. 344. Calyx deeply 5-cleft (f. 41. a.) Petals (f. 41. b.) sessile in most of the species. Stigmas inserted in the throat of the calyx (f. 41. c.); filaments subulate. Styles straight; stigmas orbicular, flatish, beardless. Capsule free from the calyx (f. 41. d.). Seeds roundish. —Humble herbs, rarely subshrubs. Roots fibrous, but in many of the species they are granular. Stems flexuous, usually many-flowered and many-leaved. Leaves in all reniform and lobed. Flowers white or yellow.


21 S. hybrida (Sternb. env. sax. p. 17. t. 8. f. 3.) radical leaves petiolate, roundish-cuneated, crenated: cauline ones minute, entire; stem panicked. ë. H. Native of the Pyrenees. Very like S. rotundifolia, but differs in the smaller stature and slenderer habit; in the leaves being acute at the base, not cordate, and in the cauline ones being minute, entire, and nearly sessile.

Hybrid Saxifrage. Pl. 1 foot.

22 S. diversifolia (Wall. cat. no. 452.) leaves thickish, more or less pilose, of many forms; lower ones cordate, petiole: cauline ones petiolate, or sessile and stem-clasping, entire; of a different colour beneath, reticulately veined, marked above by small depressed dots; flowers in panicked corymbbs; bractees and calyces more or less ciliated with short, capitulate
Saxifraga.


Var. a. lanceolata (Ser. in D. C. prod. 4. p. 44.) leaves lanceolate; lower ones not seen; but the middle ones are attenuated at the base, and acutish; calyceine lobes oblong, beset with glandular hairs. 2. F. S. diversifolia, Wall.

Var. b. pannsanifolia (Ser. l. c.) radical leaves cordate, obtuse, on long petioles; cauline ones cordate, stem-clasping, obtuse; calyceine lobes oblong, beset with glandular pilis. 2. F. S. pannsanifolia, Wall. cat. no. 451.

Var. v. Moorecroftiana (Ser. l. c.) lower leaves elliptic; calyceine lobes crenated, ovate-oblong, numerous; flowers larger; calyceine lobes more ciliated with glands. 2. F. S. Moorecroftiana, Wall. cat. no. 452.

Diverse-leaved Saxifrage. Pl. 1 foot.

29 S. parviflora (Div. stipr. rar. fasc. 4. p. 1 t. 3.) stem branched at the base, or simple; leaves reniform, 5-lobed; superior ones 3-lobed: uppermost ones entire, lanceolate; peduncles spreading, opposite the leaves; petals ovate, longer than the calyx. 2. F. Native of Sicily, in the mountains, on mossy rocks.—Cup. panph. 3. t. 36. Flowers white, almost like those of Stellaria media. Stigmas very short, diverging; stigmas spatulate, papillosc. Capsule bladdery, slender.

Var. a. ramosa (Ser. in D. C. prod. 4. p. 44.) stem branched at the base, few-flowered; lower leaves 5-lobed, crenated; superior ones 3-lobed. 2. F. Native among rocks, on Mount Moronis, near the monastery of St. Martini de Scalis. Bernardi, l. c. t. 3.

Var. b. Bocconiana (Ser. l. c.) stem purple, erect, 2-flowered; lower leaves 3-lobed, or lanceolate, entire. 2. F. Native on the mountains, about Palermo. (ex Guss. Bocc. cent. 2. p. 4. t. 45. f. 2.)

Small-flowered Saxifrage. Pl. 1 foot.

24 S. cymbalaria (Lin. spec. 579.) lower leaves reniform, on long petioles, very bluntly 5-lobed: upper ones 3-lobed or undivided; calyceine segments oblong, obtuse; petals ovate, acute, with branched nerves. 2. H. Native of the Levant, on Parthassus Delphius and other Grecian mountains. Smith, fl. grce. 378. S. hederacea, Bieb. fl. taur. 1. p. 317. exclusive of the synomymes. Lobara cymbalaria, Haw. Enum. sax. t. 18.

Buxb. cent. 2. p. 40. t. 45. f. 2.—Vaill. itin. ed. gall. t. 362. Flowers small, golden yellow. Stems numerous, leafy, slender, flaccid, creeping at the base.

Cymbalaria-like Saxifrage. Pl. cr.


Oriental Saxifrage. Pl. dec.

27 S. Russi (Presl, del. prag. p. 140.) radical leaves petiolate, repandly crenated, cordate at the base, somewhat 5-lobed: cauline ones sessile: lower ones 3-lobed, middle lobe the longest; uppermost leaves lanceolate, entire; sepals ovate; petals lanceolate, 3-nerved, twice the length of the calyx. 2. H. Native of Sicily, on rocks and among stones, about Giuliana. Plant 2-8 inches high, beset with short glandular hairs. Flowers white.

Russo’s Saxifrage. Pl. 4 foot.

28 S. Jamesii (Torrey, in ann. lyc. new york 2. p. 204.) plant beset with glandular pubescence; lower leaves on long petioles, reniform, crenately lobed; upper leaves tapering into the petiole, cuneated, nearly sessile; lobes of calyx triangularly ovate, acute; petals spatulate, acute, on long claws; racemes second; bracteae lanceolate; pedicels of calyxes glandular. 2. H. Native of North America, among the Rocky Mountains. Hook, fl. bor. amer. 1. p. 247. t. 74. Flowers about the size and colour of those of S. oppositifolium (fig. 41.)

James’s Saxifrage. Pl. ½ foot.

29 S. Richardsonii (Hook, fl. bor. amer. 1. p. 247.) stem glandular, leafy, pubescent above; leaves on long petioles, orbicularly cordate, crenately lobed, veiny, with the margins and veins glandular beneath; glands pedicellate; racemes rather compound; bracteae lanceolate, and are as well the pedicels glandular; petals ovatelliptic, on short claws, very acute, nerv'd, about twice the length of the calyceine segments, which are acuminated; stamens 5. 2. H. Native of the Arctic Sea shore, between the Mackenzie and Coppermine rivers; and of Kotzebue’s Sound. S. Nelsoniana, Hook. et Arn. in bot. Beech. p. 124. t. 29. but not of D. Don. This and the preceding are very elegant plants.

Richardson’s Saxifrage. Pl. ¾ foot.

30 S. nudicaulis (D. Don, in Lin. trans. 13. p. 366.) leaves reniform, palmate, glabrous: lobes ovate, mucronate; stem erect, naked, terete; flowers panicked; lobes of calyx triangularly ovate, acute; petals ovate, a little longer than the calyx. 2. H. Native of the north-west coast of America, Behring’s Straits. S. gracilis, Steph. in Sternb. rev. sax. suppl. p. 7. t. 56. f. 1. Flowers panicked, white, size of those of S. rivularis. Naked-stemmmed Saxifrage. Pl. ½ foot.

31 S. hetera'nta (Hook. fl. bor. amer. 1. p. 252. t. 78. b.) plant rather pubescent; radical leaves on long petioles, reniformly cordate, membranous, veiny, many-lobed: lobes short, somewhat tridentate: teeth acute, mucid; scape naked; flowers panicked, usually abortive: some of the filamentae, and others petal-formed; ovary free; calyxes reflexed; branches of panicle sometimes bearing bulbs below. 2. H. Native of North America, common on moist rocks of the Columbia, from its source to its confluence with the sea. The leaves resemble those of S. rotundifolia, but they are furnished with a long, membranous, sheathing base, and altogether radical.

Variable-flowered Saxifrage. Pl. ½ foot.

32 S. granulata (Lin. spec. p. 576.) plant hairy; radical leaves reniform, crenately lobed: cauline ones petiolate; calyceine segments lanceolate, obtuse; petals spatulate; root granular. 2. H. Native of the north and middle of Europe, in dry fields and the borders of woods; plentiful in some parts of Britain. Fl. dan. t. 514. Lam. ill. t. 272. f. 1. Smith, engl. bot. t. 500. Stem leafy, many-flowered; pedicels elongated, E e
1-flowered, and are as well as the calyxes clothed with clammy down. Flowers snow-white; nerves of petals branched.

Var. β, plena; flowers double. Common in gardens.

Var. γ, multicaulis (Lapeyr. fl. pyr. t. 27.) stems numerous, short; lower leaves lobed, broadly crenated: upper ones obovate, acuminate, entire, rarely 1-2-toothed; peduncles many-flowered.


Var. δ, Corsicana (Ser. in D. C. bot. gall. 1. p. 211.) plant very small; stem 1-4-flowered; leaves small, crenately lobed; flowers hardly smaller than those of the species. 2. H. Native of Corsica. S. rivulatis, Pr. Th. exsic.

Var. ε, penduliflora (Ser. in D. C. bot. gall. 1. p. 211.) leaves reniform, broadly crenated; flowers somewhat umbellate, pedunculous; peduncles 1-flowered, weak. 2. H. Native of Auregniæ. S. penduliflora, Bast. in journ. bot. 1814. p. 17. and D. C. fl. fr. 5. p. 519.

Var. η, sessiliflora (Ser. in D. C. prod. 4. p. 36.) stems quite simple; leaves reniform, crenated; flowers sessile, sub capsules. 2. H. In dry places.

Var. ζ, bulbillaris (Ser. l. c.) stem more or less branched; flowers numerous, sessile, abortive, transformed into little bulbs, which rise from the axils of the leaves. 2. H. Native of Sicily. S. granulata gemmifera, Haw. enum. sax. p. 23.

Granular-rooted Saxifrage. Fl. May. Brit. Pl. 54 to 1 ft.

33 S. odontophylla (Wall. cat. no. 454.) leaves reniform, bluntly lobed, rather pubescent; stem few-leafed, many-flowered, and as well as the pedicels and calyxes clothed with glandular pubescence; petals obovate, unguiculate; stigma nearly sessile, 5-lobed. 2. H. Native of Siberia, Alps, and of the Alps of Caucasus, among rather humid shaded rocks, or among stones; also of Labrador and Newfound-land. Sternb. sax. p. 23. t. 25. f. 1. Gmel. sib. 4. p. 162. no. 74. S. granulata β, Steven de sax. cauc. in mem. mosq. 4. p. 77. no. 8. S. granidiflora, Sternb. sax. t. 12. f. 4. ? S. cymbalophora, Bibb. fl. taur. 5. p. 292. no. 780. Lobes of calyx ovatelinear. Petals white. Stem beset with viscid hairs.


37 S. bracteata (D. Don, in Linn. trans. 15. p. 367.) radical as well as cauleine leaves on long petioles, reniform, and deeply lobed; flowers in crowded corymbs, bracteate; stem leafy, glabrous, and beset, clothed with viscid villa. 2. H. Native of Eastern Siberia. Flowers white, like those of S. cernua, but a little larger; calycine segments broadly ovate, obtuse. Petals obovate, a little longer than the calycine segments.

BRACTEATED-FLOWERED SAXIFRAGE. Pl. 54 to 1 ft.

38 S. rivulatis (Lin. spec. p. 577.) stem short, without leaves, on long petioles, glabrous; flowers usually by three, sessile, bracteate. O. H. Native of the higher Alps of Europe, as in Lapland, Norway, as well as of Siberia. It is also found in North America, as in Labrador, Arctic Sea shore and Islands, Kotzebue's Sound, and in elevated places among the Rocky Mountains. In Scotland about Alpine rivulets, and in wet fissures of rocks, as on Ben Nevis, near the lake in the ascent: also on Ben Lawers, and at Loch Rannoch. Fl. lin. lapp. no. 174. t. 2. f. 7. Fl. dan. t. 118. Smith, engl. bot. 2275. Sternb. sax. p. 19. t. 13. f. 3. Plant annual. Stem weak, ascending, few-leaved, furnished with viscid hairs above. Leaves 5-6-lobed; lobes obtuse. Flowers small, white, bracteate. Calycine segments ovate, very blunt, obtuse, conniving. Petals ovate, obtuse, triple nerved.


39 S. hypberborea (R. Br. in Parry's first voy. append. p. 274.) stem woolly, 2-flowered; leaves glabrous; calyxes ovate, to long petioles; petals 1-nerved. 2. H. Native of Ireland, and Arctic America. S. rivulatis β, Hook. fl. bor. amer. 1. p. 246. Flowers white. Perhaps only a variety of S. rivulatis.

Northern Saxifrage. Pl. 2 inches.

40 S. nu'tana (D. Don, in Linn. trans. 13. p. 268.) stem rather pubescent, decumbent at the base, jointed in the middle, and furnished with one leaf at the joint: raceme drooping, few-flowered: leaves simple, on long petioles, reniform, deeply and coarsely toothed, with a few scattered stiff hairs on both sur-
SAXIFRAGACEÆ. I. SAXIFRAGA.

1.) Saxifraga. 2.) H. Native of the west coast of North America, in the Island of Unalaska. Flowers white, size of those of S. bulbifera; calyce segments lanceolate, acute; petals obotate, with branched flexuous nerves. Pedicels and calyces beset with crowded glandular hairs.

**Nodding-flowered Saxifrage.** Pl. ½ foot. 41 S. ranunculifolia (Hook. fl. bor. amer. 1. p. 246. t. 83.) plant clothed with glandular pubescence, slender; lower leaves on very long petioles, reniform, 3-parted; segments broadly cuneate, deeply lobed; calyce leaves few; flowers corymbose, pentandrous; petals obotate, twice the length of the calyx; calyx beset with glandular hairs: segments acute. 2.) H. Native of North America; common on the high grounds around the Kettle Falls of the Columbia, and on the Rocky Mountains. Flowers white, size of those of S. stellarius. Petals obotate, ungluticate.

**Crow-foot-leaved Saxifrage.** Pl. ¾ foot. 42 S. exilis (Steph. in Sternb. sax. suppl. p. 8. t. 3. f. 1.) root tufted; radicles capillary; radical leaves palmately 5-lobed, petioles long, cauline ones linear, entire; petals obotate-oblong, much longer than the 5-cleft calyx. 2.) H. Native of Siberia, and probably of Kotzebue's Sound. Stem weak, 2-flowered.

**Slender Saxifrage.** Pl. ½ foot. 43 S. Laurentiana (Ser. in D. C. prod. 4. p. 35.) plant with many stems; radical leaves on long petioles, reniform, 5-7-lobed, crenated, reticulately veined lengthwise, glabrous; stems and peduncles ornamented with long intricate hairs; flowers few, somewhat capitate, involucrated by 3-4 crenately lobed bracteas; lobes of calyx ovate, obtuse, shorter than the petals; petals 3-nerved towards the middle. 2.) H. Native of the Island of St. Laurence in Behring's Straits. S. Channissii, Sternb. inded. but not S. Chamissoi, Sternb. Flowers white.

**St. Laurent Saxifrage.** Pl. ½ foot. 44 S. Stephaniiana (Sternb. suppl. sax. 1. p. 8. t. 6. f. 2.) plant tufted; stem usually 4-flowered, pilose; radical, as well as the cauline leaves, petiole, and palmately many-lobed, pilose; bracteas nearly linear; sepals linear, obtuse; petals obotate, many nerved. 2.) H. Native of Siberia, Steph. S. palmata, Steph. in litt. ex Sternb. l.c. Flowers white.

**Stephan's Saxifrage.** Pl. ½ foot. 45 S. altiflora (Haw. enum. sax. p. 24.) leaves deeply and palmately 3-parted; segments profoundly 3-5-cleft; peduncles subascemose, divaricate. 2.) H. Native country unknown. S. adscendens, Haw. exclusive of all the synonyms. Very rarely allied to S. granulata, but truly distinct, and differs in the fissures of the leaves, and in the more decumbent stems.

Flowers white.

**Deep-cleft-leaved Saxifrage.** Fl. May, June. Pl. ½ foot.

[Sect. IV. Hirculus (a name given by the ancients to a kind of spikenard or valerian, which has nothing to do with the present plant). Tausch, hort. canel. fasc. 1. Haw. enum. sax. p. 40. Kingstonia, Gray, brit. fl. 2. p. 531. Calyx deeply 5-cleft (f. 42. a.), not adhering to the ovarium. Petals sessile (f. 42. b.) in most of the species. Stamens inserted in the throat of the calyx (f. 42. c.); filaments subulate. Styles straight; stigmas cartilaginous, flatissimus, capsuleless. Carpel free from the calyx (f. 42. d. a.). Seeds oblong, wrinkled from dots.—Humble herbaceous evergreen plants. Stems leafy, stoloniferous. Leaves alternate, narrow, petiole, entire, but usually ciliated with stiff hairs, marcescent. Flowers white or yellow.]

46 S. hirculus (Lin. spec. 376.) leaves lanceolate, obtuse, not ciliated; calyce segments lanceolate, obtuse, usually ciliated; petals obotate, many nerved; styles almost wanting; stigmas spatulate, when young deflexed, afterwards divaricate. 2.) H. Native of Sweden, Switzerland, Lapland, Siberia, Caucasus, Germany, and in England, in boggy places. It is also found in North America, from the Saskatchewan to the Arctic sea shore and Islands, where it seems most abundant; Behring's Straits, Cape of Good Hope, Kotzebue's Sound, &c. 2.) H. Native of Siberia, in humid subalpine places at the rivers Ursul and Tschuha. S. Hirculus, Ledeb. fl. alt. 2. p. 121.

**Hirculus Saxifrage.** Fl. Aug. England. Pl.½ to 1 foot. 47 S. myosotifolia (D. Don, in Lin. trans. 13. p. 373.) plant tufted, without any stolons or flagellae; leaves ovate, acute, mucous, bristly; pedicels elongated, and are as well as the calyces beset with glandular pili; stem nearly naked, usually 3-flowered; calyce segments broadly ovate, acute; petals roundish, ungluticate, 5-nerved. 2.) H. Native of Siberia. Sucreli very short, erect, crowded. Stem 2-3-flowered, beset with stiff hairs. Leaves ciliated with hairs on the margins, and on both surfaces. Flowers cream-coloured; filaments compressed, yellowish. Styles short, thick.

**Mouse-ear-leaved Saxifrage.** Pl. 2 inches. 48 S. flagellaris (Sternb. sax. p. 25. t. 6.) stolons or flagellae filiform; stems erect, simple, 1-5-flowered, and are as well as the calyces clothed with glandular pubescence; radical leaves as well as lower cauline ones obvately spatulate: superior ones rather villous; petals permanent, longer than the capsule, which is semi-superior. 2.) H. Native of the Alps of Caucasus; and of north-west America, at Cape Newhun, in Melville Island, Baffin's Bay, Behring's Straits, Arctic Islands, summits of the Rocky Mountains, Kotzebue's Sound, &c. Hook. fl. bor. amer. 1. p. 253. t. 77. S. setigera, Pursh. fl. amer. sept. 1. p. 312. S. âspera, Bibb. fl. taur. 1. p. 314. exclusive of all the synonyms. Hirculus flagellaris, Haw. enum. sax. p. 41. Stem leafy, 1-5-flowered. Radical leaves crowded, all ciliated on the margins, with cartilaginous spinales: calyx and pedicels clothed with glutinous down. Flowers yellow, size of those of S. Hirculus (f. 42.).


**Var. b.** stem 1-flowered; ovarium adhering to the calyx at e e 2.

Flagellae-bearing Saxifrage. Fl. May, July. Cl. 1819.

Pl. 1/2 foot.

49 S. Brunoniana (Wall. cat. no. 441.) tufted; stems 1-4 flowered, bearing a few glandular hairs; stolons or surculi capillary, without any tuft of leaves at the points, rising from the axis of the leaves, as in S. flagellaris; leaves linear, with cartilaginous ciliately serrate edges, and terminated by a stiff mucrone; cauline leaves fewer, shorter; sepals ovate, very blunt; petals obovate-oblong, 5-nerved, yellow, much longer than the calyx; stigmas small. 2. F. Native of Nipaul, in Emodi, and Kamaon. Flowers yellow. Pedicles slender, elongated.

Brown's Saxifrage. Pl. 1/4 to 1/2 foot.

50 S. Brachyphoda (D. Don, in Lin. trans. 13. p. 378.) plant tufted; stems dense, simple, gemmiferous; leaves dense, linear, spreading, ciliated with bristles, 1-nerved, full of pellucid dots, of a different colour beneath; flowers solitary, terminal; pedicels clothed with unequal glandular hairs; sepals lanceolate, mucronate, ciliately serrulate, 3-nerved; petals obovate, 5-nerved, bluish; stigmas thick, diverging. 2. F. Native of Nipaul, in Emodi, Gosaingathan, and Kamaon. S. glandulosa, Wall. cat. no. 442. Pedicels nearly the length of the flowers. Leaves glaucous beneath, quite glabrous, very numerous, with revolute edges. Buds echinate. Flowers yellow.

Short-peduncled Saxifrage. Pl. 1/4 foot.

51 S. Fimbriata (Wall. cat. no. 443.) stem simple, gemmiferous, very leafy, bearing scattered glandular hairs; leaves lanceolate, very acute, of a different colour beneath, ciliated with stiff bristles, marked above with fine parallel wrinkled lines: nerves 5-7, nearly parallel, reticulated and pellucid; flowers small, sub-racemose, but often solitary; pedicels short, rather hispid; sepals lanceolate, rather cartilaginously serrulate, mucronate. 2. F. Native of Nipaul, at Gosaingathan and Kamaon.

Fringed-leaved Saxifrage. Pl. 3/4 foot.


53 S. bronchialis (Lin. spec. 572.) sputaneous; leaves crowded, linear-subulate, triquetrous, mucronate, ciliated with stiff spinules; calycine segments ovate, many flowered. 2. H. Native of Siberia; north-west coast of America, Beling's Straits, Kotzebue's Sound, height of land at the portage of the Columbia river, on the west side of the Rocky Mountains. Ciliaria bronchialis, Haw. rev. sax. 43.—Gmel. sib. 4. p. 164. t. 63. f. 2. Surculi numerous, erect, branched. Panicle terminal, few or many flowered. Flowers small, cream-coloured; petals obovate-oblong, 3-nerved, with numerous minute copper-coloured dots; anthers copper-coloured. This is very nearly allied to S. tricuspidata, but differs in the want of the lateral points to the leaves.

Var. β, Lenænis (D. Don, in Lin. trans. 13. p. 377.) surculi shorter; leaves longer, spreading; panicle larger, spreading, fastigate. 2. H. Native of Siberia, at the river Lena.

Bromchial Saxifrage. Fl. May, June. Cl. 1819. Pl. 1/4 ft.

54 S. Tenuula (Wulf. in Jacq. coll. 3. p. 144. t. 17.) plant tufted; leaves crowded, linear-subulate, flat, pungent, ciliated; stems slender, few-leaved, few-flowered; calycine segments linear-lanceolate; petals obovate. 2. H. Native of Carinthia, on the Alps. S. nitida, Wulf. in Jacq. coll. 3. t. 10. f. 4. Surculi numerous. Stems numerous, erect. Leaves imbricated, keeled below, glabrous. Peduncles by threes, long, capillary, 1-flowered, beset with glandular hairs, as well as the calyces. Flowers white, spotless; anthers yellow.


55 S. Filicaulis (Wall. cat. no. 445.) stems filiform, much branched, beset with capitate hairs; branches filiform, 1-flowered; leaves linear, sessile, full of pellucid dots, nerveless, ciliated by capitate bristles; sepals lanceolate-oblong, bluish, petals obovate, obtuse, 3-nerved; styles much elongated; stigmas thickish, arched. 2. F. Native of Nipaul. Branchea dense. Flowers golden yellow. Perhaps distinct from S. brachypoda.

Thread-stemmed Saxifrage. Pl. 1/4 foot.

56 S. Krushianæa (Fisch. in litt. ex D. C. prod. 4. p. 46.) plant tufted; leaves dense, imbricate, ovate, ciliated, nerveless; flowers by threes; sepals lanceolate-obtuse; petals elliptic, much longer than the calyx, with pinnate nerves; capsule somewhat hemispherical; styles arched. 2. H. Native of Siberia, near Ijiga, where it was found by Krush, according to Fischer. This species is very distinct from S. áspera, in the leaves being oval, not linear-ovate, in being nerveless, not 3-nerved, and in the petals being feather-nerved, &c. S. glandulosa, Willd. herb. ex Stev. in litt. 1821.

Krush's Saxifrage. Pl. 1/4 foot.

57 S. STELLERIANA (Merk ex Fisch. in litt. ex D. C. prod. 4. p. 46.) plant tufted; leaves of the surculi or sterile branches small, numerous, oblong, ciliated and mucronate, hardly petiolate: cauline ones distant; uppermost ones acute, not ciliated; stems branched, 5-7-flowered; flowers distantly ciliated; pedicels and calyces glabrous; calycine lobes oblong, acute; petals oblong, 3-nerved, exceeding the calyx; ovarium conical; styles hardly diverging, length of the petals. 2. H. Native of Eastern Siberia.

Steller's Saxifrage. Pl. 1/4 foot.

58 S. Multiflora (Ledebo. dec. pl. in mem. acad. des. science. peterb. 5. p. 532. no. 18. fl. ross. alt. ill. t. 332.) leaves lanceolate-linear, scattered, cuspidate, remotely and saccately ciliated, and covered with cobwebbed villi; corymb terminal, many flowered; calycine segments ovate, obtuse; petals elliptic, bluish, 1-nerved, more than thrice the length of the calyx; stamens exceeding the corolla. 2. H. Native of Altaia. It differs from S. áspera and S. bronchialis, and all the nearly
alloyed species, in the many flowering corollas, in the surfaces of the leaves and margins, &c.

Many-flowered Saxifrage. Pl. ½ foot.

59 S. a'spéra (Lin. spec. 575.) leaves flat, lanceolate-linear, scattered, pungent, remotely ciliate with spinules, glabrous; stem branched, few-flowered; calyce segments ovate, cuspitate; petals broadly elliptic, rounded at the apex, 3-5-nerved, twice the length of the calyx, and a little longer than the stamens. ½. H. Native of Switzerland and the Pyrenees; also of Siberia. Jacq. auct. 5. appendix. 31. Sternb. sax. 29. t. 8. f. 1.—Scheuch. alp. 142. t. 21. f. 2.—Col. echr. 2. p. 66. t. 67. f. 1-2. S. a'spéra var. a elongata, Gaudin, fl. helv. 3. p. 108. S. intermédia, Heg. fl. helv. 1. p. 258. Ciliária a'spéra, Haw. enum. sax. p. 42.—Moris. hist. 3. p. 479. sect. 12. t. 10. f. 25. Plant grey; calyce elongated, decumbent, villous. Stem branched, reddish, brittle, hispid from short hairs. Pedicules longish, stiff, 1-flowered, furnished with glandular-hairy, as well as on the calyces. Nerves of petaliferous branches. Flowers large, cream-coloured.


61 S. cheliceroides (D. Don, in Lin. trans. 13. p. 382.) tufts of leaves on the tops of the surculi globose; leaves densely imbricated, spatulate, mucronate, ciliated; calyce segments semi-ovate, obtuse; petals obovate, 3-nerved; stems filiform, many-flowered. ½. H. Native of Kamschatka. S. bryoides, Pall. miss. Plant tufted. Stems ascending, 4-5-flowered, with a few small adpressed leaves. Flowers corolline, cream-coloured, much smaller than those of S. bryoides. Pedicels 1-flowered, furnished with a few scattered glands, as well as the calyces.

Chekereria-like Saxifrage. Pl. ½ foot.

62 S. hispidula (D. Don, in Lin. trans. 13. p. 380.) plant tufted, and hispid; stems filiform; leaves ovate, mucronate, bristly, with one tooth on each side; flower terminal, nearly sessile; calyx bristly; petals nearly orbicular, triple-nerved; nerves simple, straight. ½. H. Native of Nipaul, on the Alps. Flowers yellow, on short pedicels, drooping in the bud. Styles incurved at the apex.

Rather-hispid Saxifrage. Pl. ½ foot.

63 S. evolutoides (Wall. cat. no. 447.) stems very simple, 1-flowered, ornamented by long capitade spreading leaves; hairs ovate-lanceolate, acute, furnished with 1 or 2 teeth, nerveless, sessile, covered with striigorose pilus; sepals ovate, mucronate by a bristle, and bearing strigose hairs; petals roundish-obovate, opaque, hardly longer than the calyx. ½. H. Native of Nipaul, at Gosainghthan and Kamaon. Perhaps distant from S. hispidula. Leaves small, superior ones broader. Pedicels filiform, nearly twice the length of the flowers. Flowers yellow. Evolutoides-like Saxifrage. Pl. ½ foot.

64 S. lęk's (Bieb. fl. taur. 1. p. 314. suppl. 291. but not of Haw.) stems decline, few-flowered; calyce oblong, acutish, crowded, naked, unarmed, glaucous; flowers termina, sessile; petals obovate-oblong, longer than the calyx. ½. H. Native of the Alps of Caucasus. Flowers yellow. Very nearly allied to S. aizoides, but differs in the flowers being smaller and sessile.

Smooth Saxifrage. Pl. ½ to ¾ foot.

65 S. spinulosa (Adams, in mem. soc. mose. 5. ex Spreng. neue. entd. 5. p. 225.) stem nearly naked, many-flowered; leaves imbricate, undivided, erect, linear-lanceolate, flat, ciliated, spiny. ½. H. Native country unknown.

Spinulose Saxifrage. Pl. ½ foot.

66 S. Chami'ssò (Stern. rev. sax. suppl. 1. p. 12. t. 10. f. 1.) plant tufted; stem generally 4-flowered; lower leaves cuneated, cuspitate trifid, ciliated; calyce leaves linear-lanceolate, quite entire; sepals small, obtuse; petals oblong, minute, hardly longer than the sepals. ½. H. Native of the Island of Unalaschka; and the subalpine regions of Mount Hood. S. tricuspidata β, Hook. fl. bor. amer. 1. p. 254. Flowers minute, white.

Chamisson's Saxifrage. Pl. ½ to ¾ foot.

67 S. tricuspidata (Retz. prod. fl. scand. ed. 2. no. 552.) stems straight, thick; lower leaves dense, coriaceous, cuneiform, tricuspidate, with the margins finely ciliated; flowers somewhat corolline; peduncles short and stiff; calyce segments ovate; petals oblong or lanceolate, 3 times longer than the calyx; capsule conical, ending in diverging styles; stigmas subcapitate. ½. H. Native of Greenland, and of North America; from Lake Winepeg in lat. 50° to the Arctic sea and islands; and from Hudson's Bay to the Rocky Mountains; Kotzebeue's Sound, Newfoundland, &c. Rotb. in act. hafn. 10. p. 446. t. 6. Fl. dan. t. 976. Leptisca tricuspidata, Haw. enum. sax. p. 40. Plant densely tufted, glabrous; calyce very short. Stems ascending, many flowered. Superior leaves undivided. Pedicels elongated, glandular, as well as the calyces. Flowers yellow, size of those of S. Hirculus. Petals spotted, triple-nerved; nerves simple.


Var. a, Steeveníána (Ser. in D. C. prod. 4. p. 23.) flowers crowded into an ovoid spike.

Var. β, Adamsíána (Ser. 1. c.) flowers disposed into a capitate corrymb, emululating that of Lychnis alpina, Sternb. sax. p. 31. t. 10. a middle figure.

Juniper-like Saxifrage. Pl. ½ to ¾ foot.

Sect. V. Porphy'reon (from πορφυρίς, porphyros, purple; colour of flowers). Tausch, hort. canali. fasc. 1. D. C. prod. 4. p. 17.—Antiphylle species, Haw. enum. sax. p. 43.—Calliçymum, Gaudin, fl. helv. 3. p. 94. Calyx 5-cleft, with a long, erect, permanent tube (f. 43. c.), joined to the ovarium or free from it. Petals sessile, perigynous. Stamens perigynous (f. 48. b. c.); filaments flat, gradually attenuated. Stigmas
spreading, flat, spatulate, bearded with short down (f. 43. c.). Capsule covered by the calyx. Seeds angular, smooth or wrinkled.—Tufted evergreen herbs, with small opposite coriaceous or thick permanent leaves. Flowers red or violaceous. Elegant little plants.

69 S. oppositifolia (Lin. spec. 575.) stems 1-flowered; leaves imbricated, ovate or obovate, flat, obtuse, ciliate; segments of the calyx broadly ovate, obtuse; petals obovate, 5-nerved; gynaeceum shorter than the corolla. 2. H. Native of Lapland, Switzerland, Spitzbergen, Pyrenees, Scotland, and England, on alpine rocks and precipices; also of North America, as in Newfoundland and Labrador; Antecosti, in the Bay of St. Lawrence; Rocky Mountains, near the highest summits, between lat. 52° and 56°; Arctic sea shore and islands; Bay of Eschscholtz, &c. In England on the west side of Ingleborough, Yorkshire; on Snowden plentifully; and on Ben Lomond and other Scottish mountains. Lin. fl. lapp. p. 179. t. 2. f. 1. Fl. dan. t. 34. All. pedem. 1529. t. 21. f. 3. Lapeyr. pyr. sax. p. 36. t. 16. Smith, ingl. bot. t. 9. Hohenwart in Reiner, itin. 1. p. 132. t. 3. S. coriaceae, Pers. ench. 1. p. 488. Antiphylia coriacea, Haw. enum. sax. p. 43. Plant forming a broad flat tuft; surculi short, prominent, reddish. Leaves usually perforated at the apex by 1 or 2 pores. Flowers large, of a beautiful lilac red.

Var. b, distans (Ser. in D. C. prod. 4. p. 18.) leaves of the sterile branches loose and distant. 2. H. Native of the Alps of Switzerland and the Pyrenees.


Two-flowered Saxifrage. Fl. April, June. Clt. 1820. Pl. 1 to 2 inches.

72 S. Esciscro'tzii (Sternb. rev. sax. suppl. p. 9. t. 10. f. 2.) plant small, densely tufted; leaves closely imbricated, ob-
Var. ë, submána; flabelliform; stem single. Lapeyr. l. c.


Var. ð, neglectá (Ser. in D. C. l. c.) tufts of leaves globeose; raceme simple, few-flowered, somewhat cylindrical; petals rose-coloured, dotted with purple. 2. H. Native of Italy.—Sedum Barrel. icon. 1310. ex Tenore. S. neglectá, Tenore, append. prod. fl. neap. p. 19. S. Aizóon and S. érectá, Tenore, fl. neap. prod. p. 25. There is a variety of this with a sessile corymb of flowers in the tufts of leaves; peduncles and calyx are quite glabrous, and the stem 1-flowered.


76 S. intácta (Willd. hort. berol. 2. p. 75. t. 75.) leaves linear, acute, straight, sharply and silvery serrated; calyx and pedicels sparingly glandular: with obtuse segments; petals oval.


Untouched Saxifrage. Fl. May, July. Pl. ½ to 1 foot.

77 S. australís (Morie. fl. ven. 1. p. 431.) plant quite glabrous; stem angular; leaves of the tufts oblong-spataulate, ciliate at the base, with cuneate margins; cauleine leaves oblong, somewhat denticulated, acutish; panicle branched, many-flowered; petals ovate, obtuse, much longer than the calyx; styles straight, ascending. 2. H. Native of Virgin Mount, near Naples. S. Aizóon, Guss, in litt. S. pyramidalís, Tenore, fl. neap. prod. 1. p. 25. Petals yellow, as seen in a dried state. Flowers very like those of S. Cotyledon, and the leaves like those of S. Aizóon.

Southern Saxifrage. Pl. 1 foot.

78 S. cartiláginoa (Willd. in litt. ex Sternb. sax. p. 5. t. 3. c.) leaves of the tufts and stems lanceolate, acute, cartilaginously serrated; flowers panicled, somewhat corymbose; lobes of calyx ovate, about equal in length to the campanulate tube; calyx and peduncles beset with glandular pili; petals obvate, contiguous at the base, spotless; styles diverging.


Cartilaginous-edged-leaved Saxifrage. Pl. 1 foot.

79 S. margináta (Sternb. rév. sax. suppl. 1. p. 1. t. 1. f. 1.) radical leaves lingulate, ciliated at the base, having pitted dots within; flowers somewhat corymbose; petals ovate, twice the size of the calyx. 2. H. Native of Naples. S. Cotyledon, Tenore, cat. hort. neap. append. alter. p. 60. and S. Aizóon, longiófíia, and récta, Tenore, fl. neap. prod. p. 25. ex Moretti, tent. sax. p. 35.

Marginate-leaved Saxifrage. Pl. 1 foot.

80 S. floribúnda (Moretti, tent. sax. p. 9.) radical leaves tufted, lanceolate, mucronate, ciliated: cauleine ones linear; stem fuscous, bearing flowers from the base to the apex; flowers disposed in a racemose thyrse, white, or cream-coloured. 2. H. Native of the mountains about Nice.

Bundle-flowered Saxifrage. Pl. 1 foot.


Flowers paniced, copper-coloured, marked with deeper-coloured dots. Peduncles and calyxes densely clothed with rusty clanny down (f. 44.).

Var. ß, macropétala (Ser. in D. C. prod. 4. p. 20.) petals ovato-oblong, spotted. 2. H. Native of Switzerland. Hall. hist. no. 979. t. 16. f. 2.


§ 2. Leaves lingulately-spatulate, apiculated, with quite entire cartilaginous margins.

radical ones rosulate, glabrous; cauline leaves cuneate, clothed with glandular hairs. Pedicels 1-flowered, and are as well as the calyces clothed with viscid hairs. Petals obovate, dark purple. Genital inclosed in the calyx.

**Middle Saxifrage.** Pl. 3 to 4 foot.

83. **Lapeyrensia** (Don, in Lin. trans. 13. p. 397.)

radical leaves aggregate, articulate, quite entire, with cartilaginous margins; flowers paneled; petals obovate, quite entire, connivent, longer than the calyx. Ζ-H. Native of the Pyrenees, on calcareous rocks. Lapeyrensis, nap. 29. t. 14. S. ambigua, D. C. Peduncles and calyces clothed with purple down. Very like S. media, but differs in the flowers being paneled, and citron-colored. Said to be a hybrid between S. media and S. aretioides.

**La Peyrouse's Saxifrage.** Pl. ½ to 3 foot.

84. S. aretioides (Lapeyrensis, nap. p. 28. t. 13.) leaves aggregate, linear-lingulate, upright, mucronate, keeled, glaucous, with cartilaginous margins; stem clothed with clammy tomentum; petals linear-spatulate, crenulated at the apex. Ζ-H. Native of the Pyrenees, on calcareous rocks. Lapeyrensis aretioides, Haw. enum. nap. 14. Plant densely tufted. Leaves imbricate, ciliately toothed at the base, with a few perforated dots near the margin. Flowers by threes, golden yellow. Pedicels and calyces clothed with clammy down. Calyces segments ovate, acute. Very like the two preceding species, but the plant is much smaller.

**Arethia-like Saxifrage.** Pl. May, Clt. 1826. Pl. ½ ft.

§ 3. **Leaves triquetrous, obtuse.**

85. S. diapensioides (Bellardi, in act. acad. taur. 5. p. 287.) stems, peduncles, and calyces glandular; leaves linear, erect, keeled, aggregate, imbricated, ciliate, glaucous; stem many-leaved, few-flowered; calyces segments elliptic-oblong. Ζ-H. Native of the Alps of Piedmont and Switzerland. Lapeyrensis append. fl. pedem. p. 21. t. 3. Sternb. nap. 35. t. 9. Chondrosore diapensioides, Haw. enum. nap. 13. S. caesia β, Lam. dict. 4. p. 676. Plant densely tufted. Leaves with cartilaginous margins, ciliated at the base, and with 1 or 2 perforated dots at the apex, which is obtuse. Flowers 3-5 or 5, campanulate, white, disposed in a terminal head. Petals narrow at the base, with an orbicular, 5-nerved limb.


86. S. squarrosa (Sieb. in fl. 1821. p. 99. and fl. austr. excis. no. 133.) stem pubescent below, usually 3-flowered; leaves linear-elliptic, rather retuse, stiff, squarrosely imbricated, permanent, when young powdery; branches diffuse, ciliate; peduncles and stems glabrous. Ζ-H. Native of the Alps of Tyrol. Flowers white, larger than those of S. caesia. Lobes of calyx broader than in S. caesia and S. diapensioides.

**Squarrosa-leaved Saxifrage.** Pl. ½ foot.

87. S. ramelosa (Wall. cat. no. 446.) plant densely tufted; stems 1-flowered, very short; leaves of the barren stems or sparsely acute and flattish at the apex, lined with rough dots; the upper surface of the leaves have a regular marginal, double line of dots; margins of leaves thin and cartilaginous; lobes of calyx acute; styles nearly parallel, longer than the calyx; stigma thick, capitate. Ζ-F. Native of Nipaul, at Bhuddrith. Very nearly allied to C. caesia, but perfectly distinct.

**Branched Saxifrage.** Pl. 1 inch.


**Var. β, pätens** (Ser. in D. C. fl. fr. 5. p. 517.) peduncles and calyces very clamy, and beset with glandular hairs; leaves of the surculi and stems flat at the base, but more or less triquetrous at the apex, with the upper surface marked with dots, which are disposed without order. Ζ-H. Native of the Alps of Lyons, on the hill called Lacroix, near Abries and Pignerol; and on Mount Cenis. S. rupesistris, Thomas, exsic. S. caesia, var. Wildl. spec. 2. p. 642. in a note. S. caesia γ, Moretti, tent. sax. p. 12. Flowers white, corymbose; peduncles short. Leaves dense, short.


§ 4. **Leaves triquetrous, mucronately pungent.**

92. S. nitida (Schreb. in litt. ex Sternb. rev. sax. p. 32. t. 10.
floral leaf; 2. H. Native of the Alps of Carinthia, Carniola, and of the Carpathian mountains; and also about Prague. Chondrosea tenella, Haw. enum. sax. p. 15. Plant tufted; surculi decumbent. Leaves crowded, imbricate, deep green, keeled beneath. Flowers panicled, white. Calyx beset with glandular hairs.


**Sand-wort-like Saxifrage.** Pl. 1½ foot.

95 S. Busseriana' (Lin. spec. 572.) stem beset with glandular hairs; leaves aggregate, subulate, pungent, smooth, glaucous; stems usually 1-flowered; segments of the calyx ovate; petals roundish, with curled edges, and branched nerves. 2. H. Native of the Alps of Carinthia and Carniola; and in Upper Italy, on the mountains. Wulf. in Jacq. misc. 1. p. 152. t. 5. f. 2. Stem. sax. p. 33. t. 10. f. 1-2, and in Sturm, deutschl. fass. 33. no. 10. f. a. b. c. d.—Seguier, pl. rar. 3. p. 201. t. 5. f. 2. Chondrosea Busseriana, Haw. enum. sax. 15. Plant densely tufted. Surculi short, erect. Leaves rosalate, trilobed.

**Var. β, subbiflora** (Sternb. 1. c. t. 10. β.) stems usually 2-flowered.


**Vandelli's Saxifrage.** Pl. 1½ foot.


**Var. β, capitellata** (Ser. in D. C. prod. 4. p. 39.) flowers few, somewhat capitulate; leaves nearly entire; scape length of leaves. 2. H. Native of the Carpathian mountains, and the Island of St. Lawrence. Micranthes hirta, Haw. enum. sax. p. 45. S. uliginosa β, attra, Fisch. in litt.


98 S. Pennsylvanica (Lin. spec. 571.) leaves lanceolate, without petioles, sinuate, denticulate, very hairy on both surfaces; scape branched; flowers disposed in coriaceous heads, the whole forming a branched panicle; calycine segments ovate, acutish; petals linear, longer than the calyx. 2. H. Native of North America, in the states of New York and Virginia, in humid meadows; also of Canada, but rare. S. Caroliniana and S. Marylandica, Hortul. S. palustris, Hort. engl. Link. enum. 1. p. 412. Micranthes Pennsylvanica, Haw. enum. sax. p. 45.—Dill. elth. 337. t. 253. f. 328. Leaves attenuated at the base. Scape beset with viscid hairs, and the pedicels with calyces and glandular ones. Flowers of a squill-like white colour.

**Var. β, corymbifera** (Michx. fl. bor. amer. 1. p. 269.) panicle long; flowers coriaceous, distant.


99 S. semipubescent (Sweet, hort. suburb. p. 97.) leaves without petioles, oval-oblong, obtuse, quite glabrous, denticulate; scape branched; flowers disposed in corymbose heads, the whole forming a panicle; calycine segments ovate, acutish; petals oval, about equal in length to the calyx. 2. H. Native of North America. Micranthes semipubescent, Haw. syn. succ. append. 46. S. Marylandica, Hortul. Micranthes hirta, Haw. enum. sax. p. 46. Stem beset with glandular hairs, as well as the calyces and pedicels. Flowers small, yellowish.

**Semi-pubescent Saxifrage.** Fl. May, June. Clt. 1800. Pl. 1 to 1¾ foot.


101 S. versalis (Wildl. hort. berol. t. 43.) leaves oblong or

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... leaves bracteas flowers calycine. 2. H. Native of Canada, and to the mountains of the Columbia, and from Fort Vancouver to the Kettle Falls. S. Virginianæsis, Torrey, fl. unit. stat. 1. p. 444. Flowers small, white, forming an imperfect coryst or thyrse. This species differs from S. Virginianæsis in the disposition of the flowers.

Var. a; flowers loosely panicked; scape longer. 2. H.

Var. b; flowers compact, rather thyroid. 2. H. Native on the banks of the Saskatchewan. General habit of S. niveïs.


Spring Saxifrage. Fl. May, June. Ch. ? Pl. ½ foot.

102 S. reflêxa (Hook, fl. bor. amer. 1. p. 249. t. 85) plant clothed with hoary down; leaves ovate, rather cariosceous, opaque, deeply serrated, tapering into the petiole; scape naked; panicle quite glabrous, compact, corymbose; petals obovate, bimaculate; calyx reflexed. 2. H. Native of North America, on the shores of the Arctic Sea, between the Mackenzie and Coppermine rivers. Together with the harsh and rigid foliage of S. niveïs, the present species has a panicle more resembling that of S. ver-violis; but the petals have 2 orange spots, similar to those of S. leucaenthemïs. The pubescence gives a whitish or hoary appearance to the whole plant, the panicle excepted; but as the pubescence is very variable in all the species of the present section, it cannot be depended upon. (f. 45.)

Reflected-calyxed Saxifrage. Pl. ½ foot.

103 S. integrifolia (Hook. fl. bor. amer. 1. p. 249. t. 86) the whole plant clothed with ammny pubescence; leaves radical, ovate, rather membranous, very blunt, quite entire, or sinuately crenated, reticulately veined; scape elongated, naked, panicled, at the apex; panicle loose, broad or contracted, bracteate; petals obovate, twice the length of the calyx, which is at first spreading, but at length reflexed; stamens short; styles diverging. 2. H. Native of the north-west coast of America, near the mouth of the Columbia. The leaves are short, in proportion to the height of the plant.

Entire-leaved Saxifrage. Pl. ½ to 1 foot.

104 S. niveïs (Lin. spec. p. 573) leaves ovate or obovate, cariosceous, undulately crenated, tapering into the broad petiole; scape naked, simple; flowers in crowded heads; calyce segments erect, obtuse; petals obovate, permanent, hardly one half longer than the calyx. 2. H. Native of Scotland, north of England, Lapland, on the loftiest mountains; in North America, on the Arctic Sea-shore and islands, abundant; Labrador, Canada, Spitzbergen, and the Rocky Mountains. In Britain, upon Snowden, and on the summits of several hills about Snowden; on Ben Lawers, Clova, and other Highland mountains of Scotland; and near the top of Ben Lomond. Light: fl. scot. with a figure. Smith, engl. bot. t. 440. Sterm. in Stürmer, nach Drachl. fl. with a figure. S. congesta, Haw. Dermæsa niveïs, Haw. syn. sax. p. 9.—Lin. fl. succ. p. 176. t. 2. f. 5, 6.—Ray. angl. 3. p. 354. t. 16. f. 1.—Oed. fl. dan. t. 28. Leaves glabrous above, villous beneath. Scape clothed with viscid hairs. Flowers disposed in crowded bracteate heads; bracteas ciliated. Pedicels and calyces clothed with viscid down. Petals white, but becoming reddish as they fade, triple-nerved; nerves simple.

The American specimens of this plant are very variable in habit, and in many instances so closely approach the varieties of some of the preceding species, as hardly to be distinguished. It is therefore most easily to be recognised by its stiff and rigid habit, by the broad permanent petals, which remaining amongst the deep purple capsules form a singular contrast with them.

Var. β, lazίfora; heads of flowers loose, branched.


105 S. longiscâpæ (D. Don, in Lin. trans. 13. p. 388) leaves ovate, serrated, on long petioles; thyrse of flowers ovate; segments of the calyx ovate, acute; petals ovate, hardly longer than the calyx. 2. H. Native of Siberia. Leaves hairy. Scape filiform, beset with glandular hairs. Pedicels and calyces downy. Flowers white. This plant scarcely differs from S. niveïs var. γ, tenus.

Long-scaped Saxifrage. Pl. ½ foot.

106 S. lena (Wall. cat. no. 450) plant quite glabrous; leaves lanceolate, obtuse, obscurely crenated, petiolate; bracteae linear; flowers few, disposed in a loose panicle; pedicels filiform, longer than the fruit; petals obovate, longer than the calyx; calyce lobes lanceolate, length of tube, each terminated by a sessile gland? filaments clavate? capsule rather bladdery, nerved, marked by minute elevated dots; stigmas sessile, thickish. 2. F. Native of Nipal, at Goshaingthan, Emodi, and Kamaon.

Pale Saxifrage. Pl. ½ foot.

107 S. dahl'riæ (Wild. spec. 3. p. 465) plant quite glabrous; leaves cuneiform, on long petioles, attenuated at the base, coarsely and deeply serrated at the apex; flowers in loose panicles; calyx segments ovate, acute; petals elliptic, acute. 2. H. Native of Dahluria, on the tops of the Alps, near the limits of perpetual snow. In North America, at Breich's Straits; alpine rivulets of the Rocky Mountains, Kotszebue's Sound, and Bay of St. Lawrence. Leaves said to be pubescent; the scape beset with glandular hairs, and the pedicels and calyces clothed with ammny downy. Petals white, marked with 2 yellow spots at the base. The broadly cuneate, or rather flabelliform leaves are very remarkable.

Dahrian Saxifrage. Pl. ½ foot.

Sec. VIII. SAXIFRAGE-ÆRE (this section contains what are considered the true species of the genus). D. Don, in Lin. trans. 13. p. 345.—Dactyloïdes, Tausch, hort. canali. fase. 1. D. C. prod. 4. p. 23.—Musæaria and Saxifraga, Haw. enum. sax. p. 22-29.—Triplinervium, Gaudin, fl. helv. 3. p. 116. Calyx 5-leaflet (f. 46. d.), erect, permanent, with the tube adhering to and involving the ovary (f. 46. b.). Petals sessile, perigonous (f. 46. c.). Stamina perigonous (f. 46. d.). Filaments flat, gradually attenuated. Stigmas spreading (f. 46. e.). Flat, spatulate, bearded with short down. Capsule covered by the calyx (f. 46. b.), and closely adhering to it. Seeds obovate.—Perennial rarely annual, humble, densely tufted herbs, for the most part bearing auriculae. Leaves alternate, variously parted, rarely simple, usually green; with the margins neither cartilaginous nor dotted. Stems leafy, few, or many-flowered. Flowers white or yellow, rarely red.

§ 1. Perennial. Surculi numerous. Leaves undivided, rarely tridentate at the apex.

108 S. frarnassifoliæ (D. Don, in Lin. trans. 13. p. 405) stem erect, leafy, 3-4-flowered; leaves cordate, stem-clasping,
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Var. β, trifida (Gaudin, in Meisner, aniz. p. 66. fl. helv. 3. p. 114.) of the same leaves tridif. 2. H. Native of Vallais, in the valley called Bagnes.

Tender Saxifrage. Fl. May. Jul. Clt. 1819. Pl. 1/4. foot. 113 S. depresse (Sternb. rev. sax. 42. t. 11. a. 5.) stem roughish, few-flowered, furnished with 2 leaves, one of which is a little stem-clasping; leaves spatulate, entire, and cuneately tridentate at the apex, running into the petiole at the base, rather scabrous beneath; petals hardly exceeding the calyx, which is campanulate; calyx lobes triangular, broad. 2. H. Native of Italy, on Mount Alpi. Haw. enum. sax. p. 31. It differs from S. androsacea, to which it is nearly allied, in the leaves running into the petiole at the base, and in the lower surface of the leaves being roughish from short stelliferous hairs, not pilose. Perhaps the same as S. androsacea β, tridentata.

Depressed Saxifrage. Fl. May, June. Clt.? Pl. 1/4. foot. 114 S. M. skii (Fisch. in Sternb. rev. sax. 1. p. 1. f. 3.) stems tufted, usually 3-flowered; calyx segments ovate; petals obvate-roundish, longer than the calyx; capsule rather bladdery; styles parallel; radical leaves rosulate, ovate or spatulate, entire, ciliated, glabrous; cauleine ones smaller, few. 2. H. Native of Siberia, in humid places on Mount Jablonoi. Habit nearly of S. androsacea, but differs in the capsule being bladdery, much longer than the calyx. Flowers white.

Merk's Saxifrage. Pl. 1/4 foot. 115 S. croceà (Gaudin, syn. sax. in Meisner, aniz. 1818. p. 70. fl. helv. 3. p. 133.) stems tufted, 3-5-flowered, covered with short pubescence; terminal peduncle sessile: lateral ones very long, filiform; leaves linear-oblong, obvate, or tridentate; calyx segments oblong-narrow, blunted, clothed with pubescence, longer than the tube; petals elliptic, blunted, hardly equal in length to the calyx. 2. H. Native of Savoy, in the southern Alps. Muscaria croceà, Haw. enum. sax. p. 38. Flowers copper-colored.


117 S. geranioides (Lin. spec. 578.) leaves reniform, 3-5lobed, pubescent, on long petioles: segments cuneate, deeply toothed; paniculate coarctate, many-flowered; calyx segments linear-lanceolate, obtuse, reflexed; petals oblong, flat. 2. H. Native of the Pyrenees. Lapryer. pyrr. sax. p. 66. t. 43. S. paniculàta, Schleich. cat. 1821. S. quinquèfida, Lam. fl. fr. 3.
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Var. \( \beta \), obtusiflora (Ser. in D. C. prod. 4. p. 30.) plant hardly pilose; lobes and lobules of leaves hardly toothed; flowers subumbellate; bracteas linear. 2. H. Native of Switzerland. S. geranioides, Schleich. cat. 1822, p. 63.


121 S. visciosa (Haw. in misc. nat. 164. enum. sax. p. 26.) stems hairy; radical leaves pedatifid; of the surculi, which are erect, 5-3-cleft: cauline ones trifid and lanceolate, 3-nerved. 2. H. Native country unknown. Allied to S. geranioides and S. pedatifida, but much smaller and more cymally. Flowers white.

Clammy Saxifrage. Fl. May. June. Pl. 4 f. 1 to 1 foot.

122 S. catalonia'lica (Dryander, in hort. kew. 3. p. 70.) surculi woody; leaves 3-5-parted, petiolar, stiff, glabrous; segments subulate, with horny mucrones; stems cymally; calyx brownish, glabrous, with ovate segments, which are furnished each with a recurved mucron at the apex; petals obovate. 2. H. Native of Spain. Sims, bot. mag. 1651. S. triplinervis, Schrad. hort. goet. fasc. 1. p. 13. t. 7. S. petrae'a, Pavon. hairs. Plant densely tufted, quite glabrous. Stems reddish at the base, covered with viscid juice. Petioles naked, channelled above. Flowers snow white, disposed in a loose branched panicle. Pedicels and calyces covered with clammy juice.


123 S. obtusifida (D. Don, in Lin. trans. 13. p. 416.) surculi woody; leaves 3-parted, stiff, and smooth, as well as the very narrow petioles; segments linear, very blunt; calyces pubescent, with ovate obtuse segments; petals obovate. 2. H. Native of Spain. Plant densely tufted, quite glabrous, deep green. Stems few-leaved. Lateral segments of leaves lengthened and, usually bifid. Pedicels 1-flowered, pubescent. Flowers campanulate, white. Petals triple-nerved: nerves 2-3-forked at the apex.


124 S. ajugae'follia (Lin. amic. acad. 4. p. 271.) surculi procumbent; leaves 5-parted: segments linear-lanceolate, mucronate; stem branched; calycine segments ovate-mucronate; petals flat, obovate. 2. H. Native of Provence, on the mountains, and of the Pyrenees. Lapeyr. pyr. sax. p. 56. t. 31. Sternb. sax. p. 46. Plant green, furnished with a few viscid hairs, which are more dense on the petioles: densely tufted at the time of flowering, but growing in a loose manner afterwards. Surculi long, reddish, as well as the base of the stems. Leaves glabrous, but ciliatus: cauline ones undivided, lanceolate. Flowers large, campanulate, white. Calyx beset with glandular hairs.

Petals triple-nerved: nerves simple.

Var. \( \beta \), atonis (Haw. enum. sax. p. 29.) leaves of the prostrate stolons 5-3-cleft, somewhat pedate; segments linear-lanceolate, avened, twice the length of the petioles. 2. H. Native of the mountains of Provence. S. ajugae'follia, Ait. hort. kew. ed. 2. vol. 3. p. 70. S. ajugae'follia \( \beta \) longipes, Haw. l. c.

Var. \( \gamma \), funibrita (Ser. in D. C. prod. 4. p. 28.) sepals and petals jagged. 2. H. Native of the Pyrenees. Ramond, in D. C. fl. fr. 4. p. 372. in a note.


125 S. affinis (D. Don, in Lin. trans. 13. p. 418.) surculi procumbent; leaves 5-parted: segments linear, mucronate; calycine segments, linear, avened; petals oblong, with inflexed edges. 2. H. Native of Ireland, as on the top of Brandon mountains, county of Kerry. Plant beautiful green, furnished with soft and viscid hairs, densely tufted before flowering, but afterwards loose. Surculi elongated, reddish. Stems shining, smooth, few-flowered. Leaves of the surculi for the most part 3-parted. Pedicels and calyces clothed with viscid down. Flowers white, smaller than those of S. ajugae'follia. Petals triple-nerved: nerves simple.


126 S. capitata (Lapeyr. fl. pyr. p. 55. t. 30.) stems thickish, prostrate, hardly pilose; leaves cuneate, 3-5-cleft, rather fleshy, nerved, crowded towards the tops of the surculi: lobes ovate, rather parallel; calycine lobes ovate-lanceolate, bluntish, length of tube when in flower; petals obovate, much longer than the calyx; styles very long, spatulate. 2. H. Native of the Pyrenees. S. ajugae'follia \( \beta \), D. C. fl. fr. 4. p. 371. Sternb. rev. sax. p. 26. Petals white, 3-nerved above the base, lateral nerves confluent. Very like S. ajugae'follia, but differs in the leaves being thickness and denser.

Capitate-flowered Saxifrage. Fl. May, June. Pl. 4 f. 1 foot.

127 S. pentadac'tylus (Lapeyr. fl. pyr. sax. p. 64. t. 40.) surculi short, erect; leaves on long petioles, glabrous, 5-parted:
Saxifraga adscendens, filaments petals native calycine radical foot. Plant flowered, disposed in loose panicles.

**Var. β. corymbosa** (Ser. in D. C. prod. 4. p. 30.) flowers numerous, in dense corymb; peduncles more rigid and shorter.

**Var. γ. capitellata** (Ser. l.c.) flowers somewhat capitate; peduncles very short.

**Five-fingered-leaved Saxifrage.** Fl. May, June. Ct. 1815. Pl. 3 to 4 foot.

128 **S. LATIFIDA** (D. Don, in Lin. trans. 13. p. 420.) surculi erect, short; radical and surculine leaves broadly cuneate, glabrous, 3-5-lobed; lobes broadly oval, calyx glabrous, with ovate-lanceolate mucronulate segments; petals spatulate, with simple nerves. Φ. H. Native of Spain. S. adscendens, Pavon, herb. Plant quite glabrous, pale green, tufted. Stems many leaved, many flowered. Lower calyx leaves like the radical ones, but more profusely lobed: lobes lanceolate; upper calyx leaves undivided. Peduncles elongated, 2-flowered. Flowers white.

**Broad-cleft-leaved Saxifrage.** Pl. 4 foot.


**Deceiving Saxifrage.** Fl. May, June. Wales. Pl. 4 foot.

130 **S. hiæta** (D Hann. cand. ed. 5. p. 107.) plant very villous; radical leaves 5-cleft: surculine ones trifid: segments ovate-lanceolate, acute; calyce segments triangularly ovate, acute; petals obovate. Φ. H. Native of Ireland, among alpine rocks, western highlands of Scotland, and Wales; as on the Galty mountains, Tipperary; in the west part of Scotland; near Twill du in Owain Idwell, also on the walls of Dolwyddelan castle, between Capel Cory and Llanddewi, North Wales. Smith, engl. Bot. 2291. Plant canescent, densely tufted before flowering, but afterwards loose, with the surculi decumbent and flexuous. Stem many leaved, few-flowered, clothed with viscid hairs. Petioles dilated. Lower calyx leaves 3-parted, with linear segments: upper ones undivided. Flowers white, smaller than those of S. decipiens. Pedicels and calyces clothed with glandular hairs. Petals triple-nerved: nerves simple.

**Hairy Saxifrage.** Fl. May, June. Ireland. Pl. 3 to 3 foot.

131 **S. platifuætata** (Smith, in Lin. trans. 10. p. 591.) plant villous; surculi elongated, prostrate; leaves 3-5-parted: segments linear, acute, and awned; calyce segments ovate, mucronate; petals orbicular. Φ. H. Native of the Alps of Scotland and Wales; as upon Snowdon in Wales; and the Cova mountains in Angus-shire, Scotland. Smith, engl. Bot. 2276.


**Broad-petalled Saxifrage.** Fl. June. Britain. Pl. 3 foot.


**Incurved-leaved Saxifrage.** Fl. May, June. Ireland. Pl. 4 foot.


**Naked Saxifrage.** Fl. May, June. Scotland. Pl. 3 foot.


**Sternberg's Saxifrage.** Fl. May, June. Pl. 1 foot.


**Neat Saxifrage.** Fl. May, June. Cl. 1818. Pl. 1 foot.

136 **S. tridentætæ** (D. Don, in Lin. trans. 13. p. 426.) plant glabrous; radical leaves 5-cleft, surculine ones on long petioles, acutely tridentate; calyce segments triangularly ovate, mucronate; petals spatulate. Φ. H. Native country unknown. Herb densely tufted, quite glabrous before flowering, but fur-

Tridentate-leaved Saxifrage. Fl. May, June. Pl. ½ foot.


Ades Saxifrage. Pl. ½ foot.

138 S. caspites (Lin. spec. 578.) radical leaves aggregate, 5-3-parted or undivided; segments linear-lanceolate, obtuse; stems few-leaved, few-flowered; calyce segments ovate, obtuse; petals obovate-roundish, connivent. 2. H. Native of the Alps of Lapland, Sweden, Switzerland, and the Pyrenees; also of the north-west coast of America, Kotzebue's Sound, Arctic sea-shore, and of Greenland. In Wales and Ireland on the loftiest mountains; on the rocks of Trolt, Cyn Iddwell, North Wales; on the lofty summits of Brandon mountains, county of Kerry. Gunn. fl. nov. t. 1047. t. 7. f. 3. Smith, engl. bot. t. 794. S. Groenlandica, Lin. spec. p. 578. Gunn. fl. nov. p. 689. t. 7. f. 1. Lepery, pyr. sax. p. 39. t. 19.—Dill. elth. p. 357. t. 353. f. 329. Muscária caspites, Haw. enum. sax. p. 37. Plant densely tufted, beset with glanduliforous hairs. Saxifragi short, very leafy. Stems 1-3-flowered, but in cultivation usually 4-flowered. Lower cauline leaves palmate, upper ones for the most part 3-parted. Pedicels and calyces clothed with viscid down. Flowers rather large, milk-coloured; filaments yellow; petals triple-nerved; nerves simple: lateral ones curved.


139 S. uniflora (R. Br. in Parry's first voy. appendix. p. 275. but not of Sternb.) radical leaves aggregate, trifid; cauline ones linear, undivided, distant; stem one-flowered, and is, as well as the inferior ovarium, viscid; down glandular, very short; calyce segments obtuse; petals obovate-oblong. 2. H. Native of the Arctic Islands. S. caspites, R. Br. in Ross voy. ed. 2. vol. 2. p. 192. S. caspitas / uniflora, Hook. fl. bor. amer. 1. p. 244. S. venosa, Haw. enum. sax. p. 25. Flowers milk-coloured.

One-flowered Saxifrage. Pl. ½ foot.


Stellate Saxifrage. Pl. 1 inch.


Var. β, Heâ'nei; leaves densely glandular, 3-5-lobed: lobes ovate; surculi nearly globose; corymb 6-10-flowered. 2. F. Native in valleys on the Cordillera of Peru. S. Cordilleriana var. γ Heâ'nei, Presl, in Hœk. reliq. 2. p. 55.

Var. γ, λáxa; stems elongated; leaves densely glandular, 3-5-lobed, loosely imbricated; lobes ovate; surculi cymbral, loose; corymb many flowered. 2. F. Native of the Cordillera of Peru, in valleys. Petals white. S. Cordilleriana / λáxa, Presl, in Hœk. reliq. 2. p. 55.

Bonpland's Saxifrage. Pl. 1 inch.


Var. a, integrifolia (Ser. in D. C. prod. 4. p. 24.) leaves spatulate, usually entire: upper ones puberulous: lower ones glabrous.

Var. β, trîloba (Ser. l. c.) leaves all cuneate, 3-lobed at the apex, clanny. 2. F. S. Magellanica, Sternb. rev. sax. p. 39. t. 11. f. 1.

Magellan Saxifrage. Pl. ½ foot.

143 S. lanceola (Haw. syn. succ. p. 324. enum. sax. p. 240.) leaves glabrous, ciliated; those of the surculi palmately 7-cref: those of the stolons, which are very short and erect, 3-5-cref: calyce leaves lanceolate; petals roundish, obovate. 2. H. Native of the Alps of Europe. Flowers white.

Var. β, minor (Haw. enum. sax. p. 24.) leaves trifid and entire: lower cauline ones lanceolate-spataulate; petals oblong-cuneiform, distinct. 2. H. Two or three times smaller than the species, and the leaves and petioles are very different.

Haw. l. c.

Var. γ, obtûsa (Haw. l. c. p. 24.) leaves cuneiform at the base or obovate: those of the rousle deeply 1-5-toothed, and brownish: those of the stolons usually abortive: lower cauline leaves elliptic; petals orbicularly obovate. 2. H.


144 S. dichotomus (Willd. in Sternb. sax. rev. p. 51.) radical leaves reniformly cordate, palmately parted: segments linear; cauline leaves nearly sessile, cuneate, 3-5-parted; flowers in dichotomous panicles; peduncles and calyces plicate; calyce lobes lanceolate, acute, length of the tube. 2. H. Native of Spain. Haw. enum. sax. p. 27. Flowers white.

Dichotomous Saxifrage. Pl. ½ to ½ foot.

145 S. exarata (Vill. dauph. 4. p. 674. t. 45.) plant pubescent; radical leaves 5 or 3-parted: those of the surculi 3-parted: segments linear, very blunt, engraved above; stem many flowered; calyce segments ovate-oblong, obtuse; petals obovate, with simple nerves. 2. H. Native of the Alps of Dauphiny, Savoy, Piedmont, and the higher Pyrenees; also of North America: frequent on the rocky Mountains between lat. 55° and 56°. S. nervosa, Lapeyr. pyr. sax. p. 63. t. 39. S. hynoïdes, All. pedem. no. 1598. t. 21. f. 4. S. intermedius, Gaudin, fl. helv. 3. p. 122. S. striata, Hall. fil. in herb. Gaulin, l. c. p. 1297. Plant densely tufted before flowering, afterwards...
loose and surculose, densely clothed with glandular down. Surculi stiffish. Cauline leaves broadly 3-parted, with the lateral segments generally bifid. Petioles linear, flat. Pedicels filiform, 1-flowered, furnished each with a tripartite bracteal at the base. Flowers white; filaments yellow.


146 S. Payont (D. Don, in Lin. trans. 13. p. 434.) plant pubescent; leaves 3-parted; segments linear, acute, nerved; petioles linear, dilated, ribbed beneath; calyce segments linear-lanceolate, acute; petals obvolute, with simple nerves. 2. H. Native of the Alps of Peru, in very cold places. Herb growing in dense flat tufts. Surculi short. Stems few-leaved, 3-5-flowered, covered with short glandular hairs. Upper cauline leaves simple, linear, all the rest tripartite. Petioles linear, dilated. Peduncles and calyxes densely clothed with short glandular down. Flowers milk-coloured, fading to a yellowish colour.

*Pawon* S. moschata. Pl. 1 to 3/4 foot.


148 S. quiunqueum (Haw. syn. succ. p. 625. and enum. sax. p. 36.) naked; leaves of the twiggy surculi 3-5-cleft, remote, length of the internodes; lobes subulate, awned, equal in length to the petioles, which are ciliated; petals orbicular. 2. H. Native country unknown.

*Five-toothed-leaved* S. moschata. Fl. May, June. Pl. 3/4 to 1 foot.

149 S. paniculata (Hort. madr. ex Horn. hort. hain. p. 1. p. 402.) leaves glabrous, 3-parted; leaves trifid, linear; cauline leaves tripartite, with entire lobes; stems ascending. 2. H. Native of Spain.

*Paniced* S. moschata. Pl. 1/2 foot.

150 S. moschata (Wulf. in Jacq. misc. 2. p. 128. t. 31. f. 2.) plant pubescent; radical leaves trifid: surculine ones trifid or un-divided, nerved; segments linear, acutish; stems filiform, somewhat racemose; petals narrow-ovate, hardly exceeding the calyx. 2. H. Native of the Alps of Carinthia, Carniola, Savoy, Salis-
leaves deeply tripartite; segments cuneate, multifid; peduncles many-flowered; calydic segments ovate-oblong, blunting; petals oval, entire; stem ascending, panicked.  

2. H. Native of the Pyrenees, in springs. S. petraea, Gouan. ill. p. 29. t. 17.  

S. aquatica, Lap. pyr. sax. p. 53. t. 28. Stem. sax. p. 48. t. 19. f. 1 and 2. Plant tufted. Cercus short, leafy. Stems ascending, a foot or more high, beset with glandular hairs. Radical leaves 5-lobed, glabrous; lobes deeply toothed. Petioles dilated at the base. Flowers disposed in corymbose panicles, white. Peduncles many-flowered, and are as well as the calyces clothed with glandular down. Nerves of petals simple, reddish. Filaments yellow. This is the largest species of the whole section.

153. S. Terkešniss (Bunge, in Ledeck. fl. ross. alt. ill. t. 398. fl. alt. 2. p. 123.) plant small, tufted; radical leaves much crowded, cuneate, trifid; segments oblong-linear, obtuse, ciliated with a few glands; caulis leaves few, trifid or entire; stem few-flowered, glandular; petals oblong, twice the length of the calyx.  

2. H. Native of Altai, in rough stony places on tops of mountains, between the rivers Ursul and Koksun. Flowers pale yellow. Allied to S. moschata, but differs in the flowers being twice the size, and in the petals being obvolute-oblong.

Terek Saxifrage. Pl. 1 to 2 inches.

154. S. secunda (Moretti, tent. sax. p. 20.) plant very villous; radical leaves aggregate, cuneiform, 3-5-cleft lobes obtuse; stems few-leaved, rather corymbose; flowering shoots green; petals of calyx ovate, obtuse; petals obvolute, longer than the calyx.  


Second-flowered Saxifrage. Pl. 1 foot.

155. S. venosa (Haw. enum. sax. p. 28.) plant almost stemless; leaves simple and trifid, nerved; scapes 1-flowered, furnished with linear entire leaves.  

2. H. Native of Melville Island. Perhaps only a variety S. muscoides, uniflora, or csilpita.

Fein-leaved Saxifrage. Pl. 1 to 2 inches.

156. S. glabra (Bertol. virid. bonn. 1824. p. 80.) surculi densely leafy; stems few-flowered, glabrous; leaves all undivided, linear or spatulate, glabrous; peduncles and calyces puberulous, viscid; petals obvolute, obtuse, length of the calyx, 3-nerved; capsule short, somewhat globose, inclosed in the calyx; styles short, diverging; seeds obvolute, echinated, dark.  

2. H. Native of Abruzzo, on humid grassy rocks. Said to be nearly allied to S. exarata, Tenore, append. 4. fl. neap. p. 19.


157. S. quinquifida (Haw. in misc. nov. p. 153. enum. succ. p. 26.) surculi erect; leaves cleft into 5-11 parts, pedate; segments linear-lanceolate, furrowed by a line on the upper side.  

2. H. Native of Scotland, on the mountains. Perhaps the same as S. petaloides.


158. S. sileniflora (Cham. ex Hook. fl. bor. amer. 1. p. 245.) plant tufted; surculi short; leaves stiff, rosulate, dense, 3-5-7-parted, shining, and as if they were varnished, many nerved, pubescent: segments linear, acutish; foliaceous stems elongated, clothed with glandular down; flowers panicled, rather large; ovarium adhering to the tube of the calyx, which is clothed with glandular down; calydic segments obvolute; petals obvolute, 3-nerved, twice the length of the calyx.  

2. H. Native of Behring’s Straits. The inflorescence of this plant a good deal resembles S. hypnoides.

Var. β, uniflora (Hook. l.c.) stem 1-flowered.

Catchfly-flowered Saxifrage. Pl. 1 to 2 feet.

159. S. adscendens (Vahl. in act. nat. hist. hafn. 2. 1. p. 12.)
pyr. sax. p. 57. t. 32. Smith, engl. bot. t. 454. S. elongella, platinpétala, densa, curvata, densifolia, Schleich. cat. 1821. Herb densely tufted before flowering, quite glabrous, but afterwards becoming loose, succulose, and villous. Surculi reddish as well as stems, which are erect, shining, brittle, and 2-4-flowered. Surculine leaves furnished with ovate, acute buds in the axils. Cauline leaves few, linear-lanceolate, undivided. Peduncles elongated, 1-flowered, clothed with viscid down as well as the calyces. Petals white, triple-nerved, rose-coloured on the outside at the apex; nerves simple.


Var. ζ, pulchella (D. Don, 1.c.) plant more robust; surculi thicker and stiffer, and more rigid; buds obtuse, more crowded; surculine leaves broader, with a furrow on the upper surface. ɣ. H. Native of the Alps of Scotland.


Longish-stalked Saxifrage. Fl. Apr. May. Scot. Pl. ½ ft. 165 S. leptophylla (Pers. syn. 1. p. 490.) surculi proscopum, very long, slender; radical leaves 5-parted: surculi ones 3-parted or undivided: segments linear-lanceolate, very acute, divaricate; calyce segments oblong-ovate; petals spatulate, quite entire. γ. H. Native of the Alps of Switzerland, and on the mountains of Wales. S. retrolinexa, Hortul. Plant quite glabrous, and densely tufted before flowering, but afterwards loose, diffuse, and surculose, and beset with villous stigmas. Stems numerous, flexuous, smoothish, shining, many-flowered. Leaves without any buds in the axils. Segments of leaves awned. Flowers drooping, white. Peduncles elongated, and are as well as the calyces beset with glandular pili. Calyce segments ending in a reflexed mucrone each. Petals triple-nerved, with the nerves simple.

Var. β, angustifolia (D. Don, in Lin. trans. 13. p. 450.) plant slenderer; segments of leaves narrower. ɣ. H. Native of Wales, on the mountains.

Slender-leaved Saxifrage. Fl. May, Ju. Wales. Pl. ½ ft. 166 S. leptophylla (D. Don, in Lin. trans. 13. p. 451.) surculi proscopum, elongated; leaves 5 or 3-parted: segments linear, acute; calyce segments lanceolate, mucronate; petals spatulate, emarginate. ɣ. H. Native of the Alps of Scotland, on the loftiest rocks, in moist situations, in Angusshire and Aberdeenshire, and on the hills to the north of Loch Lomond. Herb pale green, densely tufted before flowering, and quite glabrous, but afterwards becoming loose, diffuse, and surculose, and beset with long scattered villi. Surculi destitute of buds in the axils. Stems erect, few-leaved, usually 5-flowered, rarely 1-flowered. Radical leaves 5-parted: surculi ones 3-parted: lower calypere ones 5-parted: upper calyce ones undivided, lanceolate, and acuminate. Flowers campanulate, white, drooping while in the bud. Petals triple-nerved; nerves simple, green.


§ 3. Annual or biennial plants, without surculi. Roots fibrous. Petals usually emarginate.

diffusely branched, furnished with glanduliferous hairs. Stems erect, branched at the base; branches elongated, fastigate. Radical leaves on long petioles, somewhat reniform at the base; lobes obtuse; cauleine leaves all petiolate: upper cauleine leaves undivided, acute at both ends; lower cauleine ones triplicate; lobes acute. Peduncles and calyxes clothed with viscid down. Flowers white, much larger than those of Saxifraga decandra. Petals triple-nerved; nerves simple.


Var. β, exilis (Gaudin, fl. helv. 3. p. 116.) leaves all oblong-spatulate; stem simple, few-flowered. H. Native of Switzerland, Italy, France, &c. S. exilis, Poll. veron. 2. p. 31.

Three-fingered-leaved or Wall Saxifrage. Fl. April, May. Britain. Pl. ½ to ¾ ft.


Var. β, littoralis (Ser. in D. C. prod. 4. p. 34.) plant small, very leafy; leaves usually quinqued; petals entire. H. In humid places on the banks of Lake Leman, S. petraeà littoralis ε, Gaudin, fl. helv. 3. p. 117.


Contrary-turn Saxifrage. Fl. May, Ju. Clt. 1800. Pl. ½ ft. Cult. Saxifraga is a most extensive genus of pretty alpine plants, the greater part of which are well adapted for rockwork, or to be grown on the sides of naked rocks to hide the surface. Many of the more rare and tender kinds require to be grown in pots, in light sandy soil, and placed among other alpine plants, so that they may be protected by a frame in winter. The species belonging to sections Mieranthes and Hircalus grow best in a peat soil, which should be kept rather moist. The species belonging to the section Pyrola belong to the genus Pyrola and those of Saxifraga belonging to section Miracanthes; inhabitants of cold places of North America. Scapes naked. Flowers disposed in racemose panicles. Leaves coriaceous, permanent, entire, coarsely serrated; petioles broad and sheathing.

I. ERIOGYNIA (from εριος, erion, wool, and γυνη, gynae, a female; in reference to the ovaries being woolly). Hook. in fl. bor. amer. 1. p. 255. t. 88.

Lin. syl. Icosandria, Tetra-Hezagynia. Calyx turbinate, 5-cleft. Petals 5, hardly unguiculate. Stamens 20, inserted in the mouth of the tube, monadelphous at the base; anthers 2-celled, roundish. Ovaries 4-6, distinct from the calyx, and from each other, but connected by dense wool. Styles elongated, deciduous, filiform. Carpels 4-6, distinct, oblong, acute, recurved at the apex, opening lengthwise inside. Seeds dust-formed, pendulous, inserted towards the tops of the valves at the margins. Albumen wanting.—A perennial herb, native of North America, with the habit almost of Saxifraga cervatothylla; stoloniferous. Leaves very stiff, coriaceous, 1-nerved, quite glabrous, trifid; segments trifid or quadrifid: lobules linear. Flowers white, disposed in racemes, for the most part bracteate; pedicels 1-flowered.

1 E. pectinata (Hook. 1. c.). 2 H. Native of Behring's Straits; height of land upon the Rocky Mountains, on the west side, near the sources of the Columbia. Saxifraga pectinata, Pursh, fl. amer. sept. 1. p. 312. Sterile stems tufted, decumbent, stiff, stoloniferous. Lower leaves rosulate, with 3 trifid segments: lower cauleine ones with 3 bifid segments: upper cauleine ones or bracteas trifid.

Pectinated-leaved Eriogynia. Pl. ½ foot.

Cult. This is a beautiful alpine plant. It should be grown in pots, in a mixture of peat and sand; and will be easily increased by dividing, or by cuttings.


Lin. syl. Decandria, Digynia. Calyx campanulate, short, 5-cleft (f. 47. a.), with a broad tube. Stamens 10, inserted in the throat of the tube; anthers 1-celled (f. 47. c.), 2-valved. Petals 5 (f. 47. b.), linear. Ovaries 2 (f. 47. c.), free, tapering into the styles, which are permanent. Stigmas obtuse. Carpels 2, opening lengthwise on the inside (f. 47. d.). Seeds scobiform, erect, inserted in the margins of the valves.—Herbs with a habit between Pyrola and those species of Saxifraga belonging to section Mieranthes; inhabitants of cold places of North America. Scapes naked. Flowers disposed in racemose panicles. Leaves coriaceous, permanent, entire, coarsely serrate; petioles broad and sheathing.

1 L. Pyrolifolia (R. Br. in Parry's 1st voy. append. p. 273. Hook. 1. c.). 2 H. Native of the Island of Unalaska, Behring's Straits, height of land on the west side of the Rocky Mountains, in lat. 59°. L. amplexi-

**Pyrola-leaved Leptarrhena.** Pl. ½ to 1 foot. Cult. See Erégrénia above for culture and propagation.

### IV. CHRYSSOSPLENIUM (from χρυς, chrysos, gold, and σπλήν, spleen, the spleen; in reference to the golden colour of the flowers, and the supposed virtue of the plant in diseases of the spleen). Tourn. inst. t. 60. Lin. gen. 558. Gärtn. fruct. 1. p. 208. t. 44. f. 7. D. C. prod. 4. p. 48.

#### Fig. 48.

**Cult.** See Erégrénia above for culture and propagation.

1 C. Alternifólium (Lin. spec. 569) leaves alternate, reniformly cordate, crenately lobed; flowers corymbose, dichotomous. 2 H. Native of Europe, in moist shady places, and by the borders of shady rivulets, in Siberia and North America; in the woody and principally the barren country of British North America; to the extreme Arctic Islands, and on the Rocky Mountains; also in Kotzebue's Sound. In many parts of the north of England, but not so common as C. oppositifólium, as in Yorkshire, Portland Heath, near Norwich, in Worcestershire; and in lowlands of Scotland. Smith, engl. bot. t. 54. Fl. dan. t. 366.—Moris. hist. p. 477. sect. 12. t. 8. f. 8. Stems usually 3-cornered. Flowers yellow. Roots having offsets, but not creeping.


2 C. Ováliifólium (Bieb. herb. ex Led. fl. ross. alt. ill. t. 404. fl. alt. t. 2. p. 115.) stems with many scattered leaves; leaves ovate-orbicular or elliptic, tapering into the petiole, crenately serrated or entire; corymbs dichotomous, loose. 2 H. Native of the Altai region. Root creeping. Stem pilose below. Flowers yellow, solitary in the forks of the corymbs.

**Oval-leaved Golden Saxifrage.** Fl. April, May. Pl. ½ foot.

3 C. Oppositifólium (Lin. spec. p. 569.) floriferous stems erect; leaves opposite, reniformly sub-cuneated, crenated; flowers corymbose. 2 H. Native of Europe and America, in moist shady places, and by the sides of rivulets. In Britain, in many places in like situations. Curt. lond. 2. t. 27. Smith, engl. bot. 490. Gärtn. fruct. 1. t. 44. f. 7. Oed. fl. dan. t. 863. Root creeping. Stems quadranular. Flowers yellow.

Var. β, Scouleri (Hook. fl. bor. amer. 1. p. 242.) leaves profoundly crenately serrated. 2 H. Native of the north-west coast of America, on the banks of the Columbia river.


Double-stemmed Golden Saxifrage. Fl. April. Pl. ½ foot. 6 C. Nipaul'ense (D. Don, prod. fl. nep. p. 210.) leaves opposite, orbicularly subcordate, crenately serrated, glabrous. 2 H. Native of the Alps of Nipaul. Very nearly allied to C. oppositifólium, but differs in the leaves being more reniform, less manifestly crenated, and in the seeds being opaque, not shining. Leaves like those of Bétula nána, but membranous. Flowers yellow.

Nipaul Golden Saxifrage. Fl. Apr. Ma. Cult. 1820. Pl. ½ ft. 7 C. nudica'ule (Bunge, in Led. fl. ross. alt. ill. t. 405.) cauline leaves wanting: radical ones reniformly orbicular, and as well as the floral ones, which are reniform, petiolate, and deeply lobed; flowers densely glomerate. 2 H. Native of Altaia, near springs at the foot of the Alps, about Chasin, near Tschetchulicha, at the river Tscharysh. Root creeping, furnished with thick brown fibres. Plant quite glabrous, except sometimes on the under side of the leaves. Flowers greenish, much larger than those of C. alternifólium.

Naked-stemmed Golden Saxifrage. Pl. ½ to 3 ½ foot.

2 H. Native of Kamtschatka.

Kamtschatka Golden Saxifrage. Pl. ½ foot.

Cult. A moist shaded situation is the best for the species of Chrysopogon, as under the shade of trees or bushes, or behind a north wall; and they thrive best in peat soil. Easily propagated by dividing.


#### Fig. 48.

**Cult.** A moist shaded situation is the best for the species of Chrysopogon, as under the shade of trees or bushes, or behind a north wall; and they thrive best in peat soil. Easily propagated by dividing.

1 M. diphy llama (Lin. spec. p. 580.) radical leaves cordate, somewhat 3 or 5-lobed, dentately serrated, on long petioles; cauline leaves 2, opposite, smaller, and nearly sessile; capsule joined with the calyx only at the base; petals pinnafiled fringed. 2 H. Native of North America, in the United States; and Canada, about Quebec, Lake Huron, &c. Lam. ill. t. 373. f. 1. Gärtn. fruct. 1. t. 44. f. 6. Schkuhr, handb. t. 190. Ker. bot. reg. t. 166.—Mentz. pag. t. 10. Flowers white.
Two-leaved Mitella. Fl. Apr. May. Clt. 1731. Pl. 1/2 to 3 ft. 2 M. nuda (Lin. spec. 380.) plant usually stoloniferous; radical leaves reniformly cordate, thin, bluntly lobed, crenated, and somewhat ciliate; scapes slender, leafless; calyx spreading; petals pectinately jagged; ovary joined to the calyx only at the very base. 2 H. Native of North America, from Lake Huron to the Arctic Sea; and from Hudson's Bay to the Rocky Mountains; and of Siberia, at the river Lena. M. reniformis, Lam. ill. t. 373. f. 2. M. cordifolia, Lam. dict. 4. p. 196. ill. t. 373. f. 3. Michx. fl. bor. amer. 1. p. 270. M. prostrata, Michx. fl. bor. amer. 1. p. 270. —Gmel. sib. 4. t. 68. f. 2. Flowers white. The plant here characterised is the acknowledged M. cordifolia of all American botanists. A comparison of it with the figure of Gmelin will show that it is the same with his species, and consequently the M. nuda, Lin., and among the numerous specimens gathered by travellers in North America, many throw out runners, which again bearing leaves and scapes, the plant becomes the M. prostrata of Michx.

Naked-stemmed Mitella. Fl. Apr. Ju. Clt. 1738. Pl. 2½ to 3½ ft. 3 M. TRIFIDA (Graham, in edinb. phil. journ. June, 1829. Hook. fl. bor. amer. 1. p. 241. t. 82.) radical leaves cordate, bluntly lobed, crenated; scapes leafless; flowers pentandrous; calyx campanulate, with a spreading limb; petals trifid; ovary adhering to the calyx only at the base. 2 H. Native of North America, in alpine rivulets north of the Smoking River, on the east side of the Rocky Mountains, in lat. 56°, but rare. Plentiful in woody situations, on the low ridge of the Blue Mountains of Lewis and Clark's River, west of the Rocky Mountains, in lat. 46°. M. parviflora, Doug. miss. Flowers white. This species has the petals similar to those of Tellima parviflora. Differs from the rest of the species in the petals being trifid, and in the stamens being only 5 instead of 10, opposite the lobes of the calyx. Perhaps a species of Drummondia.

Trifid-petalled Mitella. Fl. May. Clt. 1829. Pl. 3 to 1 ft. Cult. The species of Mitella are pretty plants, well suited for the front of flower-borders, or to grow on rockwork. They are readily increased by dividing. Any light soil suits them, although they grow most luxuriant in a peat soil.


Lin. syst. Decandria, Digynia. Calyx adnate to the ovary at the very base, having the free part inflated, ovate, and 5-toothed (f. 49. b.), and the adhering part conical. Petals 5 (f. 49. c.), inserted in the calyx, jagged. Stamens 10 (f. 49. a.). Styles 2-5, distinct from the base: stigmas subcapitate, angular. Capsule adnate to the calyx at the base: the other half superior and furnished with the petaloid flower, 1-celled, 2-valved at the apex; placentas parietal, many seeded (f. 49. f.). This is an intermediate genus between Heuchera and Vâlia; it differs from Mitella in the styles being distinct, and the different habit. Perennial herbs. Leaves all radical, roundish, cordate, bluntly lobed, in T. parviflora compound, toothed, and hispid. Flowers of a dirty red-colour, rather large, disposed in racemose spikes.

1 T. grandiflora (Doug. in bot. reg. t. 1178.) leaves cordate, lobed, dentately serrated; racemes elongated; petals oblong-linear, pinnatifidly jagged; styles 2. 2 H. Native of the north-west coast of America, in shady pine woods, near springs along the shore. Mitella grandiflora, Pursh. fl. amer. sept. 1. p. 314. This is a fine plant, with leaves as large as those of Mitella rotundifolia. Flowers reddish. Stem and pedicels generally thickly clothed with fulvous hairs.


2 T. parviflora (Hook. fl. bor. amer. 1. p. 239. t. 78. A.) plant scabrous from hairs; leaves ternate; leaflets deeply pinnatifid; racemes short; petals unguiculate, trifid; styles 3. 2 H. Native of North California. Abundant in light gravelly soils, under the shade of sapping pines, near Fort Vancouver; plentiful in low hills at the grand rapid of the Columbia; and also at Spokan river. Root small, rather fusiform, more or less fibrous, and bearing tubers; tubers granular. Racemes terminal, curved. Flowers middle-sized, red. This is a curious and distinct plant, with something of the habit of slender specimens of Saxifraga granulata.


VII. DRUMMONDIA (named after Thomas Drummond, who accompanied Capt. Franklin and Dr. Richardson in their last journey in North America). D. C. prod. 4. p. 49. —Mitella species, Graham.

Lin. syst. Pentandria, Digynia. Calyx with an obconical tube (f. 50. b.), adhering to the capsule a considerable way: limb 5-cleft: lobes triangular, valvate in aestivation (f. 50. a.), and at length reflexed. Petals 5, pectinately pinnatifid (f. 50. c.), alternating with the calycine lobes. Stamens 5, in front of the claws of the petals, nearly sessile. Stigmas 2, spreading, 2-lobed. Capsule 1-celled, 2-valved at the apex, bursting long before the seeds are mature (f. 50. d.). Seeds numerous, disposed along 2 opposite placentas. —An herb, with a habit between Mitella and Heuchera. It differs from Mitella in the capsule adhering a greater length to the calyx, in the stamens being 5, not 10, and in the stigmas being spreading, not erect, and 2-lobed, not entire; and from Heuchera in the calycine lobes being valvate, not imbricate in aestivation.


Lin. syst. Decandria, Digynia. Calyx 5-parted, permanent, adhering at the base to the ovary: lobes obtuse. Petals 5, unguiculate, entire, inserted in the calyx, and alternating with the calycine lobes. Stamens 10. Styles 2, distinct. Ovarium 2-celled. Capsule 1-celled, adnate to the calyx at the base, mem-
branous, 2-valved; valves unequal, opening between the styles (one of the valves or carpels usually abortive). Seeds fixed to the bottom of the capsule, along the margins of the carpels or valves.—Perennial herbs, with the habit of *Milélla*. Stems erect, naked, or few-leaved. Leaves for the most part radical, petiolate. Racemes terminal, simple; flowers distant, pedicelate; pedicels incurvously pendulous when bearing the fruit. A very heterogeneous genus, which may probably be hereafter divided.

§ 1. Leaves simple.


*Cordate-leaved* Tiarella. Fl. April, May. Clt. 1731. Pl. $\frac{1}{2}$. t. 2. *T. unifòlia* (Hook. fl. bor. amer. p. 228. t. 81.) plant smooth; stems furnished with one leaf; leaves all petiolate, triangularly cordate, bluntly toothed; teeth mucronate; petiole loose; flowers drooping, calyx campanulate; petals abortive. 2. H. Native of North America, on the height of land on the Rocky Mountains, near the source of the Columbia, and at Portage river. Stems rather pubescent above. Leaves 3-5-lobed; lobes acutely toothed. This species has much the habit of *Heuchéra glàbër*, and is probably a decandrous species of that genus. The petals, if any exist, must be very fugacious, as none has been seen.

One-leaved Tiarella. Pl. 1 foot.


4. *T. alternifòlia* (Fisch. in litt. ex D. C. prod. 4. p. 59.) stem leafy; lower leaves cordate: upper ones truncate at the base, all having 5-7 short lobes, and these lobes are lobed again, sharply and coarsely toothed; lobes of calyx oblong, erect. 2. H. Native of the north of Asia, in the island of Sitka. Radical leaves on long, upper ones on short petioles. Flowers twice the size of those of *T. polyphylía*.

Alternate-leaved Tiarella. Pl. 1 foot.


Many-leaved Tiarella. Fl. April, May. Clt. 1820. Pl. $\frac{1}{2}$ to 1 foot.

§ 2. Leaves compound.—Blondia, Neck. elem. 2. p. 115.

6. *T. trifòlia* (Lin. amen. acad. 2. p. 351. spec. p. 580.) stem furnished with 1 or 2 leaves, rarely naked; leaves all trifoliolate; leaflets rhomboid-ovate, deeply toothed: teeth mucronate; petiole loose; flowers drooping; calyx small, campanulate; petals ovate, lanceolate. 2. H. Native of the north of Asia, and the north-west coast of America; common on the coast, and on the Rocky Mountains, on the west side of the ridge. The specimens from the Rocky Mountains are glabrous, and many of those from the coast, while others are more or less pubescent. Two panicles are often produced on the same stem.

Trifoliata Tiarella. Pl. 1 foot.

7. *T. laciniàta* (Hook. fl. bor. amer. p. 239. t. 77.) plant rough and hairy; stems usually furnished with 3 leaves; leaves trifoliolate: middle leaflet trifid; lateral ones bident, all broadly lanceolate, and pinnatifidly jagged; panicle loose; flowers drooping; calyx short, campanulate; petals wanting? 2. H. Native of the north-west coast of America. Roots rather horizontal. The petals, if any, must be very fugacious, as none have been seen.

Jagged-leaved Tiarella. Pl. $\frac{1}{4}$ to 1 foot.

8. *T. stegmàvata* (Presl, in reliq. Henk. 2. p. 45.) stems 1-leaved, and are, as well as the branches, clothed with glandular pubescence; radical leaves unknown: calyx one trifoliolate: leaflets glabrous, deeply lobed, mucronately toothed, acute: lateral leaflets obliquely ovate, middle one acute at the base; petals subulate, very narrow; capsules erect, dotted. 2. H. Native of Nootka Sound. Panicle many flowered.

Narrow-petalled Tiarella. Pl. 1 foot?

Cult. For culture and propagation see *Milélla*, p. 228.


Lin. syst. Octo-Decandria, Digynía. Calyx deeply 4-5-parted, coloured; segments oval, obtuse, concave. Petals wanting. Stamens 8-10, opposite the calyceous lobes; filaments subulate; anthers spherical, 2-celled. Styles 2; stigmas 2, truncate, pruinose. Capsule superior, bistratose, many seeded.—Perennial robust pilose herbs, with the appearance of *Spírä'a Arúnacu*. inhabiting the banks of rivulets. Leaves large, binate; leaflets coarsely serrated; petals much dilated at the base. Flowers small, of a greenish yellow-colour, in spicate racemes, which are disposed in panicles.

1. *A. rivuláris* (Hamilt. l. c.) flowers 4-cleft, octandrous; leaves binate; leaflets ovate, doubly serrated, villous beneath, and on the petioles. 2. H. Native of Nipaul, at Narainhetti. Bracteas usually jagged at the apex.

Rivulet Astilbe. Pl. 3 feet.

2. *A. déca'n'dra* (D. Don, prod. fl. nep. p. 211.) flowers 5-cleft, decandrous; leaves binate; leaflets cordate, deeply lobed and serrated, beset with glandular pill beneath, and on the petioles. 2. H. Native of North America. Tiarella bibernáta, Vent. malm. t. 54. The petals are said to be 5, and linear, in this plant, not as in the first species wanting. Leaflets ovate, broadly and bluntly serrated.


§ 2. Stamens equal in number to the petals, or sometimes fewer, alternating with the petals.


Lin. syst. Pentándria, Digynía. Calyx permanent, 5-cleft (f. 51. a.), imbricate in aestivation. Petals undivided (f. 51. a.), nearly equal. Stamens 5. Styles 2 (f. 51. c.), very long, distinct, length of stamens: when young approximate and almost concrete, but afterwards diverging. Capsule crowned by the dry calyx, and adnate to it at the base, opening between the styles (f. 51. d.), 1-celled; placenta 2, adnate, many seeded. Seeds rough from dots or wrinkled.—Herbs. Leaves mostly radical, platyly lobed, toothed. Stems mostly leafless. Flowers paniculate or racemose.

1. *H. america'ca* (Lin. spec. 328.) plant clothed with clammy pubescence, scapes and leaves roughish; leaves on long petioles, somewhat 5-7-lobed, toothed; thryse elongated, panicled; calyx lobes short, obtuse; petals lanceolate, length of the calyx;
stamens much exserted. 2. H. Native of shady places from New England to Carolina, in the Illinois region; New Spain and Peru. Schkuhr, handb. t. 58. H. viscida, Pursh; fl. amer. sept. 1. p. 187. H. cortos, Michx. fl. bor. amr. 1. p. 171. There is a variety of this species having 2 of the petals longer than the rest. Flowers reddish. Perhaps H. reniformis and H. glabra, Rafin. med. fl. 1. p. 244. are not distinct from this.

Var. β. glabrisetula (Schultes, syst. 6. p. 216.) leaves smoothish; panicle rather crowded.

Var. γ. foliosa (Moricand, mss.) scapes furnished with a few long distant leaves. Native of Peru.


2 H. divaricata (Fisch. in litt. ex D. C. prod. 4. p. 51.) scapes naked, glabrous; leaves glabrous, somewhat 5-lobed: lobes toothed; teeth mucronate; branches of panicle divericate; teeth of calyx bluntish; petals lanceolate, acute. 2. H. Native of the north of Asia, in the islands of Kadiak and Sitka; also in Kamtschatka.

Divaricate Heuchera. Pl. 1½ foot.

3 H. purpurea (Pursh, fl. Amer. sept. 1. p. 187.) plant covered with powdery down; lower part of scape and under side of leaves glabrous; leaves somewhat acutely lobed, toothed; teeth roundish, mucronate; branches of panicle short, crowded with flowers; calyx broad, campanulate; petals spatulate, longer than the calyx; stamens exserted. 2. H. Native from Pennsylvania to Virginia, on the Blue Mountains. H. pulvulinata, Rafin. med. bot. 1. p. 213. Petals pale red, variegated with yellow. Flowers larger than in other species.


4 H. hispida (Pursh, fl. Amer. sept. 1. p. 188.) plant hispid and scabrous; scapes, petioles, and under side of leaves glabrous; leaves acutely lobed, toothed, hispid from villi above; teeth short, rather retuse, mucronate; branches of panicle few-flowered; calyx middle-sized, with acutish lobes; petals spatulate, length of calyx; stamens exserted. 2. H. Native of Virginia and Carolina, on high mountains. Flowers reddish.


5 H. micrantha (Doug. in bot. reg. 1302.) lower part of scape and petioles beset with long fulvous hairs; leaves roundish-cordate, nearly naked, bluntly lobed, crenate: crenate mucronate; lower bracteas falciforme, cut; upper ones setaceous; panicle loose; petals linear, one-half shorter than the long exserted stamens. 2. H. Native of the north-west coast of America, on the steep rocky banks of the Columbia, near the Grand Rapids. Flowers greenish-yellow.


6 H. villosa (Michx. fl. bor. amer. 1. p. 172.) lower part of scape and petioles beset with deflexed soft hairs; leaves cordate, acutely lobed, mucronately serrated, a little cut, nearly naked above, but very villous on the nerves beneath; panicle loose; peduncles capillary, dichotomous; bracteas linear, ciliated; flowers small; petals very long, narrow-spatulate, and are, as well as the stamens, much exserted. 2. H. Native of Upper Canada, and on the higher mountains of Virginia and Carolina. The leaves are very different from those of H. Americana, the flowers are smaller, and the petals regularly long and narrow, white.


7 H. glabra (Wild. in Schultes, syst. 6. p. 216.) scape leafy; leaves cordate, acutely lobed, glabrous, unequally and acutely toothed; lower stem ones or bracteae toothed; panicle loose; flowers small; calyx pubescent; petals linear; stamens exserted. 2. H. Native of the north-west coast of America; Nootka, in the vicinity of the Columbia river; Rocky Mountains, at Providence and Portage rivers. Hook. fl. bor. amer. 1. p. 236. t. 79. Tiarella colorans, Graham, in edinb. new. phil. journal. July, 1829. Petals white. Stipulas adnate, as in the genus Ross, but free at the top.


8 H. caulescens (Pursh, fl. Amer. sept. 1. p. 188.) plant suffrutescematous at the base; lower part of scape and petals pilosae; leaves glabrous above, but pilose at the nerves beneath, acutely lobed, ciliated, toothed; teeth acute, mucronate; calyx short, villous; petals linear, twice the length of the calyx; stamens exserted. 2. H. Native of Carolina, on the mountains, and of Kamtschatka. Petals white.


9 H. barbarossa (Pestl, in Relg. Henk. 2. p. 56.) plant suffrutescematous at the base; floriferous stems clothed with rufous villi; petioles very villous from rufous hairs; leaves roundish-cordate, bluntly lobed, mucronately toothed, ciliated, puberulous; panicle loose, many flowered; petals linear-oblong, longer than the calyx; stamens exserted. 2. H. Native of Nootka Sound. Plant small.

Barbarossa Heuchera. Pl. ¾ foot.

10 H. cylindrica (Doug. mss. ex Hook. fl. bor. amer. 1. p. 236.) scapes naked, and are, as well as the petioles, hairy; leaves cordate, deeply and roundly lobed, crenate, ciliated; truncate at the base, smoothish above, but very pilose at the veins beneath: teeth piliferous; panicle compact, cylindricall, rather spatiate; flowers rather large, apetalous; stamens inclosed. 2. H. Native of North America, on the declivities of low hills, and on the steep banks of streams on the west side of the Rocky Mountains. Like H. Richardsoni, but differs from it in the truncate base of the leaves, and in the spicate panicle, by having less oblique calyces, very short stamens, and by the absence of petals.

Cylindracea-spiked Heuchera. Pl. 1 to 1½ foot.

11 H. Richardsoni (B. R. in Franklin, 1st journal ed. 1. append. p. 766. t. 29.) scapes and petals rather pilose; leaves cordate, with a deep recess, bluntly lobed, crenate, rather pilose on both surfaces: teeth piliferous; panicle loose, thyssoid; flowers large; mouth of calyx oblique; petals obvolutely cuneate, hardly longer than the calyx; stamens a little exserted. 2. H. Native of North America, on the dry banks of rivers from lat. 54° to 64°.


12 H. Menziei (Hook. fl. bor. amer. 1. p. 257. t. 80.) plant hispid from pili; stems leafy; leaves cordate, acutely lobed, deeply serrated; flowers racemose, apetalous; calyx cylindrically funnel-shaped; stamens exserted; ovary free. 2. H. Native of the north-west coast of America; at Bank's Isles, and from the coast of Columbia to Puget's Sound. Tiarella Menziei? Pursh. fl. Amer. sept. 1. p. 313. Racemes terminal, elongated, solitary, many flowered. Stamens 3, exserted. Petals 5, linear, reflexed. (f. 51.)

Var. β. plant less hairy. 2. H. Native along with the species, in shady woods. H. triandra, Doug. mss. ex Hook. l.c. Menzie's Heuchera. Pl. 1 to 2 feet.

13 H. bracteata (Ser. in D. C. prod. 4. p. 52.) plant pubescent; scapes racemose; leaves orbicular cordate, serrately cut; teeth mucronate; flowers bracteate; petals narrow, hardly

14 H. Longipes (Moc. pl. nont. ined. with a figure, ex D. C. prod. 4. p. 52.) scape pubescent; panicle secund; petals linear, revolute at the apex, longer than the calyx. 15. H. Native of the north-west coast of America. Lobes of leaves broad, rather distinct, acutely toothed. Petals and styles white. Long-petalled Heuchera. Pl. 1 foot.

15 H. Acetifolia (Rafin. med. fl. 1. p. 211. t. 49.) petioles hairy; leaves smooth, glaucous beneath, acutely 7-lobed, unequally toothed; teeth mucronate; scapes smooth; panicle elongated, loose; petals short; stamens exerted. 16. H. Native of North America, on hills and in the fissures of rocks, in Kentucky, Tennessee, and west of Virginia, Maryland, and Ohio, &c.

Maple-leaved Heuchera. Pl. 1 foot.

Cult. The species of Heuchera thrive in any light garden soil, and are readily increased by dividing at the roots. None of the species are showy.


Lin. syst. Triandria, Trigynia. Tube of calyx turbinate, adnate to the ovary; limb truncate, with 2 triangular acuminate nearly opposite teeth. Bracteoles linear, adnate to the tube of the calyx. Petals 9 (f. 52. c.), (8-10 ex Forst.) linear-oblong. Stamens 3 (f. 52. f.), short, alternating with the petals. Styles 3 (f. 52. b.) -5, filiform. Ovarium 2-3-celled. Ovula numerous, fixed to the top of the cells. Fruit capsular.—A nearly stemless herb, with the habit of Saxifraga cespitosa. Stems tufted. Leaves alternate, linear, obtuse, permanent, imbricated, thick, glabrous, woolly in the axils. Flowers terminal, sessile, solitary, white. Perhaps the petals are 6, and the stamens 6, of them antheriferous, and the other 3 converted into petals.

1 D. Magellanica (Forst. l. c.) £. F. Native of the Straits of Magellan, on humid rocks. Lam. ill. t. 51, Polyéodon Magellanicum, Lin. fil. suppl. 115. Magellan Donatia. Pl. ½ ft.

Cult. This plant will require to be grown in a small pot, well drained, in a mixture of sand, peat and loam; and placed among other alpine plants. It will be easily increased by dividing.

XII. LEPUROPETALUM (from lepuropon, lepuriun, a little scale, and πεταλον, petalon, a petal; in reference to the small scale-formed petals). Elliot, sketch 1. p. 370. D. C. prod. 4. p. 53.
Tomentose Vahlia. Pl. ¾ to ½ foot.

**Asiatic species.**

6 V. Oldenlandie (D. C. prod. 4. p. 54.) stem erect; leaves linear, pubescent; peduncles axillary, 2-flowered, shorter than the leaves. Q. F. Native of Tranquebar. Oldenlandia pentandra, Retz, obs. 4. p. 22. Heuchera dichotoma, Murr. comm. goett. 1772, p. 64. f. 1. Oldenlandia dichotoma, Spreng. pug. 2. p. 36. Flowers white. Perhaps Oldenlandia biflora, Roth, nov. spec. 97. but not of Lin. is sufficiently distinct from this; there are varieties of it with 4-5-parted flowers.

Oldelandia's Vahlia. Pl. ½ foot.


Sessile-flowered Vahlia. Pl. decumbent.

Obs. The Oldenlandia depressa of Willd. and Smith will probably make an eighth species to this genus when properly examined.

Cult. The seeds of all the species should be reared on a hot-bed; and in the month of May, when the plants will have obtained a considerable size, they may be planted out in the open border, in a warm sheltered situation. The V. Capensis, being a herbaceous perennial shrub, will require the treatment of other green-house plants.

XIV. CRYPTOPETALUM (from κρυπτος, cryptos, hidden, and πεταλον, petalon, a petal; petals minute, inclosed in the calyx). Hook. et Arn. in bot. misc. 3. p. 254.

Linn. syster. Pentandria, Trigynia. Calyx tubinate, 5-cleft, green; segments ovate, acute, spreading. Petals 5, inserted in the tube of the calyx, and alternating with its segments, inclosed, minute, spatulate. Stamens 5, inserted in the tube of the calyx, small, and almost inclosed, alternating with the petals; filaments filiform; anthers minute, roundish, orange-coloured, 2-celled. Ovary subglobose, with the lower part adhering to the calyx: upper part free, 1-celled; placenta free, parietal, linear, divaricately bilamellate, many ovulate; ovula very slender, membranous. Styles 3, short, hardly united at the base; stigmas minutely papillate. Capsule globose, inclosed in the permanent calyx, 1-celled, opening at the cells, and 3-valved in the free part; each of the valves terminated by a permanent style. Seeds numerous, pale, oval, obtuse at both ends, dotted;albumen thin, fleshy. Embryo straight, central.—A small annual smooth herb, about half an inch high. Stems erect, dichotomous, branched; branches divaricate. Leaves alternate, spatulate, quite entire, fleshy, hardly nervated. Flowers terminal, large for the size of the plant, emulating those of Chrysosplenium.

1 C. rusillum (Hook. et Arn. 1. c.) Q. H. Native of Chili, at Quintero. This curious plant is placed at the end of Saxifragaceae, because it seems more nearly allied to that order than to any other; it agrees with Chrysosplenium in many particulars.

Small Cryptopetalum. Pl. ⅔ inch. Cult. Sow the seed in a small pot filled with a mixture of peat and sand.

Tribe II.

HYDRANGEAE (plants agreeing with Hydrangea in being shrubby). D. C. prod. 4. p. 13. Shrubs, with opposite simple extipulate leaves. Flowers disposed in corymbs, having 5 petals, 10 stamens, and 2-3 styles; outer ones, and sometimes all, are often sterile; these sterile ones are more ample and dilated than the fertile ones.

XV. HYDRANGEA (from ὑδραγος, hydor, water, and αγγειον, aggeion, a vessel; some of the species grow in water, and the capsule has been compared to a cup). Lin. gen. 557. Gartn. fract. 1. p. 150. t. 80. f. 7. Lam. ill. t. 376. D. C. prod. 4. p. 13.—Hydrangea and Hortensia, Juss.

Linn. syster. Decadria, Di-Trigynia. Flowers usually diffused (f. 53. a. b.); but some of them are fertile and hermaphrodite (f. 53. b.). Tube of calyx hemispherical, 10-ribbed, rather truncate, adnate to the ovary: limb permanent, 4-toothed (f. 53. b.). Petals 5, regular. Stamens 10. Styles 2 (f. 53. c.), distinct. Capsule 2-celled, with introflexed valves, crowned by the teeth of the calyx and styles (f. 53. b. c.), flat-tish at the top, opening by a hole between the styles. Seeds reticulated, numerous.—Shrubs, with opposite leaves. Flowers corymbose, red or yellow, but usually white: the marginal ones sterile, and large, in consequence of the teeth of the calyx being dilated into broad petal-like coloured segments, the rest of the flower having the other parts abortive.

* Species natives of America.*

1 H. Arboreascens (Lin. spec. p. 568.) leaves ovate, rather cordate: superior ones lanceolate, coarsely toothed, pale and puberulous beneath; corymbs flatish; flowers nearly all fertile; alabastra obtuse. H. H. Native from Pennsylvania to Virginia. Flowers white, small, having an agreeable odour.

Var. a, vulgaris (Ser. in D. C. prod. 4. p. 14.) nerves of leaves puberulous.


Var. b, discolor (Ser. 1. c.) leaves almost white beneath from tomentum.


2 H. Cordata (Pursh, fl. amer. sep. 1. p. 209. exclusive of the synonyme of Michx.) leaves broadly ovate, acuminate, rather cordate at the base, coarsely toothed, glabrous beneath; flowers all fertile. H. H. Native of Carolina, on the mountains, and on the banks of the Missouri above St. Louis. Wats. dendr. brit. t. 42. Flowers small, white, sweet-scented. According to Torrey, this is merely a variety of H. arboreascens.


3 H. Peruviana (Moric. ms. with a figure, ex D. C. prod. 4. p. 14.) leaves oval, loosely serrated, coarcescent, reticulately veined, glabrous, rusty beneath, at the nerves, and on the petioles; young branches and peduncles clothed with purplish tomentum; outer flowers of the corymb large and sterile: inner ones hermaphrodite and petalous. H. G. Native of Peru, near Huayaquall. Perhaps a species of Cornia, and probably C. Peruviana.

Peruvian Hydrangea. Shrub 4 to 6 feet.


Var. b, glabella (Ser. in D. C. prod. 4. p. 14.) leaves nearly glabrous beneath; flowers all fertile. H. H. This variety has probably originated from culture.

5 H. queretfolia (Bartram, trav. ed. germ. p. 356. t. 7. ex Willd. spec. 2. t. 684.) leaves large, ovate, sinuately lobed, and toothed, pilose beneath; corymbs rather panicked, flattish; sepals of sterile flowers entire; alabastra depressed. H. Native of Florida. Sims, bot. mag. t. 975. H. radiata, Smith, icon. pict. p. 12. but not of Walt. Flowers white; sterile or outer ones of the corymb large.


**Species natives of Asia.**

6 H. altissima (Wall. tent. fl. nep. 2. t. 50.) leaves ovate, acuminate, serrated, smoothish; corymbs flatish; sterile flowers few, on pilose peduncles; alabastra of fertile flowers conical. H. F. Native of the mountains of Nipaul. Flowers white; sepals of sterile flowers obovate, very blunt, quite entire. Styles 2, thick, diverging.

**Tallest Hydrangea.** Shrub 4 to 6 feet.

7 H. vesiculosa (Wall. tent. fl. nep. 2. t. 49.) leaves ovate-lanceolate, acuminate, sharply serrated, almost glabrous above, but clothed with white tomentum beneath, as well as on the branches; corymbs flatish, large; peduncles villous; sterile flowers few, glabrous; alabastra of fertile flowers nearly globose. H. F. Native of Nipaul, on the mountains. Flowers white, rather large. Sepals of sterile flowers serrated. (F. 53.)

**Clathrate Hydrangea.** Shrub 4 to 6 feet.

8 H. aspera (Hamilt. ex D. Don, prod. fl. nep. p. 211.) leaves lanceolate, acuminate, sharply serrated, pubescent above, but densely clothed beneath with hoary tomentum, as well as on the branches; corymbs panicled; diffuse; peduncles villous; rays or sepals of sterile flowers ovate, mucronate, sharply serrated, pubescent; alabastra of fertile flowers globose. H. F. Native of Nipaul, in wetaty places at Narainkhet. Hortensia aspera, Hamilt. Leaves a hand long, and 2½ inches broad. Sterile flowers not near so large as those of the preceding species, white.


9 H. oblongifolia (Blum. bijdr. p. 920.) leaves oblong, acuminate, doubly toothed, glabrous above, but clothed with white tomentum beneath, as well as on the branches; corymbs divaricate; sepals of sterile flowers oval, glabrous, serrated; fertile flowers containing 3-4 styles. H. G. Native of the western parts of Java, in woods on the higher mountains. Very like the two preceding species, but differs in the teeth of the leaves being unequal, and not so sharp.

**Oblong-leaved Hydrangea.** Shrub 4 to 6 feet.


**Variform-surfaced-leaved Hydrangea.** Clt. 1821. Shrub 4 to 6 feet.

11 H. anomalata (D. Don, prod. fl. nep. p. 211.) leaves ovate, acuminate, nearly naked, sinuately crenated; pedioles and nerves pilose; cymes terminal, hairy; flowers uniform; rays or sepals of sterile flowers wanting. H. F. Native of Nipaul. Leaves 4 inches long, rounded at the base; pedioles an inch long. Flowers small. Styles very short, thick, recurved.

**Anomalous Hydrangea.** Shrub 3 to 6 feet.

12 H. hortensis (Sims. in act. bonn. 14. p. 688. D. C. prod. 4. p. 15.) leaves broadly ovate, serrated, acuminate; flowers disposed in ample corymbs or cymes, all diffused, with 4-5 segments; segments obovate-roundish, quite entire; fertile flowers very few, containing 2-3 styles. H. F. Native of China and Japan, but now cultivated almost every where in gardens for the sake of its beauty. Hortensis opuloides, Lam. dict. 3. p. 136. Dum. Cours. bot. cult. ed. 2. vol. 4. p. 345. Duham. ed. nov. 3. p. 97. t. 24. Hydrangea hortensis, Smith, icon. pict. 1. t. 12. Curt. bot. mag. 428. Hortensis speciosa, Pers. Primula mutabilis, Lour. coch. p. 104. Viburnum serratum, Thumb. fl. jap. p. 124. ex Rom. et Schultes, or Viburnum tomentosum, Thumb. ex Curt. but the descriptions of neither of these two plants agree with the present. The plant is called Temerithana, i.e. globe-flower, by the Japanese; and Fun-Dan Kwa by the Chinese. Flowers varying from rose-coloured to blue according to the soil in which the plant is grown; the sterile flowers are nearly always 4-cleft; but the fertile flowers are small and perfect. The plant is much valued on account of the great profusion of its very elegant flowers, which are monstros, in the same manner as the Snow-ball Guilder Rose. It was introduced by Sir Joseph Banks in 1790. The plant was first called Pectiaia by Commerson, in honour of Dæ Hortense Lapeaute.

**Hortensis's or Common Hydrangea.** Fl. April, Sept. Clt. 1790. Shrub 2 to 3 feet.

13 H. Azisai (Sims. in act. bonn. 14. p. 689.) leaves ovate, acuminate, attenuated at the base, crenately serrated; flowers disposed in cymes, diffused; corolline segments 4. H. F. Native of Japan, along with the preceding species. The cymes of flowers are very ample. Flowers for the most part greenish, rarely white. The plant is called Azisai by the Japanese, and Zu-hats-sen by the Chinese. There is a variety of it with variegated leaves, called Fiuri-Azisai by the Chinese.

**Azisai Hydrangea.** Shrub 2 to 3 feet.

14 H. Japonica (Sims. l. c. p. 689.) leaves ovate-oblong, acuminate, finely and glandularly serrated, quite glabrous on both surfaces; cymes crowded; flowers diffused; corolline segments 6-10, unequal, ovate-rhomboid. H. F. Native of Japan, where it is called Kakoosu. An elegant shrub, cultivated by the Japanese, about the size of the last.

**Flowers red. Benakau.**

Var. A; flowers grey. Konkaku.

**Japanese Hydrangea.** Shrub 2 to 3 feet.

15 H. Tsuberatai (Sims. l. c. p. 689.) leaves oblong, serrated, entire at the base, pale beneath; cymes crowded; flowers diffused; corolline segments 4-8, broadly obcordate, constantly of a greyish lilac-colour. H. F. Native of Japan, on the highest mountains. Viburnum serratum, Thumb. jap. p. 124. H. serrata, D. C. prod. 4. p. 115. Shrub climbing. The plant grows in the mountains of Aiva and Sonaki, where the natives use the dried leaves instead of tea, and is called by them Amatsja, i.e. sweet tea; and Do-Snoo-San by the Chinese. According to the Japanese, there is a variety with bitter leaves, which they call Kakoosoo.

Hh
Thunberg’s Hydrangea. Shrub cl.  

Green Hydrangea. Shrub 2 to 6 feet.  
17. H. paniculata (Sbl. l. c. p. 691.) leaves elliptic, acuminate, glandularly toothed, scabrous, torn on the floriferous branches; panicle branched, rather second; flowers discolored, very numerous; corolla segments 3-4, obovate, white.  y. F. Native of Japan. Shrub climbing, 5 feet high. The plant is called Tsurumani by the Japanese, and Too-sinkine by the Chinese. There is a variety with very pale red flowers, cultivated near the town of Posaka, very like the species, but does not climb, called Jamadai by the Japanese. Perhaps Viburnum pilicatum, Thum. is only a variety of H. paniculata.  

Panicled-flowered Hydrangea. Shrub 5 feet.  
18. H. involucrata (Sbl. l. c. p. 691.) leaves ovate, acuminate, glandularly serrated, reticulately veined, hispid on both surfaces; cymes involucrated before flowering (involucrum caducus, 2-3-leaved), crowded; flowers discolored; corolla segments 8, nearly orbicular.  y. F. Native of Japan. Plant sultriformly, hardly a foot high.  

Var. a; corolla lilac. Gimbaisoo of the Japanese; cultivated near the town of Osaka.  

Var. β; corolla yellow. Kinbaissao of the Japanese.  

Involute-flowered Hydrangea. Shrub 1 foot.  
19. H. alternifolia (Sbl. l. c. p. 692.) leaves alternate; flowers cymose, polyandroous, discolored; corolla segments 2-6, of which are constantly ovate and acute.  y. F. Native of Japan, where it is called by the natives Kusasimoto-ke.  

Alternate-leaved Hydrangea. Shrub 1 foot.  
20. H. sitiscan (Sbl. l. c. p. 692.) leaves ovate, acuminate, acutely serrated, with the veins pubescent beneath; flowers cymose, discolored, double; corolla segments elliptic, of a fine rose-colour.  y. F. Native of Japan. Shrub 2 feet high. Cultivated about the town of Mikao, where it is called Sitiscan by the natives. Perhaps only a double flowering variety of H. Hortensia.  

Sitsitan Hydrangea. Shrub 2 to 4 feet.  

† Species natives of Japan, but hardly known.  

Long-leaved Hydrangea. Shrub.  
22. H. nizada (Sbl. ex flora, 1828, nov. 21.) leaves ovate, serrated, villous; petioles and peduncles hairy; umbels terminal, not radiating; stigmas 2-lobed.  y. F. Native of Japan. Viburnum hirtum, Thum. fl. jap. 124.  

Hay Hydrangea. Shrub.  
Cult. The hardy species, or those natives of North America, are dwarf shrubs, and therefore proper for the front of shrubbery.  

1. H. quercifolia does best against a south wall. Those species natives of Asia will require protection in winter, either by placing them in a frame or greenhouse. Cuttings of all the species root readily if planted under a hand-glass.  

2. H. Hortensia is in general cultivation for the sake of its showy flowers; the blue-flowered variety is in greatest request, which may be obtained by planting out the common pink variety in a bed of peat soil, and letting it remain there 2 or 3 years; for the longer it remains the deeper blue the flowers will become: the plants may then be potted before the buds begin to burst, and they will then flower in perfection, and the flowers will be of a beautiful blue colour.  


† Corn. Tri-Pentagynia. Calyx superior, 4-toothed, equal, deciduous. Stamens 3; filaments linear; anthers ovate, 2-celled, dehiscing longitudinally inside. Ovarian inferior, nearly globose, 3-celled, rarely 4-celled, many ovulate. Styles 3, rarely 4, thick, fleshy, at length divaricate; stigmas obtuse, oblique. Capsule nearly globose, crowned by the permanent calyx and styles, dehiscing between the styles, 3-celled, rarely 4-celled, many seeded; dissepiments entire, placentaefull. Seeds cylindrical.—Shrubs, with glabrous opposite serrated leaves, and involucreted cymes or corymbes of white flowers, with the habit of Hydrangea.  

1. H. peruviana (Ruiz et Pav. fl. per. 1. c.) leaves oval or ovate, acuminate or obtuse, coriaceous, serrated at the apex; corymbs terminal, many rayed, involucreted by 4 large deciduous bracts.  y. F. Native of Peru, on the mountains. Sarcostyles Peruviana, Presl, in reliq. Hort. 2. p. 54. t. 60.  

Peruvian Cornideia. Shrub.  
2. C. integrifolia (Hook. et Arn. in bot. misc. 3. p. 244.) leaves roundish-elliptic, glabrous, hardly acute at the base and apex; corymbs numerous, disposed in a terminal raceme, which much exceeds the leaves.  y. F. Native of Chili, about Valparaiso, and near Bustamente. Hydrangea scánden, Poepp. ex D. C. prod. 4. p. 666.  

Entire-leaved Cornideia. Shrub cl.  
3. C. serratifolia (Hook. et Arn. l. c.) leaves obovate-oblong, acute, obtuse at the base, serrated upwards; floral ones or rameal ones smaller, ovate, with a few denticulations; corymbs numerous, disposed in a terminal raceme, which hardly exceeds the leaves.  y. F. Native of Chili. Closely allied to the last species, but apparently distinct. Both, but especially the present, have several decussate, patent, concave, stiff bracteas, along the stalks of the corymbs.  

San-leaved Cornideia. Shrub.  
Cult. The culture and propagation of the species of Cornideia are the same as that recommended for the species of Hydrangea. They require to be protected in winter by placing them in a frame or greenhouse.  


Lin. sys. Decándria, Tri-Pentagynia. Tube of calyx adhering to the ovary: limb 5-toothed. Petals 5, rather fleshy, inserted in an epignous disk. Stamens 10; anthers oblong, erect, dehiscing at the sides. Styles 3-5, spreading: stigmas obtuse, adnate. Berry crowned by the teeth of the calyx, half 3-5-celled, many seeded; dissepiments incomplete, inflamed, fleshy, seminiferous.—A subshrub, with opposite, pectolate, ob-long-lanceolate, smoothish leaves, which are serrated from the middle to the apex; and panicled terminal cymes of flowers, with trifid branches.  

1. C. sylvatica (Reinv. l. c.) cymes nearly undivided, on short peduncles, disposed in a coarctate panicle.  y. S. Native of Java, on the mountains, where it is called by the natives Tisere-gil-gil. Flowers probably white.  

Var. β, paniculata (Blum. mss.) cymes branched, on long peduncles, disposed in an elongated panicle.  y. S. Native of Java. Perhaps distinct from the species.
Var. γ, corimbosæ (Blum. mss.) cymes branched, on long peduncles, disposed in somewhat fastigate corymb. Ἔ. S. Native of Java. Perhaps a proper species.

Wood Cianitis. Shrub 2 to 3 feet.

Cult. A mixture of loam, peat, and sand will suit these plants; and cuttings will root readily in the same kind of soil, under a hand-glass.

XVIII. ADAMIA (in honour of John Adam, some time Governor-General of India; a promoter of natural history). Wall. tent. fl. nep. p. 46. t. 36. D. C. prod. 4. p. 16.

Lin. Syst. Decândria. Pentagynia. Tube of calyx adnate to the ovarium; limb with 5 short teeth, having the recesses between the teeth broad and obtuse. Petals 5, alternating with the teeth of the calyx, surrounding the top of the ovary. Stanens 10. Styles 5, ending in rather clavate, somewhat 2-lobed stigmas. Berry crowned by the limb of the calyx, somewhat 5-celled, many seeded. Embryo terete, straight, in a fleshy albumen, with the radicle turned towards the hilum.—A smooth branched shrub. Leaves opposite, exstipulate, petiolate, oblong-lanceolate, serrated. Panicle corimbosse, terminal, much flowered. Flowers bluish. Berries blue. Perhaps not distinct from Cianitis.

1 A. cyanea (Wall. l. c.) Τ. G. Native of Nipaul, in rocky places, on mountains near the Great Valley, where it is called Bansook by the natives. Hook. bot. mag. t. 3046. Wall. pl. rar. asiat. 3. t. 215. Blue-berried Adama. Fl. June, July. Clt. 1829. Shrub 4 to 6 feet.

Cult. See Cianitis above for culture and propagation.


Lin. Syst. Decândria. Monogynia. Calyx 5-parted, hemispherical, distinct from the ovary: lobes ovate-deltoid, bluntish, equal. Petals oblong, acuminate, with a reflexed point (nearly as in umbelliferous plants) twice the length of the calyx, valvate in pistil ation. Stanens 10, hypogynous, surrounding the base of the ovary; filaments subulate, distinct; anthers ovate. Ovarium roundish, crowned by the short style and truncate stigma, 5-celled; cells many seeded.—A shrub, with opposite ovate petiolar sharply serrated leaves, and corymb of fleshy flowers. The shrub has the habit of Hydrangea, but differs in the ovary being distinct from the calyx, in the style being short and solitary, not 2, and in the fruit being 5-celled.

1 B. arguta (Gaud. l. c.) Τ. G. Native of the Sandwich Islands, at the altitude of from 1200 to 1500 feet above the level of the sea. A middle-sized tree.

Sharp-serrated-leaved Broussaisia. Tree.

Cult. See Cianitis above for culture and propagation.


Calyx with the tube adhering to the ovary (f. 55. F. h. f. 55. C. e.); limb 5-toothed (f. 55. F. c.), or entire (f. 55. G.-f.): lobes or teeth deciduous or permanent. Petals 5 (f. 57.-c. f. 59.-g.), inserted in the top of the tube of the calyx, and alternating with its lobes, either entire (f. 57.-c.), emarginate (f. 61.-b.), or 2-lobed, sometimes plain at the apex, but usually drawn out into a replicate or involute point (f. 61.-f. f. 63.-c. f. 55. C. i.), somewhat imbricate in aestivation, rarely valvate; the outer flowers of the umbel or ray of the umbel sometimes larger than the rest, the rest equal among themselves, rarely abortive. Stanens 5 (f. 55. C. b. &c.), alternating with the petals, and inserted along with them, and therefore opposite the calycine teeth or lobes, always distinct, replicate in aestivation (f. 59.-g. &c.); anthers ovate, 2-celled, somewhat didymous, opening by a double longitudinal chink. Ovarium inferior, 2-celled (f. 55. E. c. f. 55. D. d. &c.), (very rarely, and probably from abortion, 1-celled), adnate to the calyx; styles 2, distinct (f. 55. F. i. f. 55. G. i. f. 59. e. &c.), when young erect, but at length thickened at the base into stylopodium (f. 64.-a.), which covers the whole disk, forming a sort of crown to the fruit, diverging more or less, usually permanent, the outer one directed to the outside of the umbel, and the inner one tending to the centre. Fruit (called Diacchæa, Polache'a, and Cremocarp by many botanists) consisting of 2 carpelli (called mericarps because (f. 55. D. d. f. 55. C. h. &c.) they adhere to the calyx the half of their length, and therefore cannot be carpella or achenia in the strict sense of those terms), separable from a common axis (called a carpophore) to which (f. 56. G. a. f. 56. C. a. b. &c.) they adhere by their face (called a commissure); the fruit or carpocarp traversed by 10 elevated primary ridges, of which the 5 that represent the middle of the sepals are called carinal, because they are drawn out into calycine teeth at the apex: the other 5, alternating with the first-named are called natural, because they indicate the sutures where the divisions of the calyx are joined, and therefore tend to the recesses between the calycine teeth; besides these there are others which are apparent in some called secondary, because they alternate with the 10 primary nerves, and therefore indicate the sides of the divisions of the calyx: all the sutural, carinal, and secondary ribs are either fliform, winged, or crested; these ridges or nerves are separated by channels or furrows called valleculae, below which, but usually in the channels, are placed in the substance of the pericarp, certain linear receptacles of coloured oily matter, called vitices, which are directed from the apex to the base: they are solitary, twin, or numerous, rarely wanting, and sometimes they are inclosed in a proper membrane, which is probably a true pericarp. Seeds solitary in each carpel, hanging from the top of the axis or carpophore, inclosed in a proper membrane, the spermiderm, which is but rarely separable from the pericarp. Albumen large, fleshy, or rather horny, more or less convex on the out-
side. Embryo minute, hanging from the top of the carpopithe, and therefore the radicle is superior; cotyledons 2, oblong, changing into seminal leaves through germination.—Herbs or shrubs. Roots various, but often fusiform. Stems cylindrical or angular, simple or branched, annual or perennial, with the bark or skin usually full of aromatic resinous gum; medulla in some, as in Čerula, large, with medullary fibres in its substance, similar to the stems of monocotyledonous plants. Leaves alternate, very rarely opposite, except the seminal ones, usually divided into various segments; petioles usually sheathing at the base; in some, as in the genus Euphorbium, the petioles are changed into phyllodia, as in the section of Actaea called Phylodineae. Flowers umbellate, white, yellow, pink, or blue, often with either the styles or stamens abortive, monoecious, dioecious, or polygammon, and some of them sterile. Umbels usually perfect, both general and partial, in both the rays are numerous, the general umbel usually surrounded by an involucrem, and the partial ones by an involucler.

FIG. 54.

Umbelliferæ hardly differs from Araliaceæ, the next order. With Saxifragaceæ it agrees in habit, if Hydrocotyle is compared with Chrysosplenium, and if the sheathing and divided leaves of the two orders are considered. To Geraniaceæ, De Candolle remarks, that they are allied in consequence of the cohesion of the carpella around a woody axis, and of the umbellate flowers, which grow opposite the leaves, and also because the affinity of Geraniaceæ to Vitis, and of the latter to Araliaceæ, is not to be doubted. The arrangement of this order has only within a few years arrived at any very definite state; the characters upon which genera and tribes could be formed, were for a long while unsettled; it is, however, now generally admitted, that the number and development of the ribs of the fruit, the presence or absence of the reservoirs called vittæ, and the form of the albumen, are leading peculiarities, which require to be attended to. The plants are chiefly extra-tropical, inhabiting groves, thickets, plains, marshes, and waste places.

The properties of this order require to be considered under two points of view; firstly, those of the vegetation; and secondly those of the fructification. The character of the former generally is suspicious, and often poisonous in a high degree; as in the case of hemlock, foal's-parsley, water-hemlock, and others, which are deadly poison. Nevertheless, the blanched petioles and stems of celery, the leaves of parsley and samphire, the roots of skirret, the carrot, the parsnip, the arracacha, and the tubers of Anethum pimpinelloides, and Bànium bulbocâ-
tanum, are wholesome articles of food. The fruit, vulgarly called the seeds, is in no case dangerous, and is usually a warm and agreeable aromatic, as caraway, coriander, dill, anise, &c.

From the stem, when wounded, sometimes flows a stimulant, tonic, aromatic, gum-resinous concretion, of much use in medicine; as opopanax, which is produced from Opúpanax Chiróinum in the Levant, and asafetida from the Čerula of that name in Persia. Gum ammoniac is obtained from Dérêma Ammoniacum. It is a gum resin of a pale yellow colour, having a faint, but not unpleasant, smell, with a bitter nauseous taste. Internally applied, it is a valuable deobstuent, and expectorant. It is said by Dr. Paris to be, in combination with rhubarb, a useful medicine in mesenteric affections, by correcting viscid secretions. (Ainslie i. p. 160.) The substance called galbanum is produced by Gálbanum officinale, a plant of this order. It is a stimulant of the intestinal canal and uterus, and is found to allay that nervous irritability, which often accompanies hystera. (Ainslie i. p. 143.) Eðhüs cynápiun has been found by Professor Ficinus, of Dresden, to contain a peculiar alkali, which he calls Cynapiun. (Turner, p. 654.) The fruit of Ligásticum Ajaván of Roxb. the Pcychótis Ajavan of D. C. is prescribed in India in diseases of horses and cows. (Ainslie i. p. 38.) The Prángos palbária is a valuable fodder-plant in Thibet.

Synopsis of the genera.

Suborder I. Orthospermeæ. Albumen flat or flattish inside, neither involute nor convolute.

§ 1. Umbels simple or imperfect. Fruit destitute of vittæ.

Tribe I.

Hydrocotylea. Fruit contracted from the sides; mericarps convex or acute on the back: with the 5 primary ribs at length obsolete: lateral ones margining or in the commissure, which is flat; intermediate usually more than carinal. Petals entire.

1 Hydrocotyle. Margin of calyx obsolete; and the tube rather compressed. Petals ovate, with a straight point. Fruit biciculate. Mericarps with 5 filiform ribs: carinal and lateral ones often obsolete: the 2 intermediate ones joined.—Involucrem few-leaved.

2 Crañtza. Tube of calyx subglobose; limb very short, hardly any. Petals roundish, obtuse. Fruit roundish. Mericarp unequal, with 3-5 filiform ribs. Vittæ 1 in each furrow and 2 in the commissure.—Involucrem 5-6-leaved.

3 Dimétópai. Teeth of calyx obsolete. Petals oval-oblong. Styles short. Fruit didymous. Mericarps somewhat contracted at the commissure, unequal, one maculated with tubercles, and the other echinate with conical prickles.—Involucrem of 5 linear leaves.

5. Microple'u'ra. Margin of calyx obsolete. Petals equal, acute. Fruit deeply 2-lobed at the base, and emarginate at the apex; mericarps obliquely ovate, 7-ribbed; ribs curvilinear, ventricose at the base, marginal 2 straight. Commissure narrow.

6. Did'fusus. Margin of calyx obsolete. Petals oval, bluntish, imbricate in aestivation (f. 57. c). Fruit didymous, emarginate at the base. Mericarps rough from pilose stripes, 5-ribbed: 2 middle ribs approximating the commissure.—Involucrem of many leaves which are concretes at the base (f. 57. a).


8. Astra'tricha. Margin of calyx hardly 5-toothed. Petals oval, acute, permanent (f. 58. b), velvety on the outside from stellate down. Styles thickened at the base (f. 58. c). Mericarps contracted at the commissure, having 3 primary dorsal ribs, and 2 acute nearly obsolete marginalizing ones, and 4 secondary ones. Commissure furnished with 2 vitre, which are covered by a spongy pellicle, but none in the furrows.—Involucrum of a few linear leaves.


10. Böwe'sia. Margin of calyx 5-toothed; tube compressedly somewhat tetragonal. Petals elliptic, entire, acute. Fruit ovate, much contracted at the raphis, turgid, somewhat tetragonal, flattened on both sides at the back. Mericarps marked with an oval impression on the back, having 5 obsolete ribs: 2 lateral ribs flat, seated in the commissure.


13. Pectophy'tum. Margin of calyx entire. Petals unequal, with an acute inflexed point. Fruit ovate-elliptic; mericarps rather convex on the back, semi-oval, having 5 filiform ribs; commissure flatish.—Flowers in crowded fascicles at the tops of the branches, solitary in the axils of the bracteas.

Tribe II.

Mulíneæ. Mericarps contracted at the commissure, flat or flatish on the back, without vitre, hence the fruit is square or parallelly bicusitate. Petals entire.

14. Bôlax. Margin of calyx entire. Petals oval. Fruit tetragonal; mericarps with 5 nerve-formed ribs, 1 dorsal, and the 2 middle ones form the corners of the angles of the fruit, and the 2 inner ones are filiform; commissure very narrow.—Involucrem of 4 leaves, equal in length to the pedicels.

15. Muli'num. Margin of calyx 5-toothed, permanent. Petals oval-oblong, acute. Fruit 4-winged; mericarps furnished with 5 ribs: middle one dorsal: 2 lateral ones nerve-formed: 2 intermediate ones expanded into lateral ample wings.—Involucrem of many leaves, shorter than the pedicels.

16. Lare'tia. Margin of calyx 5-toothed. Petals ovate, entire. Fruit elliptic, square, flatly compressed from the back: mericarps lenticular, with dorsal ribs and 2 lateral marginal ones, destitute of vitre. Seed flat.

17. Dru'sa. Margin of calyx entire. Petals oval. Mericarps furnished with 5 ribs: the dorsal one and the 2 inner ones linear and hardly prominent: but the 2 intermediate ones are drawn out into marginal wings, which are repandly sinuated, having the angles expanding in a stellate tuft of uncinate spines.—Involucrem wanting.


20. Spana'nthe. Margin of calyx 5-toothed. Petals elliptic, acutish, with a straight point. Fruit ovate, much compressed at the rachis; mericarps having 5 slender equal ribs: 3 intermediate ones dorsal: and the 2 lateral ones seated in the flat commissure.—Umbels rather compound. Involucrem of many leaves.

21. Homalo'ca'rus. Margin of calyx 5-toothed; teeth subulate. Petals ovate, concave. Fruit roundish-ovate; mericarps having 5 filiform ribs, hidden in the substance of the pericarp, 1 dorsal: 2 lateral ones near the rachis: 2 middle ones forming the angles.

22. Pozo'la. Margin of calyx 5-toothed, permanent. Fruit prismatic, tetragonal, 5-ribbed, emarginate at the apex; mericarps concave and channelled on the back; ribs lateral, dense, straight.—Involucrem crenately lobed, obliquely toothed.

23. Astéris'chum. Calyx 5-toothed, permanent; teeth ovate. Petals emarginate, with an inflexed point and a callous recess. Fruit compressed, tetragonally prismatic; mericarps with 5 ribs: the 2 intermediate ribs expanded into wings: the carinal one and the 2 placed near the raphis stripe-formed: commissure very narrow.—Involucrem of many leaves.

Tribe III.

Sanicu'lee. Fruit ovate-globose. Mericarps destitute of vitre, with 5 primary ribs; secondary ribs wanting or obliterated by being covered with scales. Petals erect, emarginate, from being bent back from the middle by a point.
24 Actinotus. Tube of calyx contracted at the apex; limb 5-lobed: lobes oval-oblong. Petals wanting. Styles thickened and villous at the base. Fruit ovate, crowned by the lobes of the calyx, villous, 5-striped.—Involucrum of many radiating leaves, which are longer than the flowers.

25 Petaonia. Flowers dioecious, having the calyces different in the distinct sexes. Styles filiform. Fruit ovate, compressed, 8-nerved, vacant inside, 1-seeded.—Umbelles 5-flowered: central flower hermaphrodite, sessile; lateral ones male, pedicellate; pedicles rather concrete at the base, with the calyx of the female flower.

26 Sanicula. Tube of calyx echinated; lobes foliaceous (f. 59. c.), permanent. Petals connivent, obovate, emarginate, with an inflexed point (f. 59. g.). Fruit nearly globose, echinated; carpophore not distinct.—Umbels compound. Leaves of involucrum few, divided; of the involucrel numeros, linear.

27 Hacquetia. Tube of calyx 10-ribbed; lobes foliaceous, permanent. Petals obovate, emarginate, with a bent in point. Fruit contracted from the sides; mericarps gibbously convex; ribs 5, filiform, with a deep channel on the inside.—Involucrum of 5-6 obovate toothed leaves, which are longer than the umbel.

28 Astrantia. Tube of calyx 10-ribbed, tuberculately plicate; lobes 5, foliaceous. Petals erect, connivent, oblong-ovate, with an inflected point. Fruit rather compressed from the back; mericarps with 5 elevated, obtuse, plicately toothed, inflated ribs, inclosing in the cavity a smaller stiltar rib. Carpophore not distinct.—Involucrum variable: involucel of many leaflets.

29 Aepidea. Tube of calyx minutely tubercular. Petals inflexed. Mericarps without ribs, and without vittae. Carpophore adnate the whole length of the seeds.—Habit of Eryngium, but the umbels are like those of Astrantia.


31 Eryngium. Tube of calyx rough from scales or vesicles; lobes foliaceous. Petals erect, connivent, oblong-ovate, emarginate, with an inflected point. Fruit obovate, scaly, or tubercular; mericarps semi-terete, without ribs, and without vittae; carpophore adnate its whole length to the seeds.—Flowers crowded into dense heads; the lower bractees forming an involucrum to them.

32 Actinaanthus. Flowers monoecious: female ones capitulate: male ones in capitule umbels, with the receptacle destitute of pales. Teeth of calyx permanent. Petals oblong, complicated at the apex, and rather cirrhose. Fruit compressed from the sides; mericarps with 5 alternate, stronger, sutural ribs; vittae 1 in each furrow, and 2 in the commissure. Carpophore adnate.—Involucra wanting; involucels of many leaves.

§ 2. Umbels compound or perfect. Vittae on the fruit variable, rarely wanting.

* Fruit having only primary ribs present.

Tribe IV.

Ammi. Fruit compressed from the sides or didymous; mericarps with 5 filiform ribs, which at length become a little winged; lateral ones margining, all equal. Seeds terete or gibbously convex, flattish in front.

33 Rumia. Margin of calyx 5-toothed. Petals ovate, entire, with a short, coarctate, incurved point. Fruit roundish or ovate, plicately wrinkled; mericarps solid, with 5 thick, very obtuse, twisted plicate ribs, covering the furrows, which are ornamented with plicate tubercules, and furnished with 1 vitta each. Carpophore bipartite.—Involucrum wanting or few-leaved; involucels of 3-8 leaves. Flowers yellow.

34 Cicutaria. Margin of calyx 5-toothed, foliaceous. Petals obcordate, with an inflexed point. Fruit roundish, contracted from the sides; mericarps with 5 flatish ribs, having the furrows between the ribs furnished with 1 vitta each, and the commissure 2 vittae; vittae filling the furrows, a little more elevated than the ribs, all concealed under a loose membrane. Carpophore bipartite.—Involucrum wanting, or few leaved; involucels of many leaves.

35 Zizia. Margin of calyx obsolete, or with 5 very short teeth. Petals elliptic, tapering into a long inflexed acumen. Fruit contracted from the sides, roundish or oval; ribs filiform, rather prominent; furrows furnished with 1 vitta each, and the commissure with 2; carpophore bipartite.—Involucrum wanting; involucel of few leaves, variable. Flowers yellow, rarely white or dark purple.

36 Pentakrypta. Calyx unknown. Petals equal, lanceolate, with an inflexed point. Fruit oblong-elliptic; the 3 dorsal ribs elevated, acute; furrows furnished with 1 vitta each. Albumen with 5 roundish angles. Flowers polygamous, dark purple.

37 Apium. Margin of calyx obsolete. Petals roundish, entire. Stylopodium depressed. Fruit roundish, contracted from the sides; ribs filiform; furrows furnished with 1 vitta; outer ones with 2-3 vittae. Carpophore undivided.—Involucrum and involucel wanting. Flowers greenish white.

38 Petroselium. Margin of calyx obsolete. Petals roundish, incurved, hardly emarginate, with an inflexed point at the apex. Stylopodium short, conical, suberemulose. Styles diverging. Fruit ovate, contracted from the sides; ribs filiform; furrows furnished with 1 vitta; outer ones with 2-3 vittae. Carpophore bipartite.—Involucrum few-leaved, and the involucel of many leaves. Flowers white or greenish.

39 Weydania. Margin of calyx obsolete (f. 60. a.). Petals ovate-lanceolate, entire, with an incurved point (f. 60. c.). Fruit ovate, crowned by the short stylopodium and reflexed styles (f. 60. b.). Mericarps somewhat semi-terete, with contracted margins; ribs filiform, bluntish; furrows broad, furnished with 1 vitta each, and the commissure with 2.—Involucrum wanting, or of 1 leaf; involucel of many leaves. Flowers white.

40 Trias. Margin of calyx obsolete. Flowers usually dioecious from abortion. Petals of the male flowers lanceolate,
ending in an involute point; of the hermaphrodite flowers ovate, with a short inflexed point. Fruit ovate; ribs filiform, rather prominent; furrows without vittæ, or furnished with 1 vitta each. Carpophore flat, bifurcate from the base.—Umbels disposed in a panicle or thyrse, without any involucra; involucels usually wanting.

41 Helioscladum. Margin of calyx 5-toothed, or obsolete. Petals ovate, entire, with a straight or inflexed point. Styles short. Fruit ovate or oblong; ribs filiform, rather prominent; furrows furnished with 1 vitta each. Carpophore entire. Involucra variable in the different sections.

42 Discopleuræ. Teeth of calyx 5, subulate, permanent (f. 61. e). Petals ovate, emarginate (f. 61. b.), with a replicate point (f. 61. f.). Fruit ovate (f. 61. c). Three dorsal ribs filiform, exerted, and acutish: 2 lateral ones somewhat con-crete with the thick accessory margin, forming a disk on both sides of the fruit; furrows furnished with 1 vitta each. Carpophore bifid.—Involucels of a few linear setaceous leaflets (f. 61. g.).

43 Leptocaulis. Margin of calyx obsolete (f. 62. a.). Petals elliptic, entire. Styles permanent. Fruit ovate (f. 62. a.); ribs hardly prominent; furrows furnished with 1 vitta. Carpophore bifid at the very apex.—Involucra wanting; involucels short, few-leaved.

44 Pycho'tis. Margin of calyx 5-toothed. Petals obovate, bifidly emarginate, furnished by a transverse plait in the middle, which emits a little segment. Fruit ovate or oblong; ribs filiform; furrows furnished with 1 vitta each. Carpophore bifid.—Involucrum variable; involucels of many leaves.

45 Falca'ria. Margin of calyx 5-toothed; tube wanting in the sterile flowers, but cylindrical in the fertile ones. Petals obovate, curved, having a broad emarginate recess, with a re-flexed point. Styles divaricate. Fruit oblong; ribs filiform; carpophore distinct, bifid; furrows furnished with 1 filiform vitta each.—Involucrum of many leaves. Involucel somewhat di-midiate from the inner leaflets being small on one side.

46 St'son. Margin of calyx obsolete. Petals roundish, curved, deeply emarginate, with an inflexed point. Styles very short. Fruit ovate; ribs filiform; vittæ 1 in each furrow, short, rather club-shaped; carpophore bipartite.—Involucra and involucels of few leaves.

47 Schu'lia. Margin of calyx obsolete. Petals elliptic, with a short inflexed point. Stylopodium conical. Styles erect, somewhat capitata at the apex, permanent. Fruit cylindrically prismatic; ribs filiform; vittæ 1 in each furrow. Carpophore undivided.—Involucra and involucels of many multifid leaves.

48 A'mi. Margin of calyx obsolete. Petals obovate, with an inflexed point, marginately 2-lobed; lobes unequal, irregular; those on the outside of the umbels the largest. Fruit ovate-oblong; ribs filiform; vittæ 1 in each furrow. Carpophore distinct, 2-parted.—Involucra of many trifid or pinnatifid leaves; involucels of many leaves.

49 Ægopo'dium. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point. Stylopodium distinct, conical, terminated by the long deflexed styles. Fruit ovate; ribs filiform; furrows without vittæ; carpophore setaceous, forked at the apex.—Involucra and involucels wanting.

50 Ca'rum. Margin of calyx obsolete. Petals regular, obovate, emarginate, with an inflexed point. Stylopodium depressed; styles deflexed. Fruit ovate or oblong, contracted from the sides; ribs filiform; vittæ 1 in each furrow, and 2 in the commissure, which is flat; carpophore distinct, forked at the apex.—Involucra and involucels variable in the different species.

51 Chamaescladum. Margin of calyx toothed a little. Petals ovate-lanceolate, quite entire, with an oblique or inflexed point. Stylopodium depressed; styles at length deflexed. Fruit ovate-oblong; mericarps solid; ribs filiform; vittæ 3-4 in each furrow, and 4-6 in the commissure; carpophore adnate, bifid at the apex.—Involucra and involucels of many leaves.

52 Bu'ium. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point. Fruit linear-oblong; ribs filiform, obtuse; vittæ 2-3 in each furrow, and 2 in the commissure, all superficial. Carpophore distinct, bifid.—Involucra variable in the different species; involucels of few leaves.

53 Cryptole'a'nia. Margin of calyx obsolete. Petals obovate, nearly entire, narrowed into an inflexed point. Fruit contracted from the sides, linear-oblong, crowned by the short stylo-podium and straight styles; ribs filiform, obtuse: 2 lateral ones placed in front of the margins; vittæ numerous in the furrows, covered by a corky pericarp, and are not visible, unless when the pericarps are cut transversely.—Involucra wanting; involucels few-leaved.

54 Pimpine'lla. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point. Fruit ovate, contracted from the sides, linear-oblong, crowned by the short stylo-podium and styles, which are reflexed and somewhat capitata at the apex; ribs filiform; vittæ numerous on the furrows; carpophore distinct, bifid.—Involucra and involucels wanting.

55 St'um. Margin of calyx 5-toothed, but at length obsolete. Petals obovate, emarginate, with an inflexed point. Stylopo-dium pulvinate, with a depressed margin. Styles divergingly reflexed, somewhat capitata at the apex. Fruit compressed or contracted from the sides, crowned by the stylopodium and styles; ribs filiform, blunter; vittæ many, both in the furrows and commissure. Carpophore bipartite, having the mericarps adhering to its parts.—Involucra of many leaves, rarely of 1 leaf; involucels of many leaves.

56 Bu'lle'rum. Margin of calyx obsolete. Petals roundish, entire, closely involute, ending in a broad retuse segment. Fruit crowned by the depressed stylopodium; ribs winged, acute, filiform, or obsolete; furrows either with or without vittæ, smooth or granular.—Involucra variable in the different species. Flowers white, yellow, and greenish.

57 Heteromó'phæa. Margin of calyx 5-toothed. Petals roundish, entire, closely involute, ending in a broad retuse point. Fruit obovately pear-shaped, 3 winged; mericarps of 2 forms: outer one 2-winged: inner one 3-winged; the wings running from the teeth of the calyx; vittæ 1 in each furrow, and 2 in
the commissure.—A shrub with yellow flowers and ternate leaves. Involucra and involucels of many short leaves.

**Tribe V.**

**Seeliseae.** *Fruit terete, or nearly so, with a transverse section; or the mericarps are rather compressed on the back, with 5 filiform or winged ribs: the lateral ones marking, equal to the others, or broader. Seeds teretely convex on the back. Raphe marginal or submarginal.*

58 *Lichtenstei*nia. Margin of calyx acutely 5-toothed. Petals elliptic, with a long, inflexed point. Fruit nearly terete, crowned by the conical stylodium and short styles; ribs filiform, equal; vittæ large solitary under the ribs, but none in the furrows nor commissure.—Involucra and involucels of many short leaves. Flowers yellow.

59 *Ortia.* Margin of calyx obsolete. Petals equal, with an inflexed subulate point. Styles arched, capitate at the apex. Fruit oblong, rather compressed at the commissure; ribs membranous.—Involucra and involucels none. Flowers polygamous.

60 *Cnansethia.* Margin of calyx 5-toothed, permanent. Petals obovate, emarginate, with an inflexed point. Stylodium conical. Fruit cylindrically ovate, crowned by the long erect styles; ribs rather convex, obtuse, marginalizing ones rather the broadest; vittæ 1 in each furrow; carpophore indistinct.—Involucra variable in the different species, sometimes wanting; involucels of many leaves.

61 *Annesorhi*za. Margin of calyx 5-toothed, permanent. Petals elliptic, with an inflexed point. Fruit primitively quadrangular, crowned by the calyx and reflexed styles; mericarps of 2 forms, one 3-winged, and the other 4-winged from the ribs; vittæ 1 in each furrow and 2 in the commissure. Carpophore bipartite.—Involucra and involucels of many leaves.

62 *Scieroscia*gium. Calycine teeth 5, conical, permanent (f. 56. F. h.). Petals obcordate, with an inflexed point (f. 56. F. b.), which is bi or tridentate at the apex. Stylodium conical; styles filiform (f. 56. F. e.). Fruit ovate-globose, solid (f. 56. F. g. h.); ribs much elevated, bluntest, equal; vittæ 1 in each furrow and 2 in the commissure; carpophore distinct, undivided (f. 56. F. k.).—Involucra almost wanting; involucels of 5-7 leaves.

63 *Dasyloma.* Margin of calyx obsolete. Petals unknown. Stylodium depressed; styles short. Fruit ovate; mericarps not separating at maturity; ribs corky, cellular: 3 dorsal ones small; 2 lateral ones large and obtuse; furrows narrow, and furnished with 1 vitta each, but the commissure is flat, and furnished with 2; carpophore indistinct.—Involucra and involucels wanting.

64 *Cynoscia*gium. Calycine teeth 5 (f. 63. c.), subulate, permanent. Petals obovate, or nearly elliptic, entire, with an inflexed point (f. 63. c.). Stylodium conical; styles short, reflexed (f. 63. d.). Fruit oval-oblong or ovate (f. 63. b.), tapering at the apex; ribs thick, corky; vittæ 1 in each furrow, and 2 in the commissure.—Involucra and involucels of many leaves (f. 63. f. g.).

65 *Aethusa.* Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point; outer petals radiating. Fruit ovate-globose; ribs elevated, thick, acutely keeled: lateral ones rather the broadest; vittæ 1 in each furrow, and 2 arched ones in the commissure; carpophore bipartite.—Involucrum wanting or of 1 leaf; involucels of 1-3-5 leaflets, on one side of the umbellule.

66 *Fennelulum.* Margin of calyx tumid, obsolete. Petals roundish, entire, involute, with a rather quadrate retuse point; ribs rather prominent, bluntly keeled: lateral ones rather the broadest; vittæ 1 in each furrow, and 2 in the commissure.—Involucra and involucels wanting, or nearly so. Flowers yellow.

67 *Kundmania.* Margin of calyx 5-toothed. Petals roundish, entire, involute, with a broad retuse point. Stylodium conical. Fruit terete, 10-furrowed; mericarps with 5 filiform, obtuse, equal ribs; vittæ many, both in the furrows and commissure; carpophore undivided.—Involucra and involucels of many filiform reflexed leaves.

68 *Deverra.* Margin of calyx obsolete. Petals ovate, with an inflexed acumen. Styles short. Fruit ovate or roundish, hispid from scales or hairs; mericarps semi-terete, with obsolete ribs; vittæ 1 in each furrow, and 2 in the commissure. Carpophore bipartite.—An aromatic almost leafless shrub.—Involucra of 4-6 leaves; involucels of 4-6 ovate-lanceolate leaves.

69 *Soranthus.* Margin of calyx obsolescently toothed. Petals broadly ovate, acuminate, permanent, with an inflexed point. Fruit a little compressed from the back; crowned by the divericate styles; mericarps with 5, hardly prominent ribs; vittæ 1 in each furrow, and 4 in the commissure. Carpophore bipartite.—Involucra nearly wanting; involucels of 5-7 spreadingly reflexed leaves.

70 *Seelie.* Margin of calyx 5-toothed; teeth short, thickish. Petals obovate, emarginate or nearly entire, with an inflexed point (f. 55. E. i.). Fruit (f. 55. E. d. F. 55. D. a. b.) oval or oblong, crowned by the reflexed styles (f. 55. E. b.); ribs filiform or elevated, rather prominent, thick, corky: lateral ones a little broader than the rest; vittæ 1 in each furrow, sometimes 2 in the outer furrows, but always 2 or 4 in the commissure.—Involucra almost wanting; involucels of many leaves.

**FIG. 55.**
71 Libanotis. This genus agrees in every respect with Sêzu, but differs in the lobes of the calyx being slender, subulate, elongated (f. 55. G. c.), and coloured, deciduous.—Involucre and involucels of many leaves.

72 Cenolophium. Margin of calyx obsolete. Petals oblong, emarginate (f. 55. G. b.), with an inflexed point (f. 55. G. L.); ribs equal, sharp, a little winged, hollow inside; vittae 1 in each furrow, and 2 in the commissure.—Involucre wanting, or of 1 leaf; involucels of many leaves (f. 55. G. a.).

73 Cni'dium. Differs from Cenolophium in the ribs of the fruit being furnished with membranous wings.—Involuca variable in the different species; involucels of many leaves.

74 Petúta. This genus differs from Sêzu and Libanotis by the margin of the calyx being entire; and from Cni'dium in the petals not being emarginate, and in the ribs of the fruit not being winged.

75 Endré'ssia. This genus differs from all the rest in the present tribe, in the fruit being compressed from the sides, in the ribs being obtuse and filiform, not winged; vittae 6 in the commissure, and 3 or 4 in the furrows.

76 Thasphium. Margin of calyx 5-toothed. Petals elliptic, with a long inflexed acumens. Fruit nearly elliptic; ribs winged; vittae 1 in each furrow, and 2 in the commissure.—Involuca wanting; involucels of 3 leaves on one side.

77 Tsóchisán'thes. Margin of calyx 5-toothed. Petals on long claws, spatulate, obvate, with a triangular inflexed segment; ribs sharp, rather winged, equal; vittae 3-4 in each furrow, and 8 in the commissure. Carpophore bipartite.—Involuca wanting, or of 1 leaf; involucels of 2-5 leaves.

78 Athama'ntha. Margin of calyx 5-toothed. Petals obvate or entire: with a very short, inflexed, unguiculated point; graft attenuated into a neck; ribs filiform, wingless, equal; vittae 2-3 in each furrow.—Involuca few-leaved; involucels of many leaves.

79 Lio'vesticum. Margin of calyx 5-toothed or obsolete. Petals obvate, acute, emarginate, with an inflexed point; ribs short, rather winged, equal; vittae many, both in the furrows and commissure.—Involuca variable; involucels many-leaved.

80 Sia'fus. Margin of calyx obsolete. Petals obvate-oblong, entire, or rather emarginate, with an inflexed point; ribs sharp, rather winged, equal; vittae many in each furrow, and so close together as to appear one; commissure furnished with 4-6 vittae.—Involuca wanting or of few leaves; involucels of many leaves. Flowers cream-coloured or greenish.

81 Wallro'thia. Calycine teeth 5, ovate-lanceolate, acute (f. 56. A. b.). Petals elliptic, entire, acute at both ends (f. 56. A. d.). Mericarps with rather prominent, equal ribs; vittae numerous in the furrows.—Involuca of 1-3 unequal leaves; involucels of 5-8 unequal leaves.

82 Me'tum. Margin of calyx obsolete. Petals entire, elliptic, acute at both ends. Mericarps with rather prominent, equal, keeled ribs; vittae many in each furrow, and 6-8 in the commissure.—Involuca wanting; involucels of many leaves.

83 Ga'ya. Margin of calyx obsolete. Petals obvate, more or less emarginate, with a broad inflexed point. Fruit oval, a little compressed; ribs elongated, wing-formed, contiguous at the base, at equal distances, obtuse; vittae none. Carpophore bipartite.—Involuca few-leaved.

84 Conioselín. Margin of calyx obsolete. Petals obvate or obovate, with an inflexed point. Styles at length reflexed. Fruit compressed or convex from the back; ribs winged: lateral ones twice the breadth of the rest; vittae 3 in each furrow, but in the dorsal furrows sometimes only 2; and 4-8 unequal ones in the commissure; carpophore bipartite.—Involuca wanting, or of few leaves; involucels of 3-7 linear-subulate leaves.

85 Chês'hum. Margin of calyx obsolete. Petals roundish, entire, involute, with an obvate point. Mericarps with 5 elevated, sharp, somewhat winged ribs: the lateral ribs a little broader than the rest; pericarp spongy from large cells.—Involuca and involucels of many leaves. Seed semi-terete, constituting a distinct nucleus, covered with copious vittae.

TRIBE VI.

Angélicée. Fruit compressed from the back, girded by 2 wings on each side, from the raphe being central, or nearly so; mericarps furnished with 5 ribs: the 3 dorsal ribs filiform or winged: and the 2 lateral ones always expanded into wings, and broader than the dorsal ones. Seed rather convex on the back, and flattish in front.

86 Le'ésticum. Margin of calyx entire. Petals incurved, roundish, entire, with a short point. Mericarps with 5 wings: wings of the lateral ribs the broadest; vittae 1 in each furrow, and 2-4 in the commissure. Carpophore bipartite.—Involuca and involucels of many leaves.

87 Selín. Margin of calyx obsolete. Petals obvate, emarginate. Mericarps with 5 membranous wings: the wings of the lateral ribs twice the breadth of the rest; vittae 1 in each furrow, but in the outer ones usually 2, and always 2 in the commissure. Carpophore bipartite.—Involuca of few leaves; involucels of many leaves.

88 Oste'éricum. Calyx 5-toothed; teeth broad. Petals unguiculate, obvate, emarginate, with an inflexed point. Mericarps with 5 ribs: the 3 dorsal ones elevated and filiform: the 2 lateral ones dilated into wings, much broader than the rest; vittae 1 in each furrow. Carpophore bipartite.—Involucra of few leaves; involucels of many leaves.

89 Angélica. Margin of calyx obsolete. Petals lanceolate, entire, with a straight or incurved point. Mericarps with 5 ribs: the 3 dorsal ones filiform and elevated: and the 2 lateral ones dilated into membranous wings, which are broader than the rest; vittae 1 in each furrow. Carpophore bipartite.—Involuca of few leaves; involucels of many leaves.

90 Archangé'lica. Margin of calyx with 5 short teeth. Petals elliptic, entire, with an incurved point. Mericarps with 5 thickish, keeled ribs: the 3 dorsal ones elevated: and the 2 lateral ones dilated into wings. Seed not adhering to its covering, but constituting a free nucleus, covered all over with copious vittae. Carpophore bipartite.—Involuca nearly wanting; involucels of many leaves, unilateral.

TRIBE VII.

Peuced'aa. Fruit compressed from the back, or lenticularly
compressed, girded by a smooth, winged, flattened, or rather convex, dilated, entire margin. Mericarps with 5 filiform ribs, rarely winged; lateral ribs contiguous to the dilated margin, or lost in it. Raphe marginal, hence the fruit is only furnished with 1 wing on each side, not with 2 wings, as in the last tribe, where the raphe is central. Seed flattened, or rather convex on the back.

91 Opópanax. Margin of calyx obsolete. Petals roundish, entire, involute, with an acutus point. Stylodopodium broad, thick; styles very short; mericarps with 3 dorsal, filiform, very slender ribs: the 2 lateral ones wanting, or not distinct from the margin; vittae 3 in each furrow, and 6-10 in the comissure. Seed flat. —Involucra and involucels of many leaves. Flowers yellow.

92 Fé'rule. Margin of calyx with 5 short teeth. Petals ovate, entire, with an ascending or incurved point. Fruit girded by a dilated flat margin; mericarps with 3 dorsal filiform ribs: the 2 lateral ones very obsolete, or not distinct from the dilated margin; vittae 3 or more in the dorsal furrows, and 4 or more in the comissure. Seed flat. Carpophore bipartite. —Involucra and involucels variable. Flowers yellow.

93 Dore'ma. The large, cup-shaped, epigynous disk, and the solitary vitte in the furrows of the fruit, distinguish this genus from Férule and Opópanax. The flowers being completely sessile is also a remarkable character.

94 Erosy'raph. Calyx bluntly 5-toothed. Petals ovate, entire, with a short, incurved point (f. 56. E. f.). Fruit compressed (f. 56. E. k.) from the back, girded by a thickish margin: the 3 dorsal ribs filiform: and the 2 lateral ones running into the thickish margin, which is spongy inside; furrows broad, 2-3-striped, bearing 2-3 vittae in each; and the comissure is without vittae, but marked with a middle nerve and 2 marginal ones, rather hollow and tomentose between the nerves. Seed flatish. —Involucra and involucels wanting. Flowers yellow.

95 Pal'mía. Margin of calyx obsolete. Petals elliptic, with an acute inflexed point. Fruit oblong or oval. Mericarps compressed from the back: with 5 filiform, bluntish ribs: 2 marginal ones a little broader than the rest; vittae 3 in each furrow, and 2 broad ones in the comissure. Seed oblong, free, striped. —Involucrum few-leaved or wanting. Flowers cream-coloured.

96 Peucéd'ànum. Margin of calyx 5-toothed. Petals obovate, emarginate, or entire, with an inflexed point. Fruit girded by a flat margin; the 3 dorsal ribs filiform: and the 2 lateral ones more obsolete, contiguous to the dilated margin; vittae in each furrow usually 1, and in the comissure 2. Carpophore bipartite. Seed flat in front. —Involucra variable in the different species; involucels of many leaves.

97 Impé ratsiá. All as in Peucédànum, but the margin of the calyx is obsolete. —Involucra wanting; involucels of few leaves.

98 Call'sace. Margin of calyx rather 5-toothed, or nearly obsolete. Petals oval, with an incurved point. Fruit nearly orbicular, emarginate at the base, with a winged margin; the 3 dorsal ribs obtuse and nerve-formed: the 2 lateral ones expanded into wings, which lie over the whole surface: vittae 1 in each furrow, and 1 on each side of the comissure. Forks of carpophore adhering to the mericarps. —Involucra wanting, or of few leaves; involucels of many setaceous leaves.

99 Bu'bon. Margin of calyx obsolete. Petals obovate, entire, with an acute involute point. Fruit girded by a flattened, dilated margin; the 3 intermediate ribs filiform, and the 2 lateral ones going into the margins; vittae covering the whole seed, 4 dorsal and 2 in the comissure. Carpophore bipartite. Seed flat in front and convex on the back.—Cape shrubs. Involucra and involucels of many leaves. Flowers greenish yellow.

100 An'stium. Margin of calyx obsolete. Petals roundish, entire, with a rather square retuse point. Fruit girded by a flat margin; the 3 intermediate ribs acutely keeled, and the 2 lateral ones more obsolete, and running into the margin; vittae broad, solitary in the furrows, and filling them, and twin in the comissure. Seed rather convex on the back. —Involucra and involucels wanting. Flowers yellow.

101 Córtia. Teeth of calyx elongated, acute. Petals lanceolate, acuminate, entire. Stylodopodium conical; styles diverging. Fruit elliptic, rather retuse at both ends; ribs winged: lateral one the broadest; vittae 1 in each furrow, and 2 in the comissure, which is flat. Seed flatish. —Involucra of 2-3 multifid leaves; involucels of 5 linear, entire, or 2-3-cleft leaves.

102 Capsophyl'ium. Margin of calyx obsolete. Petals oblong, rather emarginate, tapering into an inflexed acumen. Fruit girded by a flat, dilated margin; the 3 intermediate ribs thickish, keeled, rather flexuous, tubercular: the 2 lateral ones going into the dilated margin; vittae 1 in each furrow, and 2 in the comissure. Seed rather convex on the back. —Involucra and involucels of 3-6 leaves.

103 Tedemánia. Margin of calyx 5-toothed (f. 64. a). Petals acuminate, reflexed. Fruit nearly ovate (f. 64. c.); mericarps with 5 filiform, subcarinated, approximate ribs: lateral ones dilated into a membranous margin, which is nearly the breadth of the fruit; vittae solitary in the furrows, and filling them, and twin in the comissure. Carpophore bipartite. Seed flat. —Involucra and involucels of 4-5 subulate leaves.

104 Achemó'ra. Margin of calyx 5-toothed. Petals obcordate, with an inflexed point. Fruit compressed from the back, oval or obovate; mericarps with 5 filiform, rather keeled, approximate ribs: lateral ribs dilated into a broad membrane; vittae solitary in the furrows, and filling them, and twin in the comissure. Carpophore bipartite. Seed flattened. —Involucra wanting or few-leaved; involucels of many leaves.

105 Pasti'na. Margin of calyx obsolete, or minutely denti culated. Petals roundish, entire, involute, with a broad retuse point. Fruit compressed from the back, girded by a flat dilated margin: the 3 intermediate ribs filiform, equidistant: lateral ones contiguous to the dilated margin; vittae linear, acute, hardly shorter than the ribs, solitary in the furrows, and twin or more in the comissure. Carpophore bipartite. Seed flattened. —Involucra and involucels wanting or few-leaved. Flowers yellow.

106 Leiotolúus. Teeth of calyx obsolete. Petals roundish, entire, involute, with a broad retuse segment. Fruit compressed, with a thickened dilated smooth margin; the 3 intermediate ribs approximate, and the 2 lateral ones marginal and remote; vittae 1 in each furrow, filiform, distant in the comissure. Involucra wanting; involucels of a few very fine leaves.
107 Astyd'ämia. Margin of calyx 5-toothed (f. 56. D. a. d. f). Petals obovate, entire, with an inflexed point. Stylopodium thick; styles very short (f. 56. D. g.). Fruit compressed from the back (f. 56. D. k.), girded by a thick dilated margin; the 3 dorsal ribs crested, approximate: the 2 lateral ones running into the margin; dorsal vittae very few, the commissural ones wanting or covered.—Involucra and involucels of many leaves. Flowers yellow.

108 Symphytólóma. Margin of calyx obsolete. Petals equal, emarginate, with an inflexed point. Stylopodium without a margin; styles reflexed. Fruit elliptic, compressed from the back; mericarps closely connate by their margins; with 5 filiform ribs: 3 dorsal ribs equi-distant; lateral ones more remote, margi- nating; vittae wanting or obsolete. Seed flattened. Carpophore none. Flowers red.

109 Heracle'üm. Calyx 5-toothed. Petals obovate, emarginate, with an inflexed point: exterior petals usually radiating and bifid. Fruit compressed from the back, girded by a flat, dilated margin; mericarps with very fine ribs: 3 dorsal ones equi- distant: 2 lateral ones remote, contiguous to the dilated margin: vittae on the back, solitary in the furrows, but usually with 2 in the commissure, all shorter than the fruit, and usually club-shaped; carpophore bipartite. Seed flat.—Involucra caducous, usually of few leaves; involucels of many leaves.

110 Zo'é'mia. Calyx 5-toothed. Petals obovate, emarginate, with an inflexed point. Fruit compressed from the back, rather convex in the middle, hairy, girded by a smooth, thickened, dilated margin; ribs very thin: dorsal ones at equal distances: 2 lateral ones more remote, contiguous to the dilated margin; vittae covering the whole seed, solitary in the furrows, and twin in the commissure. Carpophore bipartite. Seed flat.—Involucra and involucels of many leaves.

111 Polytén'ia. Calyx 5-toothed. Petals oval, emarginate, with an inflexed point. Fruit oval, compressed on the back, convex in the middle, glabrous; with a smooth tumid margin, and a depressed furrow on the back; ribs very slender, hardly distinct; vittae between the ribs, but 6 in the commissure; carpophore indistinct. Seed flat.—Involucra none; involucels setaceous.

112 Johre'nia. Teeth of calyx obsolete, very blunt. Petals unknown. Stylopodium short, conical, furrowed a little. Styles short, diverging. Fruit oval, lenticularly compressed on the back (f. 56. C. b.), quite glabrous; with a smooth tumid margin, and a flat, dorsal, coloured furrow; mericarps with 3 dorsal, filiform ribs, which probably contain vittae: 2 lateral ones running into the dilated margin, hardly distinct, usually rufous, and the form of vittae; commissure spongy, furnished with 2 lines, but without vittae. Carpophore 2-parted (f. 56. C. b. a.). Seed flat.—Involucrum wanting, or of 1 leaf; involucels of 4-5 linear, setaceous leaves.

Tribe VIII.

Tordyl'íne. Fruit lenticularly or flatly compressed from the back, girded by a thickened, nodulose, or plaited, dilated margin. Mericarps with 5 very fine or obsolete ribs: lateral ones contiguous to the dilated margin, or forming the same. Seeds flattened. This tribe differs from Peucedànéa in the margin of the fruit being plaited or nodulose, not smooth and entire.

113 Hasselqui'stia. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point; outer petals radiating and bifid. The outer fruit of the umbel are compressed, girded by an accessory, winged, thickened margin, which is hardly wrinkled; those of the disk dissimilar: one of the mericarps contracted into an hemispherical urceolus around the other, which is abortive; ribs very slender: the 3 dorsal ones equi- distant: and the 2 lateral ones contiguous to the thickened margin, or hidden by it; vittae 1 in each furrow, and 2 in the commissure. Carpophore bipartite. Seed flat.—Involucra of many leaves.

114 Tordyl'ium. All as in Hasselquista, except that the vittae are either solitary or numerous in the furrows, and either 2 or more in the commissure; and in the fruit being equal, and girded by a tubercularly wrinkled, accessory, thickened margin.—Involucra of many leaves.

115 Tordylórias. Margin of calyx 5-toothed; teeth acute: outer teeth the largest, dilated at the base, and cuspidate at the apex. Outer petals of umbels larger, and obcordately 2-lobed: the rest smaller, ovate, and cuspidate, usually entire, rarely somewhat 2-lobed. Stylopodium conical. Styles erect, elongated. Fruit hairy.—Involucra and involucels of 5-6 lanceolate-linear leaves.

** Fruit furnished with both primary and secondary ribs. **

Tribe IX.

Sileríne. Fruit lenticularly compressed from the back. Mericarps with 5 primary ribs: the lateral ones marginating; and usually with 4 secondary, less prominent ones; all filiform and wingless. Seeds flatish in the front.

116 Krube'ra. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point. Mericarps with 5 plicately crenated, thick ribs: the 3 intermediate elevated, obtuse, and keeled: 2 lateral marginating and roundish, keeled near the raphe; vittae none. Carpophore bifid.—Involucra 2-5-leaved; involucels 4-5-leaved.

117 Lanchylé'rum. Margin of calyx obsolete, or minutely denticulated. Petals permanent; those of the inner flowers obovate-oblong, emarginate, with an acute, inflexed point; those of the ray flowers of 2 forms: the 8 inner, ovate, hardly emarginate, with an acute inflexed point: 2 outer nearly orbicular, and profoundly emarginate, also with an inflexed point. Mericarps with elevated, thick, and corky ribs: the lateral ones marginating, and a little broader than the others; vittae none.—Involucra and involucels of many leaves.

118 Asy'llis. Margin of calyx obsolete. Petals lanceolate, incurved. Fruit oval. Mericarps with 5 primary ribs: the 2 lateral ones placed in front of the accessory margin; the secondary ribs hardly visible. Seeds furnished with 8-10 dorsal vittae, and 5-6 commissural ones.—Involucra wanting; involucels of many setaceous leaves.

119 Stenocc'élium. Margin of calyx 5-toothed. Petals obovately orbicular, somewhat emarginate, with an inflexed
point. Mericarps with 5 rounded, thick, equal ribs; vitæ 1 in each furrow.—Involucra and involucels of many leaves.

120 Siler. Margin of calyx 5-toothed. Petals oblong, emarginate, with an inflexed point. Ribs filiform, elevated, obtuse: primary ones 5; lateral ones of these marginating: secondary ones 4, less prominent; vitæ 1 in each furrow, under the secondary ribs.—Involucra none, or few-leaved, caducous.

121 Galium. This genus differs from Siler in the absence of dorsal vitæ to the fruit, and the commissure being furnished with only 2.

**Tribe X.**

**Cuminum.** Fruit contracted from the sides; mericarps with 5 filiform, primary ribs: the lateral ones of these marginating; 4 secondary more prominent ones; all wingless. Seed straight, flatish in front.

122 Cuminum. Calyx with 5 lanceolate, unequal, permanent teeth. Petals oblong, emarginate, with an inflexed point. Primary ribs minutely muricated: secondary ones prickly; vitæ 1 in each furrow under the secondary carpels. Carpophore bipartite. Seed concave in front, and convex on the back.—Involucra of 2-4 simple or divided leaves; the involucels dimidiate, of 2-4 reflexed leaves.

123 Trefoicarpus. Calyx with 5 subulate teeth, which fall off at length. Petals obcordate, inferfully emarginate. Fruit pyramidal angular, nearly terete; mericarps convex on the back; primary ribs margined with a fuscous, vitæ-formed line on each side; secondary ones furnished with 1 vitta on their inner side; commissure thick, furrowed in the middle, and furnished with vitæ inside. Seed straight, rather compressed on the back.—Involucra 1-3-leaved; involucels dimidiate, of 4-5 linear, unequal leaves.

**Tribe XI.**

**Thapsie.** Fruit compressed from the back; mericarps with 5 filiform primary ribs, which are now and then bristly: lateral ones seated in the flat commissure; secondary 4; inner ones of these filiform, and the outer ones or all are winged: wings undivided, hence the fruit is either 8-winged, or furnished with 2 wings on each side. Seed flatish, or teretely convex, flat in front.

124 Thapsia. Margin of calyx 5-toothed. Petals elliptic, entire, with an inflexed or involute point; 2 lateral secondary ribs winged, hence the fruit is 2-winged on each side; furrows under the secondary ribs furnished with 1 vitta each. Carpophore bipartite. Seed flatish.—Involucra and involucels wanting, or of few flowers. Leaves yellow.

125 Cymopterus. Calyx minutely 5-toothed. Petals roundish-oval, inflexed at the apex. Fruit nearly elliptic, compressed, 7-8-winged, from all the secondary ribs being winged; wings undivulated; furrows flat, 1-nerved; commissure naked, 3-striped. Carpophore not separable from the mericarps.—Involucra wanting; involucels dimidiate, 5-7-parted.

126 Lasereium. Margin of calyx 5-toothed (f. 55. C. f.). Petals obovate, emarginate (f. 55. C. a.), with an inflexed point (f. 55. C. t.). Fruit compressed from the back (f. 55. C. g.), or nearly terete, 8-winged, in consequence of the 8 secondary nerves being winged; vitæ 1 in each furrow, under the secondary ribs. Carpophore free, bipartite (f. 55. C. k.).—Involucra and involucels of many leaves.

127 Lophosgia. Margin of calyx 5-toothed. Petals elliptic, entire, acuminate, involute at the apex (f. 55. B. d.). Fruit compressed (f. 55. B. c.) on the back; the 2 lateral secondary ribs expanded into a sub serrated wing each: the 2 dorsal ones expanded into an interrupted wing each, at first sight appearing like a retrograde scales (f. 55. B. c.).—Involucra of 5-7 ovate-lanceolate leaves (f. 55. B. a.); involucels of 5-7 narrower leaves (f. 55. B. b.). Flowers yellow.

128 Melanoselinum. Margin of calyx 5-toothed. Petals obovate, emarginate, with a reflexed point. Fruit compressed from the back; the 2 inner secondary ribs filiform and very slender: the 2 outer ones expanded into a membranous serrated wing each; with oleiferous canals under all the ribs. Carpophore bipartite. Seed flat.—A shrub. Involucra and involucels of many leaves, the first composed of cut leaves, and the second of entire leaves.

**Tribe XII.**

**Daucie.** Fruit lenticularly compressed from the back; mericarps with 5 bristly, filiform, primary ribs; lateral ones of these seated in the flat commissure, as in Thapsie; and with 4 secondary ones, which are more prominent and prickly; the prickles free, or joined into a wing. Seeds flatish, or subsemiterete, or convex on the back, and flatish in front.

129 Arctidia. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point: those on the outer part of the umbel radiating and bipartite. Secondary ribs 4; the 2 inner ones filiform: the outer ones expanded into a sinuate lobed wing each; vitæ none. Carpophore bipartite. Seed flat.

—Leaves of involucra and involucels divided into linear lobes.

130 Orlaya. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point: those in the ray of the umbel profoundly bifid. Secondary ribs of fruit furnished with 2 or 3 rows of prickles, outer ones more prominent, or a little winged; prickles hooked or rayed at the apex; vitæ 1 in each furrow under the secondary ribs. Carpophore bifid or undivided? Seed convex on the back.—Involucra variable; involucels of many leaves.

131 Daucus. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point; those on the outer part of the umbel radiating and profoundly bifid. Secondary ribs of fruit furnished with 2 or 3 rows of prickles, outer ones more prominent, or a little winged; prickles hooked or rayed at the apex; vitæ 1 in each furrow, under the secondary ribs. Seed flatish in front.—Involucra of many trifid or pinnatifid leaves; involucels of many entire or trifid leaves.

**Suborder II. Campylosome.** Albumen involute, or marked by a longitudinal furrow or channel on the inner side.

§ 1. Mericarps furnished with both primary and secondary ribs. 

**Tribe XIII.**

**Elaeoselineae.** Fruit cylindrical, more compressed from the
back than from the sides; mericarps with 5 primary filiform ribs; and 4 secondary ones: the 2 dorsal ones of these last nerve-formed, but the 2 lateral ones are expanded into a wing each; with the margins nerve or rib-formed. Seeds involute, semi-lunate.

132 _Elyoselimum_. Margin of calyx hardly 5-toothed. Petals obovate, emarginate, with an inflexed point. Fruit nearly terete, 4-winged; the 2 lateral primary ribs seated between the wings and the nerve-formed margins; vitte under all the ribs abounding in oil, those under the primary ribs narrower and slenderer: in the commissure there are 4.—Involucra and involucles of many cuspidate, linear leaves. Flowers yellow.

**TRIBE XIV.**

_Caucal'ne._ Fruit contracted from the sides, or nearly terete. Mericarps with 5 filiform, bristly, or prickly, primary ribs: lateral ones of these seated in the commissure, which is flat; the secondary 4 more prominent and very prickly. Seeds involute, or inflexed on the margin.

133 _Cau'calis_. Teeth of calyx 5, ovate-lanceolate. Petals obovate, emarginate, with an inflexed point: outer ray ones strongly bifid. Fruit rather compressed from the sides; secondary ribs deeply cleft into a simple series of prickles; vitte solitary in each furrow, under the secondary ribs, and 2 in the commissure. Carpophore stiff; cleft at the apex.—Involucra none, or of 1-2 leaves; involucelles of 3-8 lanceolate leaves.

134 _Tur'gania_. Teeth of calyx 5, setaceous. Petals obovate, emarginate, with an inflexed point: outer ones radiating and bifid. Fruit subdidymous; lateral primary ribs with a simple series of warts or prickles, all the rest furnished with 2 or 3 rows of equal prickles; furrows furnished with 1 vitte each under the secondary ribs. Carpophore seetaceous, bifid.—Involucra and involucelles of 3-5 ovate, concave, equal leaves.

135 _Tor'lis_. Teeth of calyx 5, triangularly lanceolate, acute, permanent. Petals obovate, emarginate, with an inflexed point: outer ones larger and bifid. Secondary ribs having abundance of prickles occupying the whole furrows, which are furnished with 1 vitte each under the prickles. Carpophore setaceous, bifid. Involucra of 1-5 leaves; involucelles of 5-6 lanceolate ciliated leaves.

§ 2. Mericarps only furnished with primary ribs.

**TRIBE XV.**

_Scondic'ne._ Fruit evidently compressed, or contracted from the sides, usually beaked; mericarps with 5 filiform ribs, which are at length winged: lateral ribs marginating, all equal, but sometimes all obliterated at the base, and only conspicuous at the apex. Seeds teretely convex, having a deep furrow in front, or somewhat involute on the margin.

136 _Scand'nx_. Margin of calyx obsolete, or somewhat 5-toothed. Petals obovate, truncate, or emarginate, usually furnished with an inflexed point. Fruit compressed from the sides, with a very long beak; vitte wanting, or nearly obsolete. Carpophore undivided, forked at the apex.—Involucra wanting, or of 1 leaf; involucelles of 5-7 leaves.

137 _Anthri'ceus_. Margin of calyx obsolete. Petals obovate, truncate, or emarginate, with a very short inflexed point. Fruit contracted from the sides: having a beak, which is shorter than the seed; mericarps nearly terete, destitute of ribs, the beak alone being furnished with 5 ribs. Carpophore bifid at the apex.—Involucra wanting; involucelles of many leaves.

138 _Che'rophyl'um_. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point. Fruit compressed from the sides, without any beak; commissure deep; vitte 1 in each furrow. Carpophore bifid.—Involucra wanting, or of few leaves; involucelles of many leaves.

139 _Cal'dasia_. Margin of calyx obsolete. Petals ovate, with an entire somewhat involute point. Fruit ovate-oblong, rather compressed from the sides, crowned by the short diverging styles; furrows between the ribs broad, flat, striated, and furnished with 1 vitte each; commissure furrowed in the middle. Carpophore bipartite. Seed rather convolute at the commissure.—Umbels simple, surrounded by a 20-leaved involucre.

140 _Sphalle'coca'rpus_. Teeth of calyx 5, subulate. Petals obovate-cuneated, emarginate, with an inflexed point (f. 56. _L. b._): the outer ones of the umbel radiating. Stylodium rather urceolate, toothed; styles short. Fruit elliptic-oblong (f. 56. _L. d._), contracted from the sides, without a beak; furrows between the ribs convex, furnished with 2-3 vitte each, and the commissure with 4-6. Carpophore bipartite (f. 56. _L. h._).—Involucra wanting; involucelles of 5-6 lanceolate leaves (f. 56. _L. a._).

141 _Molo'posper'num_. Calyx 5-toothed, foliaceous. Petals lanceolate, entire, ending in a long ascending point. Fruit contracted from the sides. Mericarps with 5 winged ribs. Seed bluntly tetragonal or angular; channels empty between the seed and the commissure of the pericarp; furrows having 1 broad brown vitte each, but the commissure is very narrow, and without any vitte. Carpophore bipartite.—Involucra of many elongated, membranaceous leaves, which are sometimes multifid; involucre of many leaves.

142 _Ve'lea._ Margin of calyx obliterated. Petals unknown. Stylodium conically depressed, short (f. 56. _G. b._); styles erect, filiform. Fruit ovate (f. 56. _G. e. b._), without a beak; mericarps rather compressed from the sides, with 5 ribs: the 2 lateral ones filiform, and the 3 dorsal ones winged; vitte 3, and sometimes 2 in each furrow, and 4 in the commissure. Carpophore bipartite (f. 56. _G. h._) from the base.—Involucra and involucelles none.

143 _My'rrhis_. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point. Fruit compressed from the sides. Seeds involute, covered by a double membrane: outer membrane furnished with 5 acutely keeled, sharp, equal ribs, hollow inside; inner one adnate to the seed; vitte none. Carpophore cleft at the apex.—Involucra none; involucelles of many lanceolate ciliated leaves.

144 _Osmorhiza_. Margin of calyx obsolete. Petals obovate, hardly emarginate, with a short inflexed point. Fruit elong-
gated, tapering into a tail at the base, solid, acutely angular; mericarps with hispid, rather furrowed angles; ribs 5, acute; commissure furrowed; furrows flat, without vitæ. Carpophore semi-bifid.—Involuca of 2-3 lanceolate, ciliated leaves; involucels of 5 lanceolate, ciliated leaves.

145 Grammoschium. Teeth of calyx stiff (f. 56. H. g.), permanent. Petals obcordate, with an inflexed point. Styles short, conical (f. 56. H. b.), diverging. Fruit cylindrical (f. 56. H. a. b.), without a beak; mericarps with 5 primary, flattish white ribs; furrows flat, furnished with 1 vitta each, and the commissure with 2.—Involuca of 5-7 multifid leaves; involucels of linear-subulate, rarely cut leaves (f. 56. H. e.).

Tribe XVI.

Smyrææ. Fruit turgid, usually compressed, or contracted from the sides; mericarps with 5 ribs: lateral ones marginating, or situated in front of the margin; the ribs sometimes almost obliterated. Seed involute, or with a furrow on the inside, semi-lunar or complicate.

146 Lopécia. Calycine lobes large, pectinated. Petals obcordately bifid, shorter than the calyx; lobes awned. Ovarium 2-celled, with 1 of the cells abortive. The fruit is therefore ovate, crowned by the calyx, pubescent: marked by a furrow on one side, indicating the place of the abortive seed.—Involuca of 8-10 pectinated leaves; and the involucre of 4.

147 Oliveæ. Margin of calyx 5-toothed. Petals profusely obcordate: lobes involute on the margin at the base, and excavated at the sides, undulated and reflexed at the apex. Fruit obovate, hairy; mericarps nearly terete; with 5 blunt ribs. Carpophore bifid at the apex.—Involuca of 3-4 trifid leaves, with the lobes usually tridentate; involucels of many cuneiform, trifid leaves.

148 Anisoschium. Calycine lobes of the outer flowers of the umbel, large, ovate, and foliaceous: of the outer central ones stiff and hooked: of the other inner ones wanting or tooth-formed. Petals very unequal: outer ones obcordately bifid: inner ones small. Fruit rather downy, oblong-cylindrical, crowned by the calyx, and stiff conical styles; mericarps with 5 blunt ribs; vittæ brown, 1 in each furrow, but none in the commissure.—Involuca of 4-5 oblong, acute, unequal leaves; involucels of 4-5 leaves.

149 Echinophora. Margin of calyx 5-toothed. Petals emarginate, with an inflexed point: outer ones larger and bifid. Styles of the female flowers elongated, filiform (f. 65. k.). Fruit ovate (f. 65. c.), nearly terete, inclosed in a hollow receptacle: with a short, emersed beak; mericarps with 5 undulated, equal depressed ribs; vittæ covered with a cobwebbed membrane, 1 in each furrow.—Involuca and involucels of many leaves (f. 65. a.).

150 Exoaca'ntha. Flowers polygamous: central ones fertile, the rest sterile. Calyx in the sterile flowers obsolete. Petals obcordate, equal, inflexed. Young fruit of the sterile flowers obovate, striated; of the central flowers much more ovate, somewhat papillose, and crowned by 15 elongated stiff bristles.—Involuca of 10-12 large, channelled, spinose leaves; involucels of 7-11 spinose, very unequal leaves on one side.

151 Acrōrus. Flowers polygamous. Margin of calyx 5-toothed. Petals lanceolate, with an incurved acute entire point. Fruit ovate, beaked, crowned by the calyx, dehisced from the base to the middle with the involucrum, depressed in front, and marked by a furrow, not separable into 2 parts, but bilocular, 1 of the cells abortive.—Involuca of 4-5 concrete leaves.

152 Can'ēnus. Margin of calyx 5-toothed, rarely obsolete. Petals ovate, entire, involute at the apex or inflexed. Stylopodium depressed, hardly distinct in the mature fruit. Mericarps with 5 thick ribs, variable in the different sections of the genus; commissure almost the breadth of the mericarps. Seed constituting a free nucleus covered with abundance of vittæ.—Involuca and involucels of many leaves. Flowers yellow.

153 Par'nos. Margin of calyx 5-toothed. Petals ovate, entire, involute at the apex. Stylopodium depressed, hardly prominent in the fruit. Commissure broad. Mericarps compressed from the back, with 5 smooth ribs, which are thick at the base, and ending in vertical membranous wings on the back. Seed girded by an abundance of vittæ.—Involuca and involucels of many undivided leaves.

154 Colla'donia. Margin of calyx entire. Petals oval, entire, involute at the apex. Stylopodium depressed, hardly prominent in the fruit. Mericarps compressed from the sides, ending in 5 vertical membranous wings on the back, having 1 vitta in each furrow; commissure narrow, furnished with 2 vittæ.—Involuca and involucels of many undivided leaves.

155 Lecōria. Margin of calyx with 5 short teeth. Petals ovate, with an inflexed point. Stylopodia 2, distinct. Styles subulate. Fruit ovate, didymous, with a narrow commissure; mericarps semi-terete, with 5 obtuse, spongy ribs, which are beset with prickles on all sides. Seeds girded by copious vittæ. Involucels of 5-8 subulate leaves.

156 Magy'da'ris. Margin of calyx obsolete. Petals obcordate, with an inflexed point. Fruit ovate (f. 56. I. b.), tomentose; mericarps with 5 thick, blunt ribs, and narrow furrows. Seeds clothed on every side with very slender vittæ, convex on the outside, and involute with a deep furrow on the inside.—Involuca and involucels present, of many undivided leaves.

157 He'rmas. Margin of calyx 5-parted, foliaceous, permanent. Petals oval-oblong, acute, keeled, entire, equal. Fruit ovate; mericarps rather inflated, compressed from the back, 5 ribbed: the dorsal rib exerted: the 2 middle ones larger: and the 2 marginal ones small, under the commissure; vittæ many in the furrows between the ribs, which are broad. Seed not adnate to its covering, rather hollow inside.—Involuca of many leaves; involucels of 3 leaves.

158 Coni'um. Margin of calyx obsolete. Petals obcordate, rather emarginate, with a short inflexed point. Fruit compressed from the sides, ovate; mericarps with 5, rather prominent, equal ribs, which are undulately crenulated: having the furrows between the ribs, furnished with many stripes, but without any vittæ. Carpophore bifid at the apex. Seed with a
deep narrow furrow inside.—Involucra of 3-5 leaves; involucels of 3-5 leaves, dimidiate.

149 Vicá'tiá. Margin of calyx obsolete. Petals unknown. Styles short. Fruit ovate-oblong; mericarps nearly semi-terete, with 5 filiform, hardly prominent ribs; vitæ small, many in the furrows, which are broad and flat; commissure narrow. Carpophore thick, somewhat bifid at the apex. Albumen furnished with a furrow at the commissure, convex outside.—Involucra, and generally the involucels, are wanting.

160 Arraca'chá. Margin of calyx obsolete. Petals lanceolate or ovate, entire; with an inflexed point, which is curved above the middle nerve. Fruit ovate-oblong, somewhat compressed from the sides; mericarps with 5 equal ribs; vitæ many in the furrows. Albumen nearly semi-terete, furnished with a furrow at the commissure.—Involucra wanting; or of 1 leaf; involucels of 3 leaves. Flowers polygamous.

161 Pleurospé'rüm. Margin of calyx 5-toothed. Petals obovate, entire, flat, or attenuated and inflexed at the apex. Fruit ovate, somewhat compressed from the sides; mericarps furnished with a double membrane: outer one furnished with 5 winged hollow ribs: the inner one adnate to the seed, and furnished with 5 elevated ribs under those of the outer membrane; furrows of the inner membrane furnished with 1-2 vitæ each, and the commissure with 2. Carpophore filiform, bipartite.—Involucra and involucels of many leaves.

162 Hymenolé'na. Margin of calyx obsolete. Petals obovate, entire, flat, or attenuated and inflexed at the apex. Fruit ovate or oblong; mericarps with 5 exerted, nearly equal wings; commissure flat, furnished with 2 vitæ, and the furrows with 1. Seed with a furrow in front, convex on the outside. Carpophore bipartite.—Involucra and involucels of many leaves.

163 Physospe'rüm. Margin of calyx 5-toothed. Petals obovate, somewhat emarginate, with an inflexed point. Fruit contracted from the sides; mericarps reniformly globose, didymous, with 5 filiform equal slender ribs: the lateral ribs placed before the margins; vitæ broad, 1 in each furrow. Seed semi-lunar.—Involucra and involucels of many leaves.

164 Smy'nüm. Margin of calyx obsolete. Petals lanceolate or elliptic, entire, with an inflexed point. Fruit contracted from the sides; mericarps reniformly globose, didymous: with 3 dorsal, rather prominent ribs, and 2 lateral, marginaing, nearly obliterated ones; vitæ many in each furrow; carpophore bipartite. Seed involute.—Involucra and involucels variable in the different species.

165 Eu’lóphus. Margin of calyx 5-toothed (f. 56. K. b.). Petals unknown. Fruit a little contracted from the sides (f. 56. K. a.); mericarps ovate, rather didymous, with 5 hardly prominent ribs; furrows having 3 convex stripes, more prominent than the ribs, which are hollow inside and filled with oil; commissure furnished with 4 similar vitæ. Seed semi-lunar. Carpophore bipartite.—Involucra and involucels of many linear leaves (f. 56. K. c.).

166 Scaligória. Margin of calyx entire. Petals obcordate, with a short inflexed obtuse point. Stylopodium thick (f. 56. B. k.), parallel. Styles filiform, bent outwardly. Fruit rather didy-mous; mericarps ovate, contracted at the raphe, hardly compressed from the sides, with 5 filiform ribs; vitæ 2-3 in the furrows, which are rather convex, and 4-6 in the commissure, which is flatish. Albumen furnished with a furrow on the inside.—Involucra wanting; involucels of a few small linear leaves.

FIG. 56.

Suborder III. Célospe'ria. Albumen involutely curved from the base to the apex.

Tribe XVII.

Cori'ándrea. Fruit globose, or of 2 subglobose mericarps. Mericarps furnished with 5 primary, depressed, and flexuous ribs: lateral ribs placed before the accessory margin; and 4 more prominent secondary ones; all wingless.

167 Bifóra. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point: outer ones nearly equal or radiating and bifid. Fruit didymous; mericarps ventricosely subglobose, granularly wanting, with 5 impressed, ob-solete stripes: the 2 lateral stripes semicircular, placed in front of the accessory margin; vitæ wanting; commissure having 2 holes. Carpophore bipartite, adnate on both sides.—Involucra and involucels wanting, or of 1 leaf.

168 Astóbá. All as in Bifóra, but the fruit is evidently didymous; and the commissure is narrow, not perforated, nor dilated at the apex; styles rather diverging.—Involucra of 5-6 lanceolate leaves; involucels of 3-5 leaves.

169 Atré'ma. Teeth of calyx 5, acute, small, permanent. Petals obovate, emarginate, with an inflexed point. Fruit rather didymous; mericarps nearly globose, ventricose, marked with 5 rather prominent ribs, without any vitæ; commissure narrow, closed.—Involucra and involucels of many leaves.

170 Cori'ántrum. Teeth of calyx 3, acute, unequal, permanent. Petals obovate, emarginate, with an inflexed point: outer ones radiating, bifid. Fruit globose, 10-ribbed, hardly divisible; the 4 secondary ribs on each mericarp are more prominent than the primary ones, and keeled; vitæ 1 in each furrow, and 2 in the commissure; carpophore free in the middle, but adnate at the base and apex. Seed hollow in front, covered by a loose membrane.—Involucra none; involucels usually of 3 leaves, dimidiate.

161 Cymbocá'rum. Margin of calyx obsolete. Petals equal, obcordate, with an inflexed point. Stylopodium depressed; styles
reflexed. Fruit nearly globose; mericarps solid, hemispherical: with 5 primary, filiform, usually obliterated ribs, without any secondary ribs or vitce. Carphopore bipartite, free in the middle, but adnate at the base and apex. Seed hollowed in front.—Involuta and involucres composed of linear leaves.

Suborder I. ORTHOSPÉRMÆ (from ορθος, orthos, straight, and σπέρμα, sperma, a seed). D. C. prod. 4. p. 58. Albumen flat on the inner side, neither involute, nor convolute.

§ 1. Umbels simple or imperfect. Fruit destitute of vitæ.

Tribe I.

HYDROCOTYLLÆ (plants agreeing with Hydrocotyle in important characters), or Orthospérmœ, Imperfectæ, Umbelláceæ, Compáresseæ, D. C. prod. 4. p. 58.—Hydrocotyleæ, Spreng. in Schultes, syst. 6. p. 32. Koch, umb. p. 141. exclusive of many genera. Fruit contracted from the sides; back of carpella or mericarps convex, rarely acute; the 5 primary ribs or nerves becoming immediately obsolete: lateral ribs marginaing, or thrown back into the flat commissure; secondary ones permanent and filiform, sometimes absent or nearly so. Albumen flatish in front. Petals spreading, entire, acute, straight, or rather in flexed at the point. This tribe represents the forms of nearly all in the different genera; it is distinguished from nearly all the suborder Orthospérmœ, in the umbels of flowers being imperfect; from Santalidae in the lateral compression of the fruit, and from Mulinææ in the commissure not being gradually contracted.


Lin. syst. Pentádria, Dígbiaxia. Tube of calyx rather compressed: limb with an obsolete margin. Petals ovate, entire, acute, with a straight apex. Fruit flatly compressed from the sides, bicuculate. Mericarps or carpella without vitæ: having the 5 ribs or nerves nearly filiform: the carinal and lateral ones usually obsolete, and the 2 intermediate ones joined. Seed carinately compressed.—Usually slender bog herbs, rarely sub-shrubs. Umbel simple, surrounded by a few-leaved involucrem. Flowers sessile or pedicellate, white. This genus is composed of a heterogeneous mass of species, and is therefore probably divisible into several genera.

Sect. I. Euhydrotyle (this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 59. Hydrocotyle, Lin. gen. no. 325. Stems herbaceous, of nearly all the species, creeping. Fruit compressed; mericarps furnished with 1-2 ribs on each side.

§ 1. Leaves peltate.


Var. β, tuberísa (D. C. prod. 4. p. 59.) stems tumid at the nodes, and tuberosous.

Var. γ, platypýlla (D. C. prod. 4. p. 667.) leaves 11-12-nerved, twice the size. Ζ. H. Native of Tropical Africa, in marshes at Cayor.

Interrupted-flowered Penny-wort. Fl. May, June. Pl. cr.

2 H. vulgäris (Lin. spec. p. 338.) leaves peltate, orbicular, doubly crenated, 9-nerved; petioles pilose at the apex; umbels capitate, usually 5-flowered; fruit somewhat emarginate at the base, of one colour. Η. B. H. Native nearly throughout the whole of Europe, in marshy boggy places, and on the margins of clear rivulets, particularly on a peat soil; plentiful in some parts of Britain; also of North America, in Canada. Pl. dan. t. 90. Smith, engl. bot. t. 751. Curt. lond. 6. t. 19. Schkuhr, handb. t. 59. Rich. hyd. no. 1. t. 50. f. 1. and t. 52. f. 1. exclusive of the variety. Stems creeping, rooting at the nodi. Peduncles of the umbels or scapes much shorter than the petioles. Flowers reddish white or rose-coloured. There is a variety, but it is rather rare, with smooth petioles, and with the limbs emarginate at the base or nearly entire, and with the scapes drawn out beyond the umbels of flowers, and bearing 2 umbels each. Gerade calls this plant water penny-grass; sheep-killing penny-grass; in the north of England it is called white-rot, to distinguish it from red-rot; in Norfolk, flounce-wort, from its being supposed to occasion the flukes in the liver of rotten sheep; and by the husbandman sheep's-bane, "because it killeth sheep that do eat thereof." This, however, is a vulgar error; for the rot in sheep is owing to their feeding in wet grounds, and perhaps to an insect (the Fasciula hepatica), which from its shape is called a fluke or flounder, and abounds in such situations, adhering to stones and plants, as well as to the liver and biliary ducts of sheep affected with the rot. This, together with Dréssera or Sanden, and Pingúicula or Butter-wort, are common in marshy places, and therefore the rot in the sheep has been ascribed to these; but it is pretty certain that neither sheep nor any other quadruped feed on these plants.


3 H. furnílla (Rich. hydro. p. 27. t. 52. f. 2.) plant rather hairy; leaves orbicular, not emarginate at the base, obsolescent, 7-nerved; flowers umbellate; umbels hardly containing so many as 12 flowers; scape equal in length to the petioles. Φ. Η. Native about Monte Video, in arid places; and on shady rocks at Rio Pauquaucur, in the province of Rio Janeiro; also of Buenos Ayres. Chem. et Schlecht. in Linneæa. 1. p. 357. Flowers small. Petioles biauriculate at the base, and as if they were minutely stipulate (Rich.). Fruit smooth; mericarps marked with a single elevated line on each side. The Buenos Ayrean plant differs from the Brazilian one in being perfectly glabrous.

Small Penny-wort. Pl. creeping.

4 H. módéstæ (Chem. et Schlecht. l. c. p. 358.) leaves on long petioles, orbicularly reftiform, glabrous, 9-nerved; petioles pilose at the apex, as well as the young branches; umbels on short peduncles, many rayed; fruit small, emarginate at both ends. Φ. B. F. Native of Brazil, in the province of Monte Video; and of Chili about Valparaiso. Petioles 3-12 inches long. Peduncles an inch long, rarely more, and sometimes only 3 lines. Fruit smaller than in any other species; mericarps marked with a hardly elevated line on the sides. Modest Pennywort. Pl. cr.

5 H. barrará'ossa (Chem. et Schlecht. l. c. p. 360.) leaves on long petioles, peltate, orbicular, 8-nerved, 8-lobed, and crenated, and are, as well as the petioles, clothed with rufous hairs; umbels on long peduncles, many (50-60) rayed; fruit nearly globose, ovoid, rather emarginate, acutely ribbed. Φ. F. Native of Brazil, in shady woods near New Friburg. Petioles 4-8
Barbadosa Penny-wort. Pl. cr.

6 H. umbellata (Lin. spec. p. 234.) plant glabrous; leaves petallate, orbicular, emarginate at the base, doubly crenated, usually 11-12 nerved; scapes rather longer than the pedicels; umbels 20-30-flowered; flowers distinctly pedicellate. 2. B. F. Native of the West Indies, and at Tampico in the Bay of Mexico, as well as of Cuba and North America. Spreng. umb. p. 1. t. 1. f. 1. Rich. hyd. p. 28. t. 52. f. 3. Umbels proliferous in the specimens received from Tampico, but simple in those from Cuba. Corolla white.—Acacio, Piso, bras. p. 9.—Co-kedon aquatica, Sloane, jam. 1. p. 212.


7 H. Bonariensis (Lam. dict. 3. p. 147.) plant glabrous; leaves petallate, orbicular, 15-20-nerved, doubly crenated; scapes hardly longer, but often shorter than the petioles, umbellate at the apex, and umbellately branched; flowers disposed in interrupted whorles along the branchlets. 2. B. F. Native of South America, in marshy places not far from the sea, where it assumes various forms. Cham. et Schlect. in Linnaea. 1. p. 357. H. umbellata, Bonariensis, Rich. et Schult. syst. 6. p. 345.

Var. a. multiflora (Ruiz et Pav. fl. per. 3. p. 24. t. 246. f. a.) rays of umbel 8-10; whorles consisting of 15-20 flowers each. 2. B. G. Native of Brazil, Peru, Buenos Ayres. H. Bonariensis, Rich. Cav. icon. 5. t. 438.

Var. b. triboides (Ruiz et Pav. l. c. f. b.) rays of umbel 3; whorle 6-5-flowered. 2. B. Native of Peru and Brazil. H. polysalvata a, Rich. hyd. p. 31. 4.


8 H. petiolaris (D. C. prod. 4. p. 60.) plant quite glabrous; leaves peltate, orbicular, 10-12-nerved, simply and broadly crenated, on long petioles; scapes equal in length to the petioles, umbellate at the apex, and umbellately branched; branches 2-5, interruptedly verticillate. 2. B. F. Native of the Mauritius. H. vulgäris, Bory, voy. ex Rich. H. quinquenadieta, Per. Th. miss, ex Rich. H. polysalvata b, Rich. hyd. p. 31. Nearly allied to H. Bonariensis, but differs in the lobes of the leaves being simply crenated, in the petioles and scapes being nearly a foot high. Fruit nearly orbicular, emarginate at the base; mericarps furnished with one rib on each side.

Petiolar Water Penny-wort. Pl. 1. foot, cr.

9 H. Langsdorfii (D. C. prod. 4. p. 60.) plant glabrous or rather pilose on the leaves while young; leaves peltate, nearly orbicular, with 5-7 short lobes, crenated, 5-7-nerved; peduncles much longer than the petioles; umbel simple, containing 15-20 pedicellate flowers, surrounded by an 8-10-leaved reflexed involucre. 2. B. F. Native of Brazil, in the Island of St. Catharine. Stems long, creeping, slender. Peduncles 5-8 inches high. Adult leaves glabrous on both surfaces; lobes either acute or obtuse. Pedicells 3 times the length of the involucre. 5.

Langsdorf's Penny-wort. Pl. cr.

10 H. gracilis (Ruiz et Pav. fl. per. 3. p. 26. t. 247. f. 6.) leaves peltate, orbicular, 7-angled, 7-nerved, glabrous, crenated; petioles and scapes hairy; scapes shorter than the petioles; umbels 5-7-flowered. 2. B. F. Native of Peru, in stagnant watery places, and on the edges of rivulets. Rich. hyd. p. 32. Stems creeping. This species differs from all others in the present section in the leaves being acutely angled.

Slender Penny-wort. Pl. cr.

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flowers 15-20 in an umbel, on long pedicels. 

§ 2. Leaves more or less cordate at the base.

* Flowers umbellate, distinctly pedicellate.

19 H. acutifolia (Ruiz et Pav. fl. per. 3. p. 25. t. 248. f. a.) plant rather villous; leaves cordate, acute, situated at the base, unequally crenate-toothed on all sides; peduncles a little longer than the petioles; umbels many flowered, simple, globose; pedicels of flowers distinct; fruit almost dimdymous, bicostate on both sides. 


Acute-leaved Penny-wort. Pl. cr.

21 H. homaloides (Rich. hyd. no. 32. f. 21.) plant hairy; leaves orbicularly reniform, 9-nerved, bluntly 9-lobed, crenated; petioles pubescent, rather shorter than the pedicels; umbels 20-flowered; flowers distinctly pedicellate; mericarps of fruit 3-ribbed. 

22 H. B. F. Native of Peru. 

Geranium-like Penny-wort. Pl. cr.

23 H. multifida (Rich. hyd. no. 44. f. 34.) plant glabrous; leaves palmately cut; segments 5, somewhat 3-lobed; middle segment the longest; peduncles glabrous, longer than the pedicels, which are pilose; umbels 3-5-flowered; flowers distinctly pedicellate; fruit glabrous, quite smooth, finely villous. 

Loose-flowered Penny-wort. Pl. cr.

24 H. B. Native of New Holland. 

25 H. Bonplandii (Rich. hyd. no. 27. f. 7.) plant hairy; leaves reniform, 9-nerved, doubly crenated; petioles an inch long, about equal in length to the pedicels; umbels 10-12-flowered; flowers distinctly pedicellate. 

26 H. B. Native near Santa Fe de Bogota, H. B. et Korth, nov. gen. amer. 5. p. 24. 


Var. B. Chilenensis (Cham. et Schlecht. in Linnaea. 1. p. 263.) umbels more dense; pedicels very short; leaves 7-lobed, 7-lobed; petioles an inch and a half long. 

27 H. B. Native of Chili, near Talcahuano. 

Bonpland's Penny-wort. Pl. cr.

28 H. Mexicana (Cham. et Schlecht. in Linnaea. vol. 5. p. 208.) stems creeping; branches erect; leaves reniform, usually 9-nerved, deeply lobed, hairy; umbels on long peduncles, many flowered, loose, globose; hairs on the pedicels and peduncles reversed; styles spreading. 

29 H. B. Native of Mexico, near Jalapa in shalby woods. Said to be allied to H. leucocophala et H. B. Bompordii. 

Mexican Penny-wort. Pl. cr.

30 H. dumetia (Pohl, in litt. 1823. ex D. C. prod. 4. p. 62.) plant creeping, glabrous; leaves on long petioles, reniform, nearly orbicular, broadly crenated, 9-nerved; peduncles length of the petioles; umbels 20-flowered; flowers distinctly pedicellate; fruit ribbed, emarginate at both ends. 

27 H. B. Native of Brazil. Leaves nearly like those of H. Americana, but differs in the flowers being umbellate, not capitate. 

Penny-wort. I. Hydropityle. 

§ 3. Native Penny-wort. Pl. tr.

28 H. leucocophala (Cham. et Schlecht. in Linnaea. 1. p. 364.) plant creeping; leaves orbicularly reniform, usually 9-nerved, doubly toothed or crenated, beset with a few scattered hairs on both surfaces, as well as on the peduncles and petioles; umbels 20-30-flowered, nearly globose; flowers distinctly pedicellate; mericarps of fruit smooth; at first cream-coloured, and acutely 3-ribbed. 

28 H. B. Native throughout the whole of Brazil. 

White-headed Penny-wort. Pl. cr.

29 H. natans (Cyr. pl. rar. neap. 1. t. 6. f. β.) plant creeping, glabrous; leaves orbicular, with a narrow coriaceous recess, reniform, bluntly and unequally 9-11-lobed, and 9-11-nerved, crenated; peduncules much shorter than the petioles; umbels capitulate, 5-6-flowered; flowers on short pedicels. 

28 H. B. Native of the kingdom of Naples, in bogs, ditches, and rivers; and in the river Anapo near Syracusa, and elsewhere in Sicily; Dombey gathered the same plant in Peru, and Chamisso at St. Francisco in North California.—Column. ephr. p. 316. with a figure. 


30 H. Multifida (Rich. hyd. no. 44. f. 34.) plant glabrous; leaves palmately cut; segments 5, somewhat 3-lobed; middle segment the longest; peduncles glabrous, longer than the petioles, which are pilose; umbels 3-5-flowered; flowers distinctly pedicellate; fruit glabrous, distinctly villous, with 2 ribs on both sides. 

29 H. B. Native of New Granada, on the Andes, in humid shady places near Almaguer. 


29 H. Multifida-leaved Hydrocotyle. Pl. cr.

32 H. B. Native of Brazil. 

28 H. A. Native thinly hairy, sometimes the lower ones of the plant are only 1-flowered. 

29 H. A. Native of Mexico, near Jalapa in shalby woods. Said to be allied to H. leucocophala et H. Bompordii. 

Asiatic Penny-wort. Pl. cr.

30 H. repanda (Pers. ench. 1. p. 309.) plant villous; leaves cordate, reniform, on long petioles, 9-nerved, repandly toothed; petioles villous, much exceeding the peduncles; umbels capitulate, 3-flowered; fruit orbicular, furnished with 4 ribs on each side. 

29 H. B. Native of Louisiana, Carolina, Georgia, Chili, and the West India Islands, in humid and inundated places. 

29 H. B. Native of Chili, near Talcahuano. 

Bonpland's Penny-wort. Pl. cr.


32 H. díásteá (D. C. prod. 4. p. 63.) plant glabrous; leaves distant, on short petioles, reniform, 7-9-toothed, nearly veinless; umbels opposite the leaves, on short peduncles, 2-flowered; fruit flatly compressed, obicularly cordate, with the mericarps having 2 ribs on both sides. 2. B. F. Native of New Holland, at King George's Sound. Stems weak, dichotomous, climbing a little. Leaves hardly twice the size of the fruit. Pedicels of the fruit longer than the peduncles of the umbel.

Two-flowered Penny-wort. Pl. trailing or climbing.

33 H. ábbreviáta (Rich. hydr. no. 17. f. 19.) leaves reniform, with a broad recess, shorter than broad, with 9-11 crenatures, 7-nerved, glabrous; petioles pubescent, longer than the limbs; peduncles longer than the petioles; fruit rather turgid, furnished with 4 ribs on each side, reticulated. 2. B. F. Native of Madagascar and Cochín-china, in humid places. Trissanthus Cochín-chinese, Loud. rich. p. 175. Stems tufted, creeping. Petioles 7-8 lines long; limbs of leaves 6 lines broad, and 3 lines long. Pedicels an inch long. Involucrums 2-leaved. Very nearly allied to H. déntátum, but differs in the leaves being much shorter.

Short-leaved Penny-wort. Pl. cr.

34 H. nummularídeas (Rich. hydr. no. 11. f. 9.) leaves cordately reniform, 5-nerved, wholly or nearly so, with a narrow recess; petioles pubescent, longer than the limbs; umbels capitate, 3-flowered, on short peduncles; fruit orbicular or subglobose, striated. 2. B. S. Native of the Island of Bourbon, creeping along river banks. H. Asiática var. Cham. et Schlect. 1. c. Leaves 4-5 lines in diameter. Petioles 8-12 lines long. Peduncles 2-3 lines long. The central flower in each umbel is fertile, and the 2 lateral ones sterile. Moneywort-like Penny-wort. Pl. cr.

35 H. hébecaréa (D. C. prod. 4. p. 63.) leaves orbicularly reniform, toothed at the base, 7-9-nerved, crested at the apex, glabrous, on long petioles; surculi sarmentose, prostrate; pedicels axillary, villous, much shorter than the petioles; umbels capitate, few-flowered; fruit villous, reticulated; mericarps furnished with 2-3 ribs on each side. 2. B. F. Native of the Island of Timor. Petioles of radical leaves 4 inches long; limbs of leaves 2 inches broad. Three of the fruit in each umbel coming to perfection, rather large.

Hairstrewn Penny-wort. Pl. cr.

36 H. inéguípes (D. C. prod. 4. p. 63.) leaves when young, rather villous, but glabrous in the adult state: radical ones on long petioles, with a reniform crested 9-nerved limb, and a broad recess; umbels radical, on very short incurved, rather villous peduncles; leaflets of involucrum 2, ovate; fruit glabrous; mericarps furnished with 4 stripes on each side. 2. S. Native about Rio Janeiro. Petioles of radical leaves nearly a foot long. Peduncles half an inch long. Stems short, rather sarmentose, bearing leaves, which stand on short petioles. Unequal-petioled Penny-wort. Pl. 1 foot.

37 H. pállida (D. C. prod. 4. p. 65.) leaves reniform, glabrous, broadly and shortly crenate-toothed; petioles rather dilated at the base, longer than the peduncles; leaves of involucrum 2, ovate, obtuse, glabrous; umbels 3-flowered. 2. B. F. Native of the Cape of Good Hope. Burch. cat. geog. no. 1907. Fruit cordate, truncate at the apex, marked on both sides by 3 veins. Alnud. to H. invosstra, pale green.

Var. ? subíntegra (D. C. prod. 4. p. 63.) leaves nearly entire, broadly reniform; peduncles rather villous, shorter. 2. B. F. Native of the Cape of Good Hope.

Pales Penny-wort. Pl. prostrate.

38 H. brevípes (D. C. prod. 4. p. 63.) stems elongated, prostrate, rooting at the nodi; leaves on long petioles, reniform, with broad large obtuse lobe-like teeth, pilose above, and on the petioles, smoothish beneath; peduncles axillary, very short; umbels few-flowered, capitate, villous. 2. S. B. Native of Jamaica. H. leúptostachys ex Jamaica, Spreng. syst. 1. p. 876. Allied to H. eriántha, but differs in being prostrate, as well as to H. macródus, but differs in the teeth of the calyx being blunt; also to H. leúptostachys, but the inflorescence is truly distinct. Short-peduncled Penny-wort. Pl. prostrate.

39 H. fráctaeá (D. C. prod. 4. p. 668.) leaves reniformly cordate, bluntly crenate, on long petioles; nerves, peduncles, and peduncles rather hairy; peduncles much shorter than the petioles; umbels capitate, 2-3-flowered; leaves of involucrum 2, permanent, ovate, rather villous on the outside; mericarps very much compressed, reticulately 3-5-nerved, having the back hairy at the apex. 2. S. Native of Africa, at Cape Verd, in marshes at Khami. Allied to H. eriántha and H. pállida.

Breasteed Penny-wort. Pl. cr.


Hairy-flowered Penny-wort. Pl. sarmentose.

41 H. macródus (Spreng. syst. 1. p. 877. exclusive of the synonyms,) the whole plant covered with spreading hairs; leaves cordately reniform, coarsely 3-9-toothed: teeth or lobules acute, equal, quite entire; peduncles shorter than the pedioles; umbels capitate, few-flowered; leaves of involucrum 2, large, ovate, acuminate, pilose; fruit ovate, with many ribs, wrinkled. 2. G. Native of the Cape of Good Hope,1. Native of the Cape of Good Hope; allied to H. eriántha, but easily distinguished from it by its smoothness, by the teeth of the calyx being acute, and by the nerves of the leaves being 5, not 7, &c.

Beautiful-toothed-leaved Penny-wort. Pl. prostrate.

42 H. americána (Lin. spec. 234.) plant quite glabrous; leaves orbicularly reniform, a little lobed, doubly crenated, 9-nerved; umbels capitate, 3-flowered; upper ones nearly sessile; lower ones on short peduncles. 2. B. H. Native of North America, in boggy or swampy places, from Canada to
UMBELLIFERÆ.

Carolina; and probably of South America, if the synonym of Laetia, itin. p. 281. is referable to the species. Lam. dict. 3. p. 152. Rich. hydr. no. 19. f. 10. Spreng. umb. no. 3. t. 2. f. 3.

*Var. a, flexicaulis* (Michx. fl. bor. amer. 1. p. 162.) stems more firm, shorter, and as if they were flexuous.

*Var. b, gracilis* (Michx. l. c.) plant more slender, filiform, not flexuous; leaves smaller.


44. *H. Multicaulis* (Pohl, in litt. 1828, ex D. C. prod. 4. p. 64.) plant creeping; leaves on long petioles, glabrous, reniformly orbicular, 7-nerved, and somewhat 9-lobed: each lobe with 3 crenatures; petioles shorter than the peduncles, both bearded with pili at the apex; umbels capitulate, 15-20-flowered; fruit glabrous, ribbed, emarginate at both ends. *γ.* B. S. Native of Brazil. Leaves and inflorescence like those of *H. Americana.*

Many-stemmed Penny-wort. Pl. cr.

45. *H. rotundifolia* (Roxb. hort. beng. p. 21.) plant tufted and creeping; leaves petiolate, reniformy orbicular, 7-nerved, bluntly 7-lobed, dentately crenated, hispid beneath, glabrous above; umbels opposite the leaves, nearly sessile, 7-9-flowered; fruit glabrous, acutely 5-ribbed. *γ.* B. F. Native of the east of Bengal, in Silhet. Petioles twice the length of the limbs of the leaves, and are as well as the stems glabrous.

Round-leaved Penny-wort. Pl. cr.

46. *H. tenei* (D. Don, prod. fl. nep. p. 182.) plant tufted and creeping; leaves reniform, somewhat 7-lobed, crenated, quite glabrous, shining; umbels capitulate, sessile, few-flowered.

*γ.* B. H. Native of Nipal. Allied to *H. nitidula,* but differs in the leaves being less lobed, in the petioles being shorter, and in the umbels being sessile.

Pilant Penny-wort. Pl. cr.

47. *H. Ala* (Rich. hydr. no. 50. f. 28.) plant quite glabrous; stems erect, winged, compressed; leaves cordate, bluntly hastate, on short petioles; peduncles longer than the petioles; umbels 4-6-flowered; pedicles quite distinct; fruit lenticular, compressed, furnished with 10 ribs on both sides. *γ.* B. F. Native of New Holland. H. pusilla, R. Br. incert. but not of Rich.

Winged Penny-wort. Pl. ½ to 1 foot.

48. *H. muscosa* (R. Br. in Rich. hydr. no. 45. f. 27.) plant rather hairy; leaves palmate; segments 5-5, narrow, cuneated, tridentate at the apex; peduncles shorter than the petioles; umbels somewhat capitatum, 6-8-flowered, fruit orbicular, rather compressed, having 2 ribs on both sides. *γ.* B. F. Native of New Holland. Petioles nearly an inch long, glabrous.

Mossy Penny-wort. Pl. cr.

49. *H. Tripilata* (R. Br. in Rich. hydr. no. 46. f. 25.) plant rather pilose; leaves palmate; segments 3, cuneated, deeply toothed; lateral ones usually bifid; peduncles much shorter than the petioles; umbels rather capitatum, 6-10-flowered; fruit orbicular, didymous, furnished with 2 ribs on both sides. *γ.* B. F. Native of New Holland. Slowly nearly sessile in the umbel, but after the flowers have decayed the pedicels lengthen a little.

Tripilate-leaved Penny-wort. Pl. cr.

*** Umbels capitatum, many-flowered, especially with from 8 to 50 nearly sessile flowers.


I. HYDROCYTONE.


51. *H. Polyphylla* (D. C. prod. 4. p. 65.) plant trailing, rooting at the joints; leaves orbicular, cordate, with a narrow recess, crenated, 9-11-nerved, glabrous on both surfaces, as well as on the petioles; peduncles villous at the apex; umbels 20-flowered, densely capitata; pedicels elongated after flowering, the fruit is therefore pedicellate; fruit orbicular, minutely dotted; mericarps furnished with one rib on each side. *γ.* B. S. Native of Brazil, in the neighbourhood of Rio Janeiro. Peduncles shorter than the petioles, rarely longer. The disposition of the flowers is intermediate between the first and second division of the genus.

Many-rooted Penny-wort. Pl. cr.


Thickened Penny-wort. Pl. cr.

53. *H. Nefalennis* (Hook. exot. fl. 1. t. 30.) the whole plant scabrous from short scattered hairs; leaves orbicular reniform, 7-lobed, crenately toothed; flowers monoeocious; umbels globose, many flowers, dense; fruit turbid, without ribs. *γ.* B. H. Native of Napal, in wet places. Some of the umbels apparently contain only male flowers, while others contain only female ones; these flowers are on short pedicels while young, but afterwards these pedicels gradually lengthen out. It comes very near to *H. capitata,* and according to Sprengel is probably not distinct from it.

*Var. a, brevipes* (D. C. prod. 4. p. 65.) peduncles at their greatest length shorter than the petioles.

*Var. b, longipes* (D. C. l. c.) peduncles when bearing the fruit longer than the petioles. H. hispida, D. Don, fl. nep. p. 189.


Capitate-flowered Penny-wort. Pl. cr.

55. *H. Globifera* (Ruiz et Pav. fl. per. 3. p. 25. t. 247. f. a.) plant hairy from short down; leaves roundish-reniform, 13-nerved, rather lobulate, crenated; peduncles a little shorter than the petioles; umbels globose, many flowers. *γ.* B. F. Native of Peru, in humid places in woods by stagnant water, near Muna. Nerves of leaves and fruit fulvous. Leaves of involucrum numerous, linear, and short. Flowers in each umbel about 200.

Globeflower Penny-wort. Pl. cr.

56. *H. Citriodora* (Ruiz et Pav. fl. per. 4. p. 26.) leaves reniform, 7-9-lobed, crenated, and are, as well as the pedicels, hairy, but pubescent beneath, as well as on the branches; peduncles densely villous, length of the petioles; umbels small, many flowers, globose. *γ.* B. F. Native of Chili, in shady humid places about Concepcion; and of Peru, in the tract of Huanao, as well as of Brazil according to Pohl.

Citrus-scented Penny-wort. Pl. cr.

57. *H. Ranunculoides* (Linn. fil. suppl. p. 177.) plant glabrous; leaves orbicularly reniform, 5-nerved, and somewhat 5-lobed; lobes obtuse, somewhat crenated: middle lobe more prolonged than the rest; peduncles shorter than the petioles; umbels 5-12-flowered; flowers pedicellate. *γ.* B. H. Native of North America, in Pennsylvania and Mexico; and of South
UMBELLIFERÆ. I. HYDROCOTYLE.


Shining-leaved Penny-wort. Pl. cr. 59 H. sinuiformis (Lam. dict. 3. p. 155.) plant quite glabrous; leaves orbiculiferum, doubly crenated, 3-lobed, 7-lobed, 7-nerved; peduncules slender, about equal in length to the pediolo; umbels 6-8-flowered, capitate; fruit rather dilyvidous, furnished with 2 ribs on each side. 0. F. Native of the Mauritius. Cham. et Schlecht. in Linnae. 1. p. 273. in a note. H. ranunculoides β, Schultes, syst. 6. p. 349. Chondrocarpus sinuiformis, Sweet, hort. brit. p. 185.

Silbithorin-like Penny-wort. Pl. May, July. Cat. 1806. Pl. cr. 60 H. e'legans (Rich. hydr. no. 33. f. 32.) plant glabrous; leaves semi-cleft: lobes tridentate at the apex; peduncules 3 times shorter than the pediolo; umbels capitate, 6-8-flowered; fruit dilyvidous, furnished with 2 ribs on each side. 2. B. F. Native of New Holland. Leaves 4 lines in diameter: pediolo nearly an inch long.

Elegant Penny-wort. Pl. cr. 61 H. pulchella (R. Br. in Rich. hydr. no. 34.) plant glabrous; leaves reniform, rather petiolate, 5-nerved, 5-lobed: lobes bluntly tridentate; peduncules equal in length to the pediolo; umbels capitate, 10-flowered; fruit dilyvidous, furnished with 2 ribs on each side. 2. B. G. Native of New Holland, near Port Jackson. Petiolo an inch long. Heads of flowers small.

Nest Penny-wort. Pl. cr. 62 H. nitidula (Rich. hydr. no. 35. f. 33.) plant quite glabrous; leaves orbiculiferum, 5-7-lobed: lobes tridentate; pediolo 2 or 3 times longer than the peduncules; umbels capitate, 6-10-flowered. 2. B. S. Native of Java. Hook. exot. fl. 1. t. 29. Allied to H. pulchella. Perhaps the same as H. ranunculoides var. incisa, Blum. bijdr. p. 884.

Small-shining Penny-wort. Pl. cr. 63 H. minutula (Pohl, in litt. 1828. ex D. C. prod. 4. p. 66.) stems creeping; leaves on short petiolo, orbicular, cordate, with a narrow recess, crenated, 7-nerved, pilose above, and on the upper part of the petiolo; peduncules rather pilose, 3 times longer than the petiolo; umbels 8-10-flowered, rather capitate; fruit small, roundish. 2. B. F. Native of Brazil. Petiolo 2 lines long. Limb 2-3 lines in diameter. There is a variety with glabrous leaves according to Pohl.

Minute Penny-wort. Pl. cr. 64 H. indecora (D. C. prod. 4. p. 668.) stems creeping, smoothish; petiolo hairy, 5 times longer than the limbs of the leaves, which are orbiculiferum crenate, 3-lobed, toothed, and rather pilose; peduncules hairy, a little shorter than the petiolo; fruit small, ovate, glabrous, densely aggregate into a globose head; mericarps furnished with one rib on each side. 2. B. F. Native of Chili. Poepp. pl. exsic. no. 98. Habit of H. sinuiformis or H. minutula.

Undecked Penny-wort. Pl. cr. 65 H. heteromera (Rich. hydr. no. 36.) plant glabrous; leaves reniform, 7-nerved, 7-lobed: lobes obtuse, crenate; pediolo much shorter than the petiolo, which are flaccid; umbels 6-8-flowered, capitate; fruit smooth on one side, and tubercular on the other, wrinkled and discoloured, furnished with one rib on both sides. 2. B. H. Native of New Zealand. H. flaccida, R. Br. mss. Petiolo 2-4 inches long.

Variable-parted Penny-wort. Pl. cr. 66 H. compacta (Rich. hydr. no. 27.) plant villous; leaves orbiculiferum, small, 7-11-flowered, deeply toothed; peduncules very short, in fascicles; umbels 15-20-flowered, densely capitate; fruit rather dilyvidous, furnished with 2 ribs on each side. 2. H. Native of New Zealand. H. capitata, Banks and Sol. mss. but not of Pet. Th.

Compact-headed Penny-wort. Pl. cr. 67 H. peduncularis (R. Br. in Rich. hydr. no. 38. f. 26.) leaves small, orbiculiferum, deeply toothed, rather 5-5-lobed, glabrous above, hairy beneath; peduncules equal in length to the petiolo; umbels capitate, 6-8-flowered; fruit lenticular, with 2 nearly obsolete ribs on both sides. 2. B. F. Native of New Holland. Perhaps the same as H. peduncularis, Sieb. nov. holl. exsic. no. 114. which is said to be glabrous; or it is perhaps referrible to H. pulchella.

Peduncular Penny-wort. Pl. May, Aug. Cat. 1828. Pl. cr. 68 H. intertexta (R. Br. in Rich. hydr. no. 39.) plant glabrous; leaves irregularly 3-5-lobed, 3-5-flowered: lobes denticulate: middle lobe more prolonged than the rest; pediolo and peduncules equal among themselves; umbel densely capitate, 12-15-flowered; fruit scabrous from wrinkles, furnished with 2 ribs on both sides; carpophore permanent, undivided. 2. F. Native of New Holland.

Interweven Penny-wort. Pl. cr. 69 H. nauta (R. Br. in Rich. hydr. no. 40.) leaves orbiculiferum, hairy on both surfaces, 7-nerved, 7-lobed, crenate; pediolo hairy; peduncules one-half shorter than the petiolo; umbels densely capitate, 20-flowered; fruit rather dilyvidous, furnished with 2 ribs on each side. 2. B. F. Native of New Holland. Leaves distant. Petiolo hardly an inch long. Stipulas membranous, permanent.

Iairy Penny-wort. Pl. cr. 70 H. nova-zeelan(dle) (D. C. prod. 4. p. 67.) leaves orbiculiferum, hairy on both surfaces, as well as on the petiolo, 7-nerved, obliquely 7-lobed, acutely and irregularly toothed; peduncules glabrous, 4 times shorter than the petiolo; umbels densely capitate, 10-12-flowered; fruit rather dilyvidous, furnished with one rib on each side. 2. ? H. Native of New Zealand. Petiolo 12-15 lines long. Stipulas as in H. hirta.

New-Zealand Penny-wort. Pl. cr. 71 H. densiflora (D. C. prod. 4. p. 66.) plant hairy; leaves orbicular, cordate at the base, 7-9-nerved, 7-9-lobed: lobes broad, hardly acute, a little toothed; peduncules opposite the leaves, about equal in length to the petiolo; umbels densely capitate, 30-40-flowered; fruit rather dilyvidous, and are as well as the pedicels glabrous; mericarps furnished with one rib on both sides. 2. ? F. Native of New Holland. Nearly allied to H. hirta, but differs from it in the pedicels being the length of the petiolo, not very short, and in the leaves being cordate, not reniform.

Dense-flowered Penny-wort. Pl. cr. 72 H. hirsuta (Blum. bijdr. p. 884. but not of Swartz nor Spreng.) stems creeping; leaves orbiculiferum, cordate, somewhat 5-lobed, crenate, villosous; umbels capitate; 7-11-flowered, pedunculate, usually mitrate; mericarps furnished with 3 ribs. 2. ? S. Native of Batavia, in grassy places by the sea side. It differs in the inflorescence from H. hirsuta of Swartz, which is the H. spicata of Lam. H. hirsuta of Spreng. is a congers of species very different from each other.

Iairy Penny-wort. Pl. cr. 73 H. globata (Blum. bijdr. p. 885.) stems creeping; leaves roundish-cordate, angular, and are, as well as the pedicules,
UMBELLIFERÆ. I. Hydrocotyle.

Flowers disposed in verticillate interrupted spikes.

81 H. spicata (Lam. dict. 3. p. 153.) leaves reniformy cor- 
date, roundish, 7-nerved, crenated, rather hairy on both surfaces 
from scattered hairs; petioles and peduncles hairy, 
peduncles 3 
times longer than the petioles; flowers in glomerate whorles, 
disposed in interrupted spikes; fruit didymous, without ribs. 2. ? B. S. Native of St. Domingo and Porto Rico, &c. 
in humid parts of mountain woods. Rich. hydr. no. 25. f. 15. 
occ. 2. p. 560. but not of Spreng. nor Blum.

82 H. braehysta-chya (D. C. prod. 4. p. 68.) stems filiform, 
low, smoothish; leaves reniform-roundish, 7-nerved, crenated, 
pilose on both surfaces; petioles shorter than the leaves, hairy; 
peduncles twice the length of the petioles, hairy; spikes oblong, 
continuous; fruit didymous, without ribs. 2. ? S. Native of 
St. Domingo.

Short-spiked Penny-wort. Pl. cr. 
83 H. letofsa-chya (Rich. hydr. no. 26. t. 16. exclusive of 
the country,) leaves reniform, 7-nerved, crenated, rather pilose 
above, glabrous beneath; petioles nearly 3 times longer than 
the limbs, and are, as well as the peduncles, pilose; flowers 
disposed in interrupted spikes, with the whorles of flowers very 
remote; fruit orbicular, didymous, without ribs. 2. B. S. Native 
of Cuba, in humid places near the Havana. H. B. et Kunth. 
ov. gen. amer. 5. p. 23. Spreng. syst. 1. p. 875. exclusive of 
the variety from Jamaica. Very like H. spicata, but differs in 
the leaves being glabrous beneath, in the whorles being remote, 
and containing few flowers; and in the peduncles not exceeding 
the leaves.

Slender-spiked Penny-wort. Pl. cr. 

Sect. II. Centella (meaning unknown to us). Lin. gen. 1051. 
Lag. obs. aparas. 26. D. C. prod. 4. p. 68. Stems shrubby, erectis- 

t. Leaves cuneated at the base, with the exception of only one 
species, neither peltate nor cordate, as in the first section. Fruit 
less compressed, with many ribs.—This section will perhaps form 
a distinct genus when the fruit of the species is better known.

* Petals villous.

84 H. villosa (Lin. fil. suppl. p. 175.) the whole plant more 
or less villous; leaves cordate, acute, nearly entire, 3-nerved; 
stem erectish, branched; peduncles shorter than the pedioles; 
umbels 3-flowered, capitule. 5. G. Native of the Cape of 
Good Hope. Thunb. diss. 2. p. 413. Cham. et Schlecht. l. c. 
p. 273. Mercurealiis Afra, Lin. mant. p. 298. Centella villosa, 
Lin. syst. veg. 13. p. 708. There is a larger variety with leaves 
an inch long, and a smaller variety with leaves hardly 3-4 lines 
long. Leaves nearly entire, obtuse, with a little point. Pedicels 
1-flowered, some of them shorter than the petioles, but usually 
longer.

diss. 2. p. 415. t. 3.) the whole plant clothed with tomentum; 
leaves oblong-cuneiform, narrow, 3-5-toothed at the apex; stem 
erectish; peduncles rising in fascicles, very short; fruit elliptic, 
compressed, furnished with 4 ribs on each side. 5. G. Native of 
prod. p. 34. Allied to H. villosa from the villous petals, and to 
H. Solidandra in the form of the leaves.

Tridentate-leaved Penny-wort. Pl. ½ foot.

* * Petals glabrous.

86 H. tri'loba (Thunb. diss. 2. p. 416. t. 3.) plant gla- 
brous; leaves broadly wedge-shaped, 3-5-nerved, 3-5-toothed 
at the apex; teeth broad, acute; peduncles shorter than the


87 H. SOLA'NDRA (Lin. fil. suppl. 176.) the whole plant clothed with hoary tormentum, the petals only excepted; leaves petiole, obliquely cuneiform, bluntly 7-toothed at the apex; umbels pedunculate, 3-5-flowered; flowers on short pedicels; leaves of involucrum ovate-lanceolate, glabrous inside. 7. G. Native of the Cape of Good Hope, on hills. Lam. dict. 3. p. 155. Rich. hydr. no. 55. H. tormentosa, Thunb. (c. 2. p. 416. Spreng. in Schultes, syst. 6. p. 593. Solanda Capéminis, Lin. spec. 1407. exclusive of the synonymes. Perhaps numerous species are here confused.

Var. a, lângipes (D. C. prod. 4. p. 69.) peduncles exceeding the leaves in length.

Var. $\beta$, comminimis (D. C. l. c.) peduncles length of the leaves. —Lam. ill. t. 188. f. 5. Sieb. cap. excis. no. 140.

Var. $\gamma$? longifolia (D. C. l. c.) peduncles much shorter than the leaves; leaves cuneate, elongated. Native of the Cape of Good Hope. Burchell. Perhaps a proper species.

Solander's Penny-wort. Pl. $\frac{1}{4}$ foot.

88 H. CENTÉLLA (Cham. et Schlecht. in Linna. 1. p. 375.) plant shrubby; leaves oblong, cuneate or lanceolate, 3-nerved, quite entire; umbels pedunculate, 3-5-flowered, with usually only one male flower; leaves of involucrum ovate-lanceolate; petals glabrous. 7. G. Native of the Cape of Good Hope, where the plant varies much in form and habit.


Var. $\beta$, lânejflóa (D. C. l. c.) leaves glabrous, cuneiformly oval. H. buleucreofoia, Rich. hydr. no. 55. f. 59.


Var. $\delta$, plantâgenêa (D. C. l. c.) leaves lanceolate from hairs, oblong. H. plantaginéa, Spreng. neue entl. 1. p. 284. grundz. t. 8i. f. 5-7.

Centella Penny-wort. Pl. $\frac{1}{4}$ foot.

89 H. MONTÁNA (Cham. et Schlecht. in Linna. 1. p. 374.) plant shrubby, when young villous, at length glabrous; leaves lanceolate, quite entire or somewhat tridentate, 3-nerved; petioles villous; umbels 3-flowered, on short pedicels; leaves of involucrum 2, twice the length of the nearly orbicular corolla fruit. 7. G. Native of the Cape of Good Hope, on the tops of mountains. A humble depressed branched shrub. Medicars tumid, with 5 filiform ribs, and flatish furrows.

Mountain Penny-wort. Shrub depressed.

90 H. virgá'ta (Lin. fil. suppl. p. 176.) plant shrubby, erect, branched; leaves linear-liniform, quite entire; umbels pedunculate, 1-5-flowered; flowers hardly pedicellate; leaves of involucrum lanceolate; fruit orbicular, orbiculate, furnished with 2 ribs on opposite sides. 7. G. Native of the Cape of Good Hope, et Cham. et Schlecht. in Linna. 1. p. 379.

Var. a, glâbrescens (D. C. prod. 4. p. 69.) plant twiggy, quite glabrous; flowers pentameros and monoecious. H. virgá'ta, Lam. ill. t. 188. f. 5. Spreng. syst. 1. p. 878.

Var. $\beta$, lânejflóa (D. C. l. c.) plant twiggy, clothed with lanuginous villi; flower polygamo-monoecious; leaves expanded into linear lamina at the apex. Cham. et Schlecht.

Var. $\gamma$, macrâcorpa (D. C. l. c.) plant twiggy, glabrous; flowers polygamo-dioecious; fruit larger.—H. macrâcorpa, Rich. hydr. no. 57. f. 40.—Pluk. alm. t. 310. f. 7.

Var. $\delta$, nana (D. C. l. c.) plant short, glabrous; flowers polygamo-dioecious.

Twiggy Penny-wort. Pl. $\frac{1}{4}$ to $\frac{1}{2}$ foot.

† Species not sufficiently known.

91 H. flu'tâns (D. C. prod. 4. p. 69.) stems submersed, straight, fissilur; leaves peltate, orbicular, shining, floating; petioles thickened from the base to the apex. 7. W. H. Na- tive of Louisiana, floating in lakes and tranquil rivers, through immense tracts. H. incrassâtum, Rafin. fil. lud. p. 81. but not of Ruis and Pav. Hydrocotyle Robín, Louis, p. 461. ex Rafin. It grows also in water in Florida, very common. The stems have numerous fibres, issuing from the joints. The leaves are on long petioles, orbicular, peltate, and 15-20-nerved, glabrous, bluntly somewhat lobed and crenated. Very like H. nâtans, but differs in the leaves being peltate.

Floating Penny-wort. Pl. floating.

92 H. hederâfoliâ (Burch. cat. geogr. no. 558. trav. 1. p. 46.) plant decumbent, villous; leaves reniform, 3-5-angled; angles acute. 7. G. Native of the Cape of Good Hope. The rest unknown.

Teg-leaved Penny-wort. Pl. decumbent.

93 H. racemósâ (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 4. p. 70.) plant glabrous; leaves petiole, orbicularly re- niform, broadly crenated, with a narrow recess; peduncles twice the length of the leaves; flowers pedicellate, verticillate, disposed in interrupted racemes; fruit nearly globose. 7. F. Native of Mexico. Stems creeping. Leaves rising from the nodi of the stems in fascicles; petioles 15-15 lines long. Allied to H. interrâõpia, but the leaves are not peltate; and H. spiclâta, but the flowers are evidently pedicellate.

Racemose-flowered Penny-wort. Pl. cr.

94 H. grumósa (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 4. p. 70.) plant glabrous; stems ascending; root grumose, fascicled; petals dilated and stem-clasping at the base; leaves orbicular, crenate, umbels in fascicles; flowers distinctly pedicellate. 7. B. F. Native of Mexico. Grumose-rooted Penny-wort. Pl.

95 H. pinatâfida (Spreng. pug. 2. p. 47.) stems erect, glabrous; leaves pinatitud; segments oblong, a little cut; umbels usually 3-flowered, involucrated.—Native country unknown. In Sprengel's subsequent works this plant is not admitted, and the name is omitted as a synonyme: it is therefore very doubtful.

Pinatifid-leaved Pennywort. Pl. ?

Cult. All the species are of the most easy culture, but require to be kept moist. The stove, greenhouse, and frame kinds should be grown in pots, under which should be placed pans of water.


Linn. syst. Pentândria, Digîânya. Tube of calyx nearly globose; limb very short or hardly any. Petals roundish, entire, obtuse. Styles obtuse. Fruit with the commissure nearly orbicular from the excavation; medicinal unequal, furnished with 3 ribs on the back (ex Nutt.), but according to Koch 8 filiform ribs: the lateral ones marginal, broader, thick
white and spongy inside; the channels between the ribs furnished with 1 brown distinct vitta each, and the commissure with 2 vittae.—Small, glabrous, creeping herbs. Leaves sessile, narrow, obtuse, quite entire, lined with 5 transverse nerves, as the seminal leaves and petals of *Eryngium* *cornutum*. Peduncles axillary, erect. Umbels simple, 8-10-flowered. Involutum 5-6-leaved. Flowers white, pedicellate, hermaphrodite, uniform.


$\gamma$. B. F. Native of Buenos Ayres. Differing from C. lineata remarkably in its much longer and attenuated foliage. Attenuated-leaved Crantzia. Pl. cr.

Cult. See Hydrocotyle above for culture and propagation.

III. Dimetop'ia (from $\epsilon_{\mu}$trω$\sigma$os, $\delta$metopos, having 2 faces; in reference to the mericarps of the fruit being unlike each other). D. C. prod. 4. p. 71.

Lin. syst. Pentandria, Digynia. Teeth of calyx obsolete. Petals ovate-oblong, entire. Styles short. Fruit didymous; mericarps nearly globose, rather contracted at the commissure, of unequal shape and size; the one mucroned with rows of blunt compressed tubercles, the other echinated by conical tubercles, which are drawn out at the apex into soft prickles. Seed?—An annual herb, hardly a finger in height. Stem short, branched, beset with scattered pili. Leaves triplicate; lobes cuneate, linear-oblong, bluntly tridentate at the apex, or trifid. Peduncles opposite the leaves, and longer than them. Umbels simple, usually 5-flowered. Involutum of 5 linear-lanceolate leaves, which are the length of the flowers. Flowers white.

Habit almost of *Eriogena*; the fruit agrees with that of *Sanicula*, and the petals with those of *Hydrocotyle*.

1. D. pusilla (D. C. l. c.). O. H. Native of New Holland, at King George's Sound, and at Port Western. Small Dimetopia. Pl. $\frac{3}{4}$ foot.

Cult. Sow the seeds in a warm sheltered situation, in the open ground.

IV. Eriogena (from $\epsilon$ρεγενεια, *erigeneia*, the name of Aurora, the harbinger of day or of the spring; in allusion to the early appearance of the plant in spring). Nutt. gen. amer. 1. p. 187. D. C. coll. mem. 5. p. 27. prod. 4. p. 71. —Hydrocotyle species, Pursh. and Spreng.—Sison, spec. of Michx.

Lin. syst. Pentandria, Digynia. Margin of calyx obsolete. Petals equal, obovate, expanded, entire. Styles permanent, subulate, very long. Fruit ovate-lanceolate, laterally compressed; mericarps gibbously convex, marked with 3 stripes; commissure flat, without a margin.—A small, smooth herb. Root tuberous, globose. Leaves 1-2, radical, petiolate, biternate. Umbels irregular, imperfect, 3-4-rayed; umbellules 2-3-flowered. True involucrewanting, but in place of it there is a multifid leaf; leaves of involucel few, unequal. Petals white. Anthers exerted, dark purple. This genus agrees with *Ammi* in the compound inflorescence, and with *Bunium* in the tuberos root.


IV. Eriogena. V. Micropleura. VI. Didiscus.


Bulbous-rooted Eriogena. Pl. $\frac{3}{4}$ foot.

Cult. This plant should be grown in a pot, under which should be placed a pan of water.

V. Micropleura (from $\mu$ςρoς, micros, small, and $\pi$λευρος, *pleura*, a rib; the ribs of the fruit are small and capillary). Lag. obs. apars. p. 15. D. C. coll. mem. 5. p. 27. prod. 4. p. 71.

Lin. syst. Pentandria, Digynia. Margin of calyx obsolete. Petals equal, entire, acute. Fruit deeply cordate at the base, rather foliaceous, emarginate at the apex; mericarps compressed from the sides, obliquely ovate, 7-ribbed; ribs capillary, curved, ventricose below; the marginal 2 are shorter, and form a straight line; the commissure is very narrow, one half shorter than the mericarps.—Canescent glabrous herbs, natives of Chili, with the habit of *Hydrocotyle*; but the umbels are rarely compound. Mericarps of fruit probably 9-ribbed, having 2 of them obsolete or hidden.

1. M. renifolia (Lag. l. c.). Native of the Island of Chiloe. Petioles dilated at the base. Leaves alternate, petiolate, coriaceous, 6-9-nerved, and veined, crenate, rather membranous. Umbels terminal, pedunculate, 4-5-rayed; involucre foliaceous, composed of 1 leaf; umbellules 3-4-rayed, surrounded by small, 3-4-leaved involucelles. Flowers 3, middle one fertile and nearly sessile, and the 2 lateral ones male, on short pedicels.

Kidney-leaved Micropleura. Pl. cr.

Cult. See *Hydrocotyle* for culture and propagation, p. 255.

VI. Didiscus (from $\epsilon$ς, dis, twice, and $\epsilon$ςως, dishos, a disk; the mericarps appear like 2 disks). D. C. coll. mem. 5. p. 28. t. 4. Hook. bot. mag. t. 2875.—Lämp. Lindl.—Hugîlia, Rebb. consp. t. 144.

Lin. syst. Pentandria, Digynia. Margin of calyx obsolete. Petals oval, entire, bluntish (f. 57. c.), imbricate in restitution. Styles diverging. Fruit nearly like that of *Biscutella*, hence the name, emarginate at the base; mericarps very much compressed from the sides, without any vitta, a little mucronate, or beset with dot-like hairs, 5-ribbed; ribs filiform: the 2 inner ones near the commissure, very short: the 2 middle ones short and curvilinear: and the dorsal one a little winged. Seed much compressed. Carpophore undivided.—Hersbs, natives of New Holland. Stems terete, branched. Leaves variously parted, or lobed: lobes rather cuneated, cut. Umbels simple. Involutum of many leaves, which are concrete at the base (f. 57. a.). Perhaps merely a section of *Trachymene*, but the margin of the calyx is obsolete, not 5-toothed; the petals obtuse, not acute, and the fruit is compressed, not inflated, &c.

1. D. ceruleus (Hook. bot. mag. 2875. D. C. coll. mem. 5. t. 4.) plant hairy; leaves petiolate, 3-parted; having the partitions 2-5-cleft, and the lobes 2-3-toothed; umbels simple, on long peduncles; involucre of many leaves, when young reflexed. O. F. Native of New Holland. Trachymene cyanaca, Cunningham, mis. Trachymene corulea, Graham, in edinb. phil. journ. 1828. Sept. p. 373. Lindl. bot. reg. no. 1225. Hugîlia cyanaca, Rebb. icon. exot. t. 201. Flowers blue; each umbel having

FIG. 57.
the appearance of a head of the flowers of *Scabiosa Caucásica*, but the flowers are on longer pedicels; pedicels, after flowering, twisted inwards, bearing the fruit, which lies within the involu-
cel, but erect at maturity. Fruit, when young, rather hairy, but in the adult state it is covered with minute tubercles. This is one of the most showy plants of the order.

**Blue-flowered Didiscus.** Fl. July, Sept. Cl. 1827. Pl. 1 to 2 feet.

2 *D. Alibíflórus* (D. C. prod. 4. p. 72.) plant glabrous; radial leaves on long petioles, palmate; segments dilated at the apex, cut, toothed; cauline leaves few, small; umbels simple, on long peduncles. **f.** G. Native of New Holland, at Port Jackson. Trachymène incisa, Rudge, in Linn. trans. 10. p. 300. t. 21. f. 2. Fruit much compressed, beset with minute tubercles. Petals white.

**White-flowered Didiscus.** Cl. 1819. Pl. 1/2 foot. Cult. Sow the seed of these plants on a slight hot-bed in spring, and when the plants are 2 inches high, plant them separately into small pots, and shift them from size to size of pots as they grow.


**Linn. syst. Pentántiádria, Digényia.** Margin of calyx 5-toothed. Petals elliptic, entire, acutish, straight at the apex, rather valvate in estivation; styles diverging. Fruit didymous, compressed, and contracted from the sides; mericarps gibbously convex, without any vestis, 5-ribbed; the 3 dorsal ribs and their channels mucrinated with tubercles; lateral ones marginal. Carpophore unliivered. Seed gibbously convex, flattish in front.—Herbs or subshrub, all natives of New Holland. Umbels compound, many-rayed; umbellules containing 3-12 flowers. Involucrum of many leaves. This genus agrees with *Hydrocély* in the fruit being compressed; the rest agrees with *Azorélla*. *Pranóthera* of Rudge agrees with this genus in habit, but the structure of the flowers is very different, and most probably belongs to the order *Tremángiæ*.

**Sect. I. Platyümene (from πλάτυς, platys, broad; stems compressed).** D. C. prod. 4. p. 72. Plant herbaceous. Stems much compressed. Leaves small, cut.

1 T. *Ánceps* (D. C. prod. 4, p. 73.) plant glabrous, nearly leafless; stem 2-edged, branched; leaves also at the tops of the branches cut into a few fine lobes. **f.** G. Native of New Holland. It agrees with *Thémpérissa* in the stem being compressed, but it is one half narrower, the leaves more finely cut, the umbel much slender. The fruit has not been seen, but the analogy of the herb with the following species is sufficient to indicate its belonging to the same genus.

**Two-edged-branched Trachymène.** Pl. 1 foot.

2 T. *Thémpérissa* (Spreng. umb. spec. p. 9. exclusive of the Chili specimen) plant glabrous, nearly leafless; leaves very few, small, binate or terninate: upper ones linear, entire; stem 2-edged, branched. **f.** G. Native of New Holland, on the sandy coast. Azorélla compréssa, Labill. nov. holl. 1. p. 75. t. 101. Fruit compressed, obovate; mericarps convex on the back, 5-ribbed; ribs wrinkled from the tubercles. Involucrium shorter than the pedicels.

**Compressed Trachymène.** Pl. 1 foot.

**Sect. II. Dendrome`ne (from ἕνεκος, dendron, a tree; in reference to the species being shrubby).** D. C. prod. 4. p. 73. Plants shrubby. Leaves entire.

3 T. *Lineáris* (Spreng. umb. spec. p. 7.) plant quite gla-

brous, shrubby; leaves scattered, erect, linear, subulate and acute at the apex. **f.** G. Native of New Holland, at Port Jackson. Siebl. pl. excis. nov. holl. no. 126. Azorélla linearifólia, Cav. icon. 5. t. 485. Azorélla linearifólia, Pers. ench. 1. p. 503. Fruit obovate, compressed; mericarps 3-ribbed; ribs rough from rows of tubercles. Flowers yellow.

**Linear-leaved Trachymène.** Fl. Ju. Aug. Cl. 1824. Sh. 1 to 2 feet.

4 T. *Theusius* (D. C. prod. 4. p. 73.) shrubby; branches te-

rete, beset with glandular hairs at the apex; leaves scattered, spreading, linear, acute; umbels few-flowered. **f.** G. Native of New Holland. Branches very slender. Leaves hardly ½ line broad, and 3-4 lines long. Umbel trifid; umbellules 1-5-flowered. Ribs of fruit sebaceous from tubercles. Flowers like *T. ericoides*.

**Slender Trachymène.** Shrub 1 foot.

5 T. *Subvélutina* (D. C. i. c.) shrubby; branches tere-
cete, linear, thickish, acute, velvety from short crowded down, as well as the branchlets; umbels crowded. **f.** G. Native of New Holland, at Port Jackson. The leaves are almost like those of *T. ericoides*, but differ in being velvety and eretic. Branches hardly diverging.

**Rafort-velutinae Trachymène.** Shrub 1 foot.

6 T. *Ercoides* (Siebl. pl. excis. nov. holl. no. 121.) shrubby; branches rather angular, glabrous; leaves linear, acute, spreading; umbels crowded. **f.** G. Native of New Holland. Branches numerous, spreading. Leaves a line broad, with the margins hardly revolute when dried. Umbels 5-cleft; umbellules 5-6-flowered. Fruit sebaceous from tubercles on the ribs.

**Heath-like Trachymène.** Shrub.

7 T. *Lanceola`ta* (Rudge, l. c. Spreng. syst. l. p. 879.) shrubby; branchlets rather angular, glandular, and velvety when examined by a lens; leaves lanceolate-linear, nervèd, erect; umbels crowded, many-flowered. **f.** G. Native of New Holland. Azorélla lanceolaíta, Labill. nov. holl. 1. p. 74. t. 99. Leaves an inch and a half long, and 3 lines broad. Leaves of the involucrum the length of the umbel. Umbils 5-8-rayed; umbellules 8-10-flowered. Branches sometimes terminated by an 8-10-flowered, simple umbel.

**Lanceolate-leaved Trachymène.** Shrub 1 foot.

8 T. *Myrtifóli`a* (Siebl. pl. excis. nov. holl. no. 125.) shrubby; branches rather angular, hardly glandular or puberulous, even when examined by a lens: leaves oval-oblong, rather attenuated at both ends; umbels crowded, many-flowered. **f.** G. Native of New Holland. Very nearly allied to *T. lanceolaíta*, but differs in the leaves being 9-10 lines long, and 3 lines broad. Umbels 8-10-rayed; umbellules 8-12-flowered.

**Myrtle-leaved Trachymène.** Shrub.

9 T. *Ovalis* (D. C. prod. 4. p. 73.) shrubby; branches densely clothed with short hairs; leaves oval, nervèd, scattered, nearly sessile, hardly attenuated at either end; umbels many-flowered, crowded. **f.** G. Native of New Holland. T. ováta, Spreng. umb. spec. p. 8. (exclusive of the syn. of Labill.). Siebl. pl. excis. nov. holl. no. 124. Perhaps only a variety of *T. myrtifóli`a*.

**Var. **β, **confécta (D. C. l. c.) leaves and branchlets much crowded. **f.** G. Native of New Holland, at Port Jackson. Perhaps a proper species.

**Oval-leaved Trachymène.** Shrub 1 foot.

10 T. *Ováta* (Rudge, l. c. but not of Spreng. nor Siebl.) shrubby: branches smoothish; leaves broadly ovate, nearly sessile, hardly longer than broad; umbels crowded, many-flowered.

**L I**
UMBELLIFERÆ. VII. TRACHYMENE. VIII. Astrotricha. IX. Xanthosia. X. Bowlesia.

G. Native of New Holland. Azorëllá ovata, Labill. nov. holl. p. 74. t. 100. T. buxifolia, Sieb. pl. excis. nov. holl. no. 122. Leaves 4 lines long, and 3 lines broad. Umbels much crowded, small, 8-10-rayed.

Ovate-leaved Trachymene. Shrub.

Cult. All the species of Trachymène will grow well in a mixture of loam, peat, and sand; and they may be increased by cuttings, under a hand-glass, or by seeds.

VIII. ASTROTIRCHA (from aor, astron, a star, and thrís thrichos, a petiole; or in allusion to the stamens) D. C. coll. mem. 5. p. 29. 3. May. 6. prod. 4. p. 74. —Bolax species, Sieb. 

Lin. syst. Pentandria, Digynia. Tube of calyx ovate; limb small, hardly 5-toothed. Petals ovate, acutish (f. 58 b), permanent, flat, velvety from stellate down on the outside. Styles 2, filiform (f. 58 c.), not gradually thickening to the base. Fruit crowned by the calycine lobules and petals; mericarps ovate-oblong, contracted at the commissure; ribs very blunt, hardly prominent; of the primary ones there are 3 dorsal, and 2 marginal, which are more acute and not so evident: of the secondary ones 4; stamens wanting on the back, but there are 2 rather prominent ones in the commissure, which are covered by a spongy pellicle.—Australian, branched subshrubs, having the branches, petioles, under side of leaves, and umbels beset with white stellate hairs. Peduncles pannied, each ending in a simple, many-flowered umbel. Bracteas under the branches and branchlets solitary. Leaves of involucrum few and linear. Habit almost of Hérmis, but the fruit is very different. It differs from Bolax in habit, and in the fruit not being tetragonal.

1 A. floccosa (D. C. 1. c. t. 5.) the whole plant is clothed with flocks of angularise down; leaves ovate-lanceolate, obtuse at the base, and acuminate at the apex.

G. Native of New Holland. Bolax floccosae, Sieb. exsic. nov. holl. no. 258. Leaves 3-6 inches long and 12-15 lines broad; petioles half an inch long. 

Floky Astrotricha. Shrub.

2 A. ledifolia (D. C. 1. c. t. 7.) plant clothed with short adpressed down; leaves oblong-linear, coriaceous, acutish at both ends.

G. Native of New Holland. Bolax ledifoliæ, Sieb. exsic. nov. holl. no. 257. Leaves 20 lines long and broad; petioles 2 lines long.

Ledum-leaved Astrotricha. Shrub.

Cult. See Trachymène above for culture and propagation.


Lin. syst. Pentandria, Digynia. Tube of calyx ovate, compressed; limb 5-loped; lobes ovate, acute, coloured a little. Petals stipitate, ovate, cuspidate at the apex, replicate. Stamens opposite the calycine lobes. Stylodia (glands, Rudge) 2, thick, villous at the top of the mericarps. Styles 2, filiform, rising from the inner bases of the stylodia. Fruit compressed, striated; mericarps contracted at the commissure, 7-8-ribbed; ribs filiform: 2 lateral ones marginal; channels without vitrea, as well as the commissure, which is very narrow. —Australian subshrubs, usually covered with stellate hairs. Leaves alternate, simple, or triplicate. Umbels variable.

Sect. I. EUXANTHOSIA (this section is supposed to contain the true species of Xanthosia, from eux, well, and Xanthosia). D. C. prod. 4. p. 74. Umbels axillary, simple, or bifid. Leaves of involucrum small.

1 X. montana (Sieb. fl. nov. holl. exsic. no. 248.) the whole plant clothed with villi: some of them starchy, and others simple and elongated; leaves ternate, rarely 3-lobed; umbels axillary, nearly sessile, simple, 1-flowered; involucrum and involucres 2-leaved. G. Native of New Holland, on the mountains. X. pilosa, Rudge; the flowers are only referable to this plant.

Mountain Xanthosia. Shrub.

2 X. hirsuta (D. C. prod. 4. p. 74.) the whole plant clothed with hairs, some of which are stellate, and others simple and elongated; leaves sinuated, rarely 3-lobed; umbels axillary, pedunculate, bifid; umbellules 1-flowered; involucres 2-leaved; involucres 3-leaved. G. Native of New Holland, near Port Jackson. X. pilosa, Rudge, only in the form of the leaves. Sieb. pl. excis. nov. holl. no. 247.

Hearty Xanthosia. Shrub.

3 X. tridentata (D. C. prod. 4. p. 75.) young branches stigrose: adult ones glabrous; leaves cuneate, acutely tridentate at the apex, tomentose from stary down beneath, but glabrous in the adult state; umbels pedunculate, axillary, bifid; umbellules 1-flowered; involucres 2-leaved; involucres 2-3-leaved: leaves lanceolate.

G. Native of New Holland, at Port Jackson. Leucolaena tridentata, R. Br. mss. ex herb. mus. par.

Tridentate-leaved Xanthosia. Shrub.

Sect. II. LEUCOLAENA (from leucos, leucos, white, and chlaina, chlaina, a garment; in reference to the involucrum). D. C. prod. 4. p. 75. Umbels terminal, 3-4-rayed. Leaves of involucrum large, white.

4 X. rotundifolium (D. C. prod. 4. p. 75.) branches densely clothed with hairs, or rather rough from deciduous down; leaves reniformly orbicular, coarsely and acutely toothed; umbels 3-4-rayed; umbellules many-flowered; involucres and involucres 3-leaved.

G. Orbicular of New Holland, on the eastern coast. Crucíllæa càndida, Lesch. in herb. Juss. Leaves of involucrum lanceolate, hairy at the base: those of the involucres broader, somewhat cordate, apiculated, glabrous. Fruit more compressed in the young state.

Round-leaved Xanthosia. Shrub.

Cult. For culture and propagation see Trachymène, above.


Lin. syst. Pentandria, Digynia. Tube of calyx compressed tetragonal; limb 5-toothed. Petals elliptic, entire, acute. Fruit ovate, much contracted at the raphe, turged, rather tetragonal, flattish on both sides at the back; mericarps without vitrea, marked on the back by an oval impression; with 3 obsolete ribs: the 3 middle ones on the back: and the 2 lateral ones placed in the commissure, which is flat.—Weak, South American herbs, usually sebaceous from stellate down. Leaves petiolate, opposite, simple, lobed, or toothed. Umbels simple, axillary, few-flowered. This genus is allied to Spanántha.

1 B. palma (Ruiz et Pav. fl. per. 3. t. 251. f. a.) plant
UMBELLIFERÆ. X. BOWLESIA.

XI. FRAGOSA. XII. AZORELLA.

erectish, beset with scattered, stellate hairs in every part; leaves palmately parted; segments 3-5, jagged; umbels 3-flowered; upper ones on short, and the lower ones on long peduncles. O. H. Native of Peru, in the province of Chancay, on sandy hills. Plant 2 feet high, brittle, perhaps erect.

**Palmate-leaved Bowlesia.** Pl. 2 feet.

2 **B. lobata** (Ruíz & Pav. l. c. t. 251. f. b.) plant decumbent, covered over with all over with fascicles of bristles or stiffish hairs; leaves reniform, 5-7-cleft, or with 5-7 deep crenatures; umbels 3-5-flowered, pedunculate. O. H. Native of Peru, in busby places, on the Andes towards Pillaro. The bristles on the upper surface of the leaves are 3-5 in a fascicle: those on the rest of the plant are 8, and pedunculate.

**Lobed-leaved Bowlesia.** Pl. decumbent.

3 **B. inca'na** (Ruíz & Pav. l. c. t. 268. f. a.) plant procumbent, hoary from crowded stellate fascicles of hairs; leaves reniform-roundish, bluntly 5-7-cleft; lobes entire or tridentate; umbels axillary, on short peduncles. O. H. Native of Peru, on hills in the tract at Huancaco Rondos and Pillaro. Spreng. umb. spec. p. 13. t. 5. f. 10. Petioles permanent, rather tendril-shaped. In cultivation the plant however becomes smoother, longer, and more procumbent than in the wild state.

**Hoary Bowlesia.** Pl. procumbent.

4 **B. tropaeolífolia** (Gill. & Hook. in bot. misc. p. 325.) plant clothed with stellate down; stems procumbent, slender; leaves palmately 5-7- parted; segments lanceolate, bluntish, quite entire, with acute sinuses; peduncles 3-flowered; fruit small. \(\mathcal{L}. F.\) Native of Chili, in shady places at El Salto de San Isidro, and in the valleys of the Andes, towards Mendoza. Stems filiform.

**Var. \(\beta\), triparrtita** (Hook. et Arn. in bot. misc. p. 346.) the 2 lower lobes of the leaves approximating, small, coarsely tridentate from the middle. \(\mathcal{L}. F.\) Native of Chili, about Valparaíso.

**Triparted-leaved Bowlesia.** Pl. pr.

5 **B. te'nera** (Spreng. syst. p. 1. 880.) plant clothed with stellate pubescence; stems procumbent, slender; leaves on long pedioles, reniform, 5-7-lobed; lobes obtuse, bifid or trifid; peduncles short, bearing a 3-flowered umbel each. \(\mathcal{L}. H.\) Native of Chili, about Concepción, Valparaíso, Buenos Ayres, and Talcahuana; of Peru, on the mountains about Huancayo; and of Brazil, in dry fields about Monte Video, and at Porto Allegretto. Link. et Otto, abbild. t. 4. B. nodiflora, Presl. in Haenk. herb. ex D. C. prod. p. 75. B. geraniífolia, Cham. et Schlecht. in Linnaea. 1. p. 382. Hook. et Gill. in bot. misc. p. 324. B. incana, Hort. par.


6 **B. dichóroma** (Poeppig, diag. no. 363. excis. 95.) plant erect, dichotomous, hoary from stellate fascicles of hairs; leaves short, petiolate, ovate, coarsely tridentate at the apex; umbels 5-7-flowered, on long peduncles. \(\mathcal{L}. H.\) Native of Chili, about Valparaíso and the baths of Collina. Peduncles of umbels about equal in length to the leaves, or longer; sometimes simple, bearing an umbellule at the apex; sometimes bifid at the apex, bearing 2 linear leaves, each of the branches bearing an umbellule. This species, like the others, varies much in the proportionate length of the peduncles: they are, however, usually much shorter than the petioles.

**Dichotomus-peduncled Bowlesia.** Pl. 1 foot.

**Cult.** The seeds may be reared on a hot-bed in spring; and when the weather gets warm, the plants may be planted out into the open ground, in any warm sheltered situation.

XI. FRAGOSA (in honour of John Fragosa, first physician to Philip II. King of Spain). Ruíz et Pav. fl. per. prod. p. 48.


**Lin. syst. Pentándria, Digynia.** Margin of calyx 5-toothed, permanent. Petals oval, entire. Styles short. Fruit ovate, almost didymous; mericarps rather compressed from the back and contracted at the commissure; dorsal ribs filiform, with 2 other obsolete ones very like them at the commissure, vitte wanting.—Small, tufted, nearly stemless herbs, natives of the Andes of Peru. Leaves small, toothed, or 3-5-cleft, usually pilose. Umbels sessile or pedunculate; pedicels about equal in length to the involucrum.

1 **F. corymbosa** (Ruiz et Pav. fl. per. 3. p. 27. t. 250. f. a.) leaves imbricate, cuneiform, trifid, small, pilose on both surfaces; umbles simple, few-flowered. \(\mathcal{L}. F.\) Native of Peru, on the humid tops of the mountains called Muna at Tambo-Nuevo. Azorella corymbosa, Pers. Bó lax lycopodioides, Spreng. in Schultes. syst. 6. p. 361. Habit of *Lycopodiun* or *Bó lax*. Umbels 2-4-flowered. Superior leaves expanded in a stellate manner.

**Corybsoe-flowered Fragosa.** Pl. \(\frac{1}{2}\) foot.

2 **F. multifída** (Ruiz et Pav. fl. per. 3. p. 27. t. 249. f. a.) leaves ovate, deeply toothed, strigose above; petioles ciliated with bristles; umbels simple. \(\mathcal{L}. F.\) Native of Peru, on the Andes, near Huassa-Huassi. Azorella multifída, Pers. Bó lax multifídus, Spreng. Roots fusiform. Herb very short. Leaves 3-4 lines long. Leaves of involucrum subulate. Umbels few-flowered. Rich. ann. gen. sc. phys. 4. t. 51. f. 4. fruit only.

**Multifídé-leaved Fragosa.** Pl. \(\frac{1}{2}\) foot.

3 **F. crenàna** (Ruiz et Pav. fl. per. 3. p. 27. t. 249. f. c.) leaves ovate, or roundish-ovate, coarsely toothed, beset with bristly hairs on both surfaces, and on the petioles; umbels sessile, simple. \(\mathcal{L}. F.\) Native of Peru, on cold hills at Huassa-Huassi, in the province of Tarma, and in New Granada, ex H. B. et Kunth, nov. gen. amer. 5. p. 26. Azorella crenàna, Pers. Bó lax crenátus, Spreng. Branches pilose, very short. Herb low, tufted. Leaves numerous, 6-8 lines long. Umbels containing about 14 flowers. Involuturi composed of 7 linear-lanceolate leaves.

**Crenated-leaved Fragosa.** Pl. \(\frac{1}{2}\) foot.

4 **F. cladorízha** (Ruíz et Pav. fl. per. 3. p. 27. t. 250. f. b.) leaves ovate, deeply serrated, shining above; each serrature terminated by an acumen; petioles winged, pilose, ciliated; umbels simple, nearly sessile, many-flowered. \(\mathcal{L}. F.\) Native of Peru, on cold hills in the tract of Chavin, near Huamalíes. Azorella cladorízha, Pers. Bó lax cladorízhus, Spreng. Root thick, much branched. Limbs of leaves length of petioles, about 3-4 lines long. Leaves of involucrum ciliated with pili.

**Branch-rooted Fragosa.** Pl. \(\frac{1}{2}\) foot.

5 **F. reniformis** (Ruiz et Pav. fl. per. 3. p. 26. t. 249. f. b.) the whole plant densely clothed with pilis; leaves reniform, crenated; petioles more than twice the length of the limbs; scapes much shorter than the petioles; umbels simple, many-flowered. \(\mathcal{L}. F.\) Native of Peru, in shady places, at Huassa-Huassi, in the province of Tarma. Azorella reníformis, Pers. Petioles 3-4 inches long, with the limbs \(\frac{1}{2}\) inch in diameter. Scapes of umbels 10-12 lines long.

**Reniform-leaved Fragosa.** Pl. \(\frac{1}{2}\) foot.

**Cult.** If any of the species of this genus should ever be introduced to our gardens, we would advise their being grown in pots, in a mixture of sand and peat, and placed among other alpine plants, so that they may be protected in winter by a frame.

XII. AZORELLA (meaning not explained). Gaud. in ann. l. l 2
UMBELLIFERÆ. XII. Azorella.


LIN. SYST. Pentandria. Dígnia. Margin of calyx 5-toothed, permanent. Petals oval, entire. Styles short. Fruit ovate, contracted at the raphe, and rather compressed from the back; mericarps semi-ovate, without any ribs or vitae; ribs filiform, hardly conspicuous.—Humble tufted herbs, natives of Magellan. Leaves imbricate, entire or trifid, with the petioles sheathing or dilated. Umbels nearly sessile, 2-8-flowered; pedicels about equal in length to the involucrem. Perhaps this genus is hardly distinct from Fragosa.

1. A. arcticoides (Willd. herb. ex D. C. prod. 4. p. 77.) leaves imbricate, tripartite, coriaceus; lobes oblong, acutish; petioles thick and rather corylous, villous at the apex; umbels nearly sessile, simple, 4-flowered; leaves of involucrum 4, equal in length to the pedicels. Fr. F. Native of Quito, on the high mountain of Antisana. Fragosa arcticoides, H. B. et Kuntl, nov. gen. amer. 5. p. 27. t. 424. Bolax arcticoides, Spreng. spec. p. 11. exclusive of the synonyms and character. B. arcticoides, Spreng. in Schultes, syst. 6. p. 358, exclusive of the synonyms. Fruit a little ribbed. (ex Kuntl.)

Arctic-like Azorella. Pl. ¾ foot.

2. A. lycoperidoides (Gaud. in ann. sc. nat. 5. p. 105. t. 3. f. 1.) leaves imbricate, sheathing at the base, trifid, coriaceus; lobes subulate, acute; sheaths funnel-shaped, ciliately toothed; umbels almost sessile, 2-3-flowered; leaves of involucrum 2, serrated. Fr. F. Native of the Maclowe or Falkland Islands. D’Urrl, fl. mal. p. 47. This is a very different plant from Bolax lycoperidoides, Spreng, which is now Fragosa corimbosa.

Club-moss-like Azorella. Pl. ½ foot.

3. A. filamentosa (Lam. ill. t. 189. f. 1. Vahl. symb. 3. p. 47.) leaves oblong, coriaceus, quite entire, crowded; pedicels dilated, ciliated with long bristles; umbels nearly sessile; leaves of involucrum somewhat ciliated and bristly. Fr. F. Native of the mountains of Magellan and the Maclowe Islands. A. chilimis, Pers. cnch. no. 3. D’Urrl. fl. mal. p. 46. Bolax filamentosus, Spreng. in Schultes, syst. 6. p. 358. There are varieties of this plant with either an elongated or crowded habit; and with the umbels either few or many-flowered, and the lower ones 1-flowered. Perhaps the same as Chamitis integríflora, Gourn. fruct. t. 22. f. 4.

Filamentosa Azorella. Pl. ¼ foot.

4 A. Gilliesii (Hook. et Arn. in bot. misc. 3. p. 346.) plant densely tufted; leaves petiolate, trifid; umbels pedunculate, 4-10-flowered; fruit urticulare. Fr. F. Native of Chili, in the valley of Uspallata, on the Andes of Mendoza, at the elevation of from 6000 to 12,000 feet. Bolax Gilliesii, Gill. et Hook. in bot. misc. 1. p. 325. t. 63. Root long, descending. Plant 2 inches high. This plant yields abundantly a gummy substance, which is gait-tered by the natives, and employed by them in the cure of headache.

Gillies’ Azorella. Pl. 2 inches.

5 A. espinosa (Cav. icon. 5. p. 57. t. 484. f. 2.) leaves imbricated, spreading at the apex, thick, quite entire, and quite glabrous; umbels on short peduncles, 6-8-flowered; leaves of involucrum one half shorter than the pedicels. Fr. F. Native of Chili, on the higher mountains, called the Cordilleran del Planchon. A. espinosa, Pers. cnch. 1. no. 2. Fruit ovate; having the mericarps furnished with 3 slender stripes on the outside, as in the genus Fragosa.

Tufted Azorella. Pl. ½ foot.

6 A. dacoftes (D’Urrl. fl. mal. p. 45.) leaves all radical, long, pinnate; segments or leaflets remote, opposite, short, pinnatifid; lobes alternate, acutely cut; scapes short, very hairy; involucrum 8-10-leaved; fruit glabrous, striated, nearly sessile. Fr. F. Native of the Strait of Magellan, along the rivulet called Bougainville River. Root thick, fusiform. Umbels 3-8-flowered. Leaves hardly an inch long, but still longer than the scape.

Carrot-like Azorella. Pl. 1 inch.

7 A. ranunculus (D’Urrl. fl. mal. 1. p. 46.) stem stoloniferous, very short; leaves on long petioles, 5-parted; partitions 3-lobed at the apex, obsolete; umbels axillary, on short peduncles; leaves of involucrum 5, lanceolate, acute, ciliated at the base, equal in length to the flowers. Fr. F. Native of the Strait of Magellan, along with the last. Habit of a small Hydrocotyle or Ranunculus. Fruit round, hardly pedicellate, crowned by the calycine teeth. Umbels 4-6-flowered. Petals greenish yellow.

Cronfoot-like Azorella. Pl. ½ foot.

Cult. See Fragosa p. 259. for culture and propagation.

XIII. PECTOPHYTUM. XIV. Bolax.

MULINEÆ (this tribe contains plants agreeing with Mullineum in important characters), or Orthospermum imperfectæ Umbellatae, parallellæ bissetiae, D. C. prod. 4. p. 78.—Hydrocotylæ Mullinenæ, D. C. coll. mem. 5. p. 39. Mericarps much contracted at the commissure, without any vitæ; ribs 5, usually filiform. Fruit compressed from the back, hence it is square. Petals spreading, flat, entire in all the genera, with the exception of Astiræcum.

Trusses II.

MULINEÆ (this tribe contains plants agreeing with Mullineum in important characters), or Orthospermum imperfectæ Umbellatae, parallellæ bissetiae, D. C. prod. 4. p. 78.—Hydrocotylæ Mullinenæ, D. C. coll. mem. 5. p. 39. Mericarps much contracted at the commissure, without any vitæ; ribs 5, usually filiform. Fruit compressed from the back, hence it is square. Petals spreading, flat, entire in all the genera, with the exception of Astiræcum.

XIV. Bolax (from Bolax, Bolax, a synonym of Bolaex, bolos, a bole or lump; the plant grows in dense tufts, hollowed in the middle). Comm. in Juss. gen. p. 226. Gaud. fl. mal. in ann. sc. nat. 5. p. 104. t. 3. f. 1. D. C. prod. 4. p. 78.—Bolax species, Spreng. Azorella species of Lam.

LIN. SYST. Pentandria. Dígnia. Margin of calyx entire, hardly conspicuous. Petals oval, entire. Styles short. Fruit tetragonal, concave in the disk; mericarps with 5 nerve-formed smooth ribs, 1 dorsal, 2 in the middle forming the angles, and 2 filiform inner ones; commissure very narrow.—A tufted herb, with the habit of Arbuitia. Leaves imbricate, trifid, glabrous, coriaceus; lobes ovate, obtuse; petioles membranous, rather corylous, with the margins not ciliated. Umbels simple, nearly sessile, 4-flowered. Leaves of involucrum 4, about equal in length to the pedicels. Fruit white young furnished with stellate down.

1 B. Clebæma (Comm. ind. ex Gaud. ann. sc. nat. 5. p. 104. t. 3. f. 2.) Fr. F. Native of the Strait of Magellan, on the mountains; in the Maclowe or Falkland Islands; Chili
UMBELLIFERÆ. XV. MULINUM. XVI. LARETIA. XVII. DRUSA. XVIII. HUANACA.

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Clebaria Bolax. Pl. ½ foot.

Cult. See Frágosa, p. 259. for culture and propagation.


LIN. SYST. Pentàndria, Digynia. Limb of calyx 5-toothed, permanent. Petals oval-oblong, acute, flat. Styles acute. Fruit 4-winged or parallelly bicuspid; mericarps without vitre, very much contracted at the commissures, compressed on the back, 5-ribbed; middle rib on the back nerve-formed, as well as the 2 lateral ones, the 2 intermediate ones expanded into ample lateral wings.—Suffruticosum tufted herbs, natives of Chili. Leaves 3-5-cleft or undivided; petioles sheathing. Umbels simple; pedicles longer than the many leaved involucre. Flowers yellow.

This genus, according to Lagasca, is probably divisible into several.

1 M. spinosum (Pers. ench. 1. p. 309.) caule leaves trifid; segments subulate and spiny; lateral segments bipartite; petioles sheathing, glabrous; peduncles longer than the leaves; leaves of involucre distinct, short, spreading a little; fruit orbicular.

2 F. Native of Chili, on the highest mountains, called Cordillera del Planchon and del Putíllo, towards Mendosa; between Los Ojos de Agua, and El Rio de Los Ojos de Agua; Andes of Chili, and Cordillera of Chili, at the elevation of 5,500 or 7,000 feet. Selenium spinosum, Cav. icon. 5. p. 59. t. 487. f. 1. Bólox spinosus, Spreng. in Schultes, 6. p. 362. exclusive of the synonyms. Stems half a foot tall. Umbels 10-12-flowered. Petals of a reddish yellow-colour.

Spiney Mulinum. Pl. ½ foot.

2 M. proliiferum (Pers. l. c.) caule leaves trifid; segments subulate, spinose; petioles sheathing, glabrous; leaves of involucre short, distinct, rather spreading; umbels pedunculate, longer than the leaves; fruit orbicular.

2 F. Native of South America, at Port Desire; and of Chili, on the Andes of Mendoza between San Isidro and Portezuela, on the declivities of mountains at the elevation of 5,000 to 10,000 feet. Selenium proliiferum, Cav. icon. 5. p. 58. t. 486. f. 1. Bólox proliifer, Spreng. in Schultes, syst. 6. p. 361. Root twisted. Stems 3-4 inches high, covered by the sheaths. Leaves glabrous. Umbels 5-7-flowered, sometimes proliiferous. Petals yellow.

Proliiferous Mulinum. Pl. ¼ foot.

3 M. cuneatum (Hook. and Arn. in Beech. bot. 1. p. 26.) leaves wedge-shaped, trifid, and sometimes 5-6-cleft; each lobe ending in a spiny point; sheaths of leaves elongated, stiff, ciliated; umbels many flowered, on short peduncles. 2 F. Native of Chili, about Valparaíso, and on the mountains of Valparaíso; and at Huiguilíoma, in the province of Raro. Azorélla spinosa, Pers. ench. 1. p. 303. Frágosa spinosa, Ruiz et Pav. fl. per. 3. p. 27.

Cuneate-leaved Mulinum. Pl. ¼ foot.

4 M. ulcínium (Gill. et Hook. in bot. misc. 1. p. 328. t. 64.) leaves trifid: segments subulate, spiny; umbels nearly sessile, terminating the very short branches; fruit elliptic. 3 F. Native of Chili, near La Cienega de Bonillo, near the tops of the Usallata range of mountains, at the elevation of 9,500 feet. M. ulcinus, D. C. prod. 4. p. 79. Bólox echinos, Presl. mss. A glabrous, much branched, humble, odoriferous plant. Petals marked by an elevated longitudinal line in the middle. Leaves of involucre linear-subulate.

Furze-like Mulinum. Shrub ½ to 1½ foot.

5 M. microphyllum (Pers. l. c.) caule leaves imbricate, minute, tripartite: lobes linear-lanceolate, each terminated by a hair; petioles stem-clasping, ciliated at the base. 3 F. Native of South America, at Port Desire. Selenium microphyllum, Cav. icon. 5. p. 59. t. 486. f. 2. Petals reddish, yellow in the dried state. Stem shrubby, 3 inches long, branched, covered by the sheaths.

Small-leaved Mulinum. Pl. ¼ foot.

6 M. alegóvagnatum (Gill. et Hook. in bot. misc. 1. p. 328.) leaves trifid; segments ovate-lanceolate, mucronate; umbels axillary, small, few-flowered, sessile. 3 F. Native of Chili, at Cerro de la Polcera, on the Andes of Mendoza. Shrub branched, dichotomous.

White-sheathed Mulinum. Pl. ¼ foot.

Cult. See Frágosa, p. 259. for culture and propagation.

XVI. LARETIA (Laretia is the vernacular name of the plant). Gill. et Hook. in bot. misc. 1. p. 329. t. 65.

LIN. SYST. Pentàndria, Digynia. Margin of calyx 3-toothed. Petals ovate, entire. Fruit elliptic, square, flatly compressed from the back, 4-winged; mericarps lenticular, with dorsal ribs, and 2 lateral marginal ones, destitute of vitre. Seed flat.

1 L. acutus (Gill. et Hook. l. c.) 2 F. Native of the Andes of Chili, in Ell Valle de Fray Carlos, at the elevation of 10,000 feet; Cordillera of Chili, Los Ojos de Agua. Mulinum acutum, Pers. ench. 1. p. 309. Selenium acutum, Cav. icon. 5. p. 59. t. 487. Root thickish, rather fusiform, woody. Plant tufted. Leaves ovate, attenuated at the base; umbel radical, sessile.

Symless Laretia. Pl. ¼ foot.

Cult. See Frágosa, p. 259. for culture and propagation.


LIN. SYST. Pentàndria, Digynia. Limb of calyx entire, not perspicuous. Petals oval, entire. Fruit oval; mericarps much compressed on the back, without any vitre: the dorsal rib and the 2 inner ones linear, and not prominent: the 2 intermediate ones are drawn out into marginally repandly sinuated wings, having the sinuses obtuse, and the angles furnished with hooked stellate spines. Seed much compressed.—A decumbent slender stoniferous herb, native of Teneriffe. Leaves opposite, petiolate, broadly 3-lobed, crenated. Hairs on divers parts of the plant very different, some of which are stiff, stellate, and hooked at the apex; others are soft, simple, solitary, or in stellate fascicles. Umbels axillary, pedunculate, 1-2-flowered, without any involucre. Flowers small, white. Plant with the habit of Bowlesia, but the fruit is very different.


Cavanilles's Huanaec. Pl. ½ foot.

2 H. geraniófolia (D. C. prod. 4. p. 81.) scape leafless, simple, bearing only one simple umbel; segments of leaves linear, undivided. 3. F. Native of Mexico. Boýnx geraniófolius, Presl. and ms. Herb 1-2 inches high. Scapes numerous, a little less than the peduncle. Umbels 15-20-flowered. Leaves of involucre linear, few, ciliated at the base.

Geranió-leaved Huanaec. Pl. ¼ foot.

Cult. See Frágosa, p. 259. for culture and propagation.

XIX. DIPOSIS (from Διοπες, dipe, twice, and ποιητής, poítēs, a husband; in reference to there being 2 male flowers in each umbellulae, and only one fertile). D. C. coll. mem. 5. p. 33. t. 3. f. O. prod. 4. p. 81. —Hydrocóyte species, Lam. Cav. —Spanánthe species, Spreng.

LIN. Syst. Pentédria, Digýnia. Margin of calyx bluntly 5-toothed. Petals oval, flat, entire. Styles short. Fruit orbicular, bicuspitate; mericarps compressed from the back, joined with the narrow commissure, and therefore constituting 2 parallel disks; dorsal rib filiform, 2 lateral ones hidden, and the middle ones girding the disk; vittae wanting; furrows between the ribs broad and flat. —STEMLESS glabrous herbs, natives of Chili and Brazil. Leaves all radical, petiolate, ternate: leaflets wedge-shaped, toothed or cut at the apex; the lateral segments sometimes 2-parted; umbels 6-8-rayed. 4. F. Native of Monte Video. Hydrocóyte saniacélifolium, Lam. dict. 5. p. 154. Cav. eton. 5. p. 60. t. 488. f. 2. Spanánthe saniacélifolium, Spreng. in Schultes, syst. 6. p. 557. Mulinum saniacélifolium, Desv. in herb. Juss. Saniacél-leaved Dipsis. Pl. ½ to ¾ foot.


Earth-nut Dipsis. Pl. 1 to 2 feet.

Cult. See Frágosa, p. 259. for culture and propagation.

XX. SPANÁNTHE. XXI. HOMALOCARPUS. XXII. POZOA.


LIN. Syst. Pentédria, Digýnia. Limb of calyx 5-toothed. Petals elliptic, entire, at its apex, with a straight apex. Fruit ovate, much compressed at the raphe, flat, and compressed from the back on both sides; mericarps flat, without any vittae; ribs 5, very slender, equal, 3 intermediate ones on the back, and the 2 lateral ones seated in the commissure, which is flat. Seed flat.—A South American branched erect herb, glabrous in every part, except on the pedicels, which are ciliated along the sheaths, and ornamented with a collar of hairs under the origin of the limb. Leaves cordate, toothed, acute. Umbels rather compound, proliferous. Involucra composed of many leaves. Flowers white on long pedicels.

1 S. panicúlata (Jacq. l. c. and icon. rar. 3. t. 350). 5. S. Native of South America, in Trinidad, and the Spanish Main, as well as of Peru. Hydrocóyte spanánthe, Willd. spec. 1. p. 1363. Phellándrium ciliátum, Wild. herb. Perhaps the Peru- vian plant is the same as that from the Spanish Main, but it is much smaller and hardly paniced.


Cult. The seeds of this plant should be raised on a hot-bed, and when the plants are of sufficient size plant them into separate pots, and then place them in the stove, where they will flower and seed; and some may be planted out in the open ground. Not worth cultivating except in botanic gardens.

XXI. HOMALOCARPUS (from ὑμαλός, homalos, equal, and καρπός, karpos, a fruit). Hook. and Arn. in bot. misc. 3. p. 348.

LIN. Syst. Pentédria, Digýña. Margin of calyx 5-toothed: teeth subulate, minute, hardly permanent. Petals ovate, concave, entire. Styles 2, divaricate, short. Fruit roundish-ovate; mericarps compressed on the back, flat, wingless, constituting 2 parallel disks; commissure very narrow; ribs 5, filiform, very slender, hidden in the substance of the pericarp, one dorsal, 2 lateral ones near the raphe, 2 middle ones forming the angles, without any vittae; carpophor oblong. Seed less than the cavity of the fruit. —Herb annual, erectish, hoary by stellate hairs, dichotomy branched. Root slender, simple. Leaves petiolate, reniform-rounded, somewhat 5-lobed; lobes equal, ovate, obtuse, quite entire or deeply lobed; lower leaves alternate; superior ones opposite. Peduncles axillary and terminal, about equal in length to the pedicels. Umbels simple, 3-6-flowered. Teeth of calyx pilose, almost emulating a fascicle of hairs. Fruit nearly twice the length of their pedicels, which are a line long. This genus comes near to Spanánthe.

1 H. bowlesiioides (Hook. et Arn. 1. c.) 5. H. Native of the Cordillera of Chili. The ridges or ribs of the fruit are only to be seen on a transverse section of the fruit, because they are sunk in a thin substance of the pericarp. The middle ridges do not expand into wings as in Mulinum, and some other allied genera.

Bonolesia-like Homalocarpus. Pl. ½ to ¾ foot.

Cult. See Spanánthe above for culture and propagation.


LIN. Syst. Pentédria, Digýña. Calyx 5-toothed, perma-
pent. Petals entire. Fruit primitively tetragonal, 5-ribbed, crowned by the calyx, emarginate at the apex; mericarps concave and channelled on the back: lateral ribs close, nearly in straight lines; commissure much contracted. —Herb. Leaves on long petioles, simple, cuneated, profoundly toothed at the apex, quintuple nervet. Umbels simple. Involutione obsolesce lobed, crenately toothed, many nervet: nerves branched a little. —This genus is allied to Astrantia and Malkinum.


N.B. There are two other species of this genus mentioned by Lagasca in nat. 2. p. 94. under the names of P. denticulata and P. inesita, but these he has not described.

Cult. See Fragosa, p. 259, for culture and propagation.


Lin. syst. Pentandria, Digynia. Calyx 5-toothed, permanent: teeth ovate. Petals ending in an inflexed point, emarginate, with the recess callos. Fruit compressed, tetragonally prismatic, crowned by the calyx, rounded at the base; mericarps 5-ribbed, 2 intermediate ribs expanded into wings, central one as well as the 2 placed near the rapho stripe-formed: having the furrows between the ribs destitute of vitae; commissure very narrow. Seed unknown. —Quite glabrous perennial herbs. Stems terete, branched, few-leaved. Leaves petiolate, simple, roundish-cuneate, unequally toothed, somewhat 3-lobed, 3-5-nerved, rather coriaceous. Umbels simple, nearly globose. Involutione many leaved, shorter than the umbel. Flowers either sterile and male, on long pedicels, or fertile and hermaphrodite in the same umbel. —This genus differs from Poza and Malkinum in the petals being emarginate, not entire.

1 A. Chilenensis (Cham. et Schlecht. l. c.) leaves 3-lobed, deeply serrated: pedunules elongated, scattered: petals deeply emarginate, ending in a long involute point; fruit narrowest at the base; leaves of involucrum lanceolate, cut. Y. F. Native of Chili, in dry sandy places about Talcahuano, and about Concepcion; Cuesta de Zapata, at the elevation of 6,000 feet; cliffs by the sea side at Valparaiso. Hook. Bot. misc. 1. p. 332. t. 67. A. Anisillo vulgo Mouchu, Feuill. chil. t. 3. t. 2.

2 A. Poepplii (D. C. prod. 4. p. 82.) leaves deeply triad; lobes obovate, obtuse, regularly toothed. Y. F. Native of Chili. Very like the preceding, but differs in the lobes of the leaves and recesses being obtuse, and regularly toothed all around.

Poeppli's Asterium. Pl. 3/ foot.

3 A. Polly'phalum (Gill. et Hook. in bot. misc. 1. p. 332. t. 67. b.) plant leafless? peduncles corymbose, numerous, sometimes abortive and spinose; petals entire, acute, with an involute apex; fruit broadly oblong; leaves of involucrum linear, entire. Y. F. Native of Chili, in the valleys on the Andes near Ladera de la Jaula, and towards Usapallata in the province of Mendoza, at the elevation of 7,500 feet. Malkinum Dipterygium, D. C. prod. 4. p. 80. The reflexed petals of this species and the next forbid their being united to Malkinum.

Many-headed Asterium. Pl. 3/ foot.

4 A. Isatidica'rum (Hook. et Arn. in bot. misc. 3. p. 332.) stem much branched; branches terete; umbels many, few-flowered, disposed in panicles; involucr of few leaves; fruit oval, parallelly bissectate; mericarps approximate. Y. F. Native of the Cordillera of Chili. Malkinum isatidicarpum, D. C. prod. 4. p. 80. Dipterygium isatidicarpum, Presl, mss. Umbels small, very numerous. Carpophor bipartite; mature mericarps yellow, rather cuneate at the base.

Isatis-fruiting Asterium. Pl. 3/ foot.

Cult. See Fragosa, p. 259, for culture and propagation.

Tribe III.

SANICULAE (this tribe contains plants agreeing with Sanicula in important characters). D. C. prod. 4. p. 82. or Umbellate Imperfectae Orthospermae turgidae, Koch, umb. 158. —Umbellate disciscentes, Spreng. in Schultes, syst. 6. p. 30. exclusive of 3 genera. Transverse section of fruit nearly terete. Mericarps covered with scales, furnished with 5 equal primary ribs, without any secondary ones, and destitute of vitæ. Transverse section of seed semi-terete, flattish in front. Petals erect, bent inwards from the middle, and emarginate. Umbels fasciculate or capitulate, simple or irregularly subcompound.


Lin. syst. Pentandria, Digynia. Tube of calyx ovate, contracted at the top; limb 5-lobed: lobes oval-oblong. Petals wanting. Stamens opposite the calyxine lobes. Styles 2, thickened at the base and villous, but sessaceous at the apex. Ovarium 1-ovulate. Fruit ovate, villous, marked by 5 stripes, and crowned by the calyx. —Erect branched Australian herbs. Leaves alternate, petiolate, variously cut. Umbels simple, many flowered, capitulate; pedicels very short; involucrum many leaved, radiating, longer than the flowers.

1 A. Helia'sntha (Labill. nov. holl. l. p. 67. t. 92.) the whole plant clothed with tomentose wool; leaves bipinnatifid: lobules bluntish; involucrum 10-18-leaved, clothed with soft tomentum. Y. G. Native of New Holland, about Port Jackson, &c. Eriocaulia major, Smith, exot. bot. t. 78. Involutum expanded 1 1/2 or 2 inches in diameter, yellow. Flowers white.


2 A. mnxor (D. C. prod. 4. p. 83.) plant smoothish; leaves clothed with adpressed villi beneath, tereate; segments or leaflets trifid, acute; involucrum 9-10-leaved, acute, clothed with silky villi. Y. H. Native of New Holland, on the Eastern coast. Eriocaulia minor, Smith, exot. bot. t. 79. Sieb. pl. exsic. nov. holl. no. 127. Involutum expanded, 5 lines in diameter, red.

Smaller Actinotus. Pl. 1 foot.

Cult. The seeds of these plants may be reared on a hot-bed in spring, and in the month of May the plants should be planted out in the open border in a warm situation, where they will flower and seed freely.


Lin. syst. Pentandria, Digynia. Umbellules containing only
3 flowers; central one hermaphrodite, fertile, sessile: 2 lateral ones male, pedicellate; the pedicels rather close at the base, with the calyx of the fertile or central flower. Male flowers with the tube of the calyx almost wanting, but with an obsolete somewhat 5-toothed limb; petals oval-oblong, acute at both ends, flexed at the apex; stamens 5, alternating with the petals, and longer than them. Female or hermaphrodite flowers, having the tube of the calyx ovate and compressed, and the limb obsolete: petals the same shape as those of the male flowers, rather membranous, permanent; stamens 5, caducous; styles 2, filiform, divaricate, very long; fruit ovate, compressed, 8-nerved, with 3 nerves on each side, particularly one central, indicating where the raphe is, in the middle, and 2 more conspicuous, seated on the dorsal angle of the mericarps. Mericarps and carpophor not distinct. Fruit empty or containing one ovulum, from one of the mericarps being abortive.—Herb perennial, smooth. Root or rhizoma like that of Adoxa or Hacquetia. Leaf radical, on a long petiole, rather palmate, parted: partitions oval-cuneated, somewhat 3-lobed at the apex, and toothed: teeth mucronate. Stem solitary, hardly half a foot high, bearing at the apex 2 almost sessile opposite 3-lobed toothed leaves. Branches 2, bifid at the apex. Bracteas or leaves of involucrum 2, opposite, oblong, acute, mucronately serrated, seated just under the branches. Branches or rays of umbel 2, short, bearing each 3 flowers at the apex, furnished with 2 small bracteas under the ramifications. This very singular genus is allied to Hacquetia and Sanicula.

1 P. SANICULEFOLLA (Guss. l.c.) 2. H. Native of Sicily, in groves by the sides of rivulets, in cool places. Sison Gussoniánnum, Balb. herb. Sison Gussónii, Spreng. cur. post.

Sanicle-leaved Petagna. Pl. ½ foot.

Cult. See Hacquetia, p. 265. for culture and propagation.


LIN. Syst. Pentándria, Digitá. Tube of calyx echinatized; lobes foliaceous (f. 59. c.), permanent. Petals erect, conniving, obtuse, emarginate, with an inflexed point (f. 59. g.). Fruit nearly fusiform, not separable into 2 parts spontaneously; mericarps destitute of ribs, but furnished with many vitre, and densely clothed with hooked prickles; carpophor not distinct. Seed semi-globose.—Perennial herbs. Leaves radical, petiolate, palmate lobed: lobes cuneated, deeply toothed at the apex. Stems either naked or furnished with very few leaves. General umbel with few rays; leaves of involucrum few, and usually divided. Umbellules of many rays; leaves of involucel many, entire. Flowers male, female, and hermaphrodite in the same umbel.

Sect. I. SANÍCA (an alteration from the generic name). Tube of calyx echinatized. Leaves palmate lobed.

1 S. Européa (Lin. spec. 339.) leaves radical, palmate-parted; lobes trifid, toothed; flowers polygamous, all nearly sessile, disposed in umbellules; lobes of calyx denticulated. 2. H. Native throughout the whole of Europe and Caucasus, in woods and groves, and particularly by the sides of rivulets. Oed. fl. dan. 293. Schkuhr, handb. t. 60. Hoffm. umb. p. 67. Smith, engl. bot. t. 98. Blackw. herb. t. 63. S. officinarum, Neck. gallob. p. 137. Austrânia Diapénus, Seop. carn. 304. S. mas. Fuchs. hist. p. 671. S. officinalis, Goun., lect. 131. Caúcalis Sanica, Crantz. Flowers white or tinged with red, sessile, disposed in little heads. The plant was much celebrated formerly as a vulnerary. It discovers to the taste a bitternes and roughness. It has, however, been long discarded in medi-
numerus, pedicellate. 2. S. Native of Java, on the top of Mount Gede. Perhaps this is the same as S. Javanica, Juss. from the description of the leaves; but the umbels are nakedish above, in the forks of the stem, and on the tops of the branches, each umbel bearing 3 nearly sessile fruit afterwards.

Java Sanicula. Pl. 1 foot.

9 S. montana (Reinw. in Blum. bijdr. p. 832.) leaves all ternate; leaflets somewhat 3-lobed, rather ovate-rhomboid, deeply and setaciously serrated; flowers all pedicellate. 2. S. Native of Java, in mountain woods in humid places. Said to be nearly allied to S. Canadensis.

Mountain Sanicula. Pl. 1 to 2 feet.


Trachyllum Sanicula. Pl. 1 to 2 feet.

11 S. bipinnatifida (Dongl. miss. ex Hook. fl. bor. amer. 1. p. 258. t. 92.) plant caulescent; leaves bipinnatifid; lower ones on long petioles; segments remote, obovate or obovate-lanceolate, acute, deeply serrated. serratures very acute; rachis winged, acutely toothed; peduncles elongated; umbels compound, somewhat proliferous; umbellules globose. 2. H. Native of the north-west coast of America, at Fort Vancouver, on the Columbia. Root rather fusiform. Plant glabrous. Stem erect, branched, furnished with a few leaves. Segments of the upper cauline leaves narrow. Male flowers on short pedicels.

Bipinnatifid-leaved Sanicula. Pl. 1 foot.

12 S. arctopus (Hook. et Arn. in Beech. voy. pt. bot. p. 141.) plant almost stemless; leaves on long petioles, profoundly 3-parted; segments long, cuneated: lateral ones bifid: intermediate one trifid; all are somewhat ciliately pinnatifid; pinnule hardly longer than the leaves; leaves of involucrum foliaceous, lanceolate, quite entire, longer than the simple compact umbel. 2. H. Native of the north-west coast of America, and North California. Hook. fl. bor. amer. 1. p. 258. t. 91. Root fusiform. Habit of the genus Arctopus.

Arctopus-like Sanicula. Pl. ½ foot.

Sect. 1. Sanicòria (an alteration from the generic name). D. C. prod. 4. p. 85. Tube of calyx smooth, but perhaps only in the flowering time. Leaves bipinnate-parted.

13 S. graveolens (Poeppl. diar. no. 222. fl. exsic. no. 93.) leaves bipinnate-parted; segments pinnatifid; lobes obtuse; flowering branches elongated, nearly naked, trifid at the apex; umbellules by threes, on short peduncles; flowers 12-15 in each umbellule; male ones nearly sessile: female one central. 2. F. Native of Chili. Leaves almost like those of Scrophularia canina. Umbels truly compound. Flowers yellowish in the dried state. Petals cuneate, emarginate, having the segment at the top reflexed. Filaments of young stamens inflexed. Styles very long. Male flowers more numerous in the umbels than the sessile female flowers. Calyx of the male flowers smooth, of the female-teethed.

Strong-scented Sanicula. Pl. 1 foot.

Cult. The species of Sanicula grow best in a shaded rather moist situation; and they are easily propagated by dividing at the root. Some of the species being natives of warm climates, will require to be protected in winter.


Lin. syl. Pestalotria, Digynia. Tube of calyx furnished with 10 ribs, and 5 lobes: lobes foliaceous, permanent. Petals erect, connivent, ovobate: with the segment at the apex length of the limb of the petal, and bent in from the middle. Fruit crowned by the calyx, contracted from the sides; mericarps gibbously convex, furnished with 5 filiform ribs.—A small perennial herb. Leaves radical, petiolate, pinnate; leaflets 3-cuneated, 2-3-cleft, mucronately serrated. Scapes 1-3, bearing at their tops simple umbels. Involucrum of 5-6 obovate leaves, which are toothed at the apex, and longer than the umbels. Flowers yellow, on short pedicels, some male, and some female. Fruit compressed from the sides; mericarps with 5 broad ribs, which are rather cuneate at the base, but separated by channels above.


Cult. See Sanicula above for culture and propagation. The plant, however, does best in a pot in a mixture of sand and peat, placed among other alpine plants.


Lin. syl. Pestalotria, Digynia. Tube of calyx 10-ribbed, with tubercular plats; lobes 5, foliaceous. Petals erect, connivent, oblong-obovate: bent in from the middle by a segment, which is nearly the length of the petal. Fruit rather compressed from the back; mericarps without any vitta, but having 5 elevated obube plicate toothed inflated ribs, inclosing in the cavity of each a smaller fistular rib; carpophore not distinct. Seed semi-terete.—Perennial herbes, natives of Europe and Caucasus. Roots blackish. Radical leaves petiolate, palamately lobed: cauline ones few, sessile. Universal umbels irregular, of few rays, surrounded by variable involucra; partial umbels regular, and containing many flowers, surrounded by many leaved involucres. Flowers white or rose-coloured, pedicellate, usually polygamous, the female ones alone fertile.

1 A. mirta (Lin. spec. p. 340.) leaves palmate; segments 7-9, lanceolate, acute, profusely and acutely toothed; leaves of involucrum entire, about equal in length to the umbel. 2. H. Native of the higher Alps of France, Switzerland, Italy, Germany, &c. Lam. ill. 191. f. 2. Sturm, deutschl. fl. with a good figure. Lodg. bot. cab. t. 93. A. minor var. a and b, D. C. fl. fr. 4. p. 353. A. digitata, Monech, meth. p. 94. Hall. hist. no. 791. Leaves of involucrum white and acute. Flowers white.

Var. b, macrodonita (D. C. prod. 4. p. 86.) segments of leaves lanceolate-linear, profusely and sharply serrated; leaves of involucrum exceeding the umbel. 2. H. Native of the Alps of Piedmont.—Bocc. pl. sic. p. 10. t. 5. f. 111.

2 A. fauciiflora ( Bertol. journ. bot. 1811. p. 76. am. iiim. 96. and 347.) leaves pulate; segments 5-7, entire at the base, but finely and sharply serrated from the middle to the apex; leaves of involucrum entire, exceeding the umbel. 2. H. Native of the mountains of Abruzzo and Naples. Very like A. minor. There is a variety having the segments of the leaves linear or oval-oblong.


3 A. Carnioica (Jacq. fl. austr. 6. t. 10.) radical leaves palmate-parted; lobes 5-7, oblong, acuminate, unequally serrated, toothed; leaves of involucrum 12-13, quite entire, exceeding the umbel. 2. H. Native of Carnithia, Carniolan, in alpine meadows. Sturm, deutschfl. fl. with a figure. A. major, Spreng. in Schultes, syst. 6. p. 311. A. minor, Scop. fl. carn. no. 303. t. 7. Smith, exot. bot. 2 t. 17. Habit of A. minor, but with the character of A. major. Leaves of involucrum white, with a green line running along the middle of each, tinged with red. Petals white. Cauline leaves 3-lobed or simple. Root dark brown, having an aromatic balsamic smell, with a taste at first slightly aromatic, but nauseous, and afterwards acid.

Carniolan Master-wort. Fl. May. June. CIt. 1812. Pl. 1/2 to 1 foot.


Var. a.; leaves of involucel white; flowers white.

Var. β; leaves of involucel purplish; flowers tinged with red.

Larger Master-wort. Fl. May, Sept. CIt. 1596. Pl. 1 to 2 ft.

5 A. intermedia (Bieb. suppl. p. 194.) radical leaves palmate-parted: lobes 5, rarely only 3, ovate-oblong, deeply biserated, and ciliated with bristles; cauline leaves nearly palmate; leaves of involucrum 12-13, oblong-lanceolate, bearing from 1 to 3 spines each at the apex, exceeding the umbel a little. 2. H. Native of Caucasian, in mountain meadows. A. trifida, Hoffm. umb. ed. 2. vol. 1. p. 8. A. Caucaucica, Spreng. umb. p. 17. syst. 8. p. 874. exclusive of the synonyms. Flowers pink?

Var. a; leaves of involucel nearly entire. 2. H. Native of Caucasian and the mountains of Naples. A. major, Bieb. fl. and suppl. no. 509.


6 A. helleborifolia (Salisb. par. Lond. t. 60.) radical leaves palmate-parted; lobes 3, ovate-lanceolate, unequally serrated, ciliated with bristles; leaves of involucrum 12-13, ovate-lanceolate, exceeding the umbel a little, ciliated with bristles their whole length. 2. H. Native of Eastern Caucasian, in the more elevated meadows. A. máxima, Pall. nov. act. petropol. 7. p. 357. t. 11. Sim., bot. mag. 1553. A. heterophylla, Wild. nov. act. berol. 3. p. 419. Bieb. fl. taur. 1. p. 202. suppl. p. 196. Involucrum and flowers pink. There are varieties of this species having the cauline leaves either 3-lobed or undivided.

Hellebore-leaved Master-wort. Fl. June, July. CIt. 1804. Pl. 1 to 2 feet.

Cult. The species of this genus grow well in any common garden soil, and are well adapted for ornamenting flower-borders, being rather pretty; they are easily increased by dividing at the root. A. minor and A. Carniolica, being more tender than the rest, should be grown in pots, and placed among other alpine plants.


Lin. syst. Pentândria, DIGYNA. Tube of calyx beset with minute tubercles. Petals inflexed. Transverse section of fruit terete, ovate, tubercular on the outside; mericarps without ribs, and without vitae; carpophore adnate its whole length to the seeds.—An herb, with the habit of Erûngium nudicuttale, native of the Cape of Good Hope. Radical leaves petiolate, oblong, ciliately toothed from spinose bristles. Stems nearly naked, branched, umbellate at the apex. Leaves under the branches small, and stem-clasping. Umbels like those of Astrantia. An intermediate genus between Astrantia and Erûngium.


Ciliated-leaved Alepidea. Pl. 1 foot.

Cult. Any light rich soil will suit this plant, and it will be easily increased by dividing at the root.


1 H. aculeâta (Blum. l.c.) 2. S. Native of Java, on Mount Tjernanai, in the province of Cheribon, where it is called Gompon. The rest unknown.

Prickly Horsfieldia. Shrub.

Cult. Any light rich soil will suit this shrub, and cuttings will be easily rooted in the same kind of earth under a handglass, in heat.


Lin. syst. Pentândria, DIGYNA. Tube of calyx rough from vesicles and scales; lobes 5, foliaceous. Petals erect, connivent, oblong-obovate: bent in from the middle by a segment as long as the limb of the petal, which consequently appears emarginate. Fruit obovate, scaly or tubercular, with the transverse section nearly terete; mericarps semi-terete, without ribs, and without vitae; carpophore adnate its whole length to the seeds.—Herbs, usually perennial and spiny. Radical leaves, as well as the cauline ones, sheathing more or less at the base. Flowers congregated into oblong or roundish dense heads. Lower bracteas usually the largest, and forming an involucrum round the head of flowers; the rest like chaff, mixed among the flowers.

§ 1. Ramusinèriâ (from ramosus, branched, and nèrus, a
sine nerv or; in reference to the nerves of the leaves being more or less branched and diverging). D. C. prod. 4. p. 88. 

* Limbs of radical leaves more or less distinct from the petioles: having the nerves more or less branched, and diverging, but never parallel.

1 E. campestræ (Dodd. pemp. 730. f. 2. Lin. spec. 337.) radical leaves nearly ternate; segments pinnatifid: lobes ovate, cauline leaves auriculated; stem paneled; leaves of involucrum linear-lanceolate, nearly entire, exceeding the head of flowers, which is roundish; paleae among the flowers subulate. 2.  

2. H. Native of South and Middle Europe, and Caucasus; very common in dry sandy fields. In Britain not so very common; on the coast near the ferry from Plymouth to Cornwall; and near the Devil's Point at Stonehouse, Plymouth; near Newcaste upon Tyne; on the shore called Frau's Goose, below Melling, in Yorkshire; also far inland opposite Brookhall, near Daventry, in Northamptonshire. Laroché, eryng. p. 22. Oed. fl. dan. t. 554. Hayne, arz. gew. 7. t. 1. Smith, eng. bot. 57. Jacq. austr. 2. t. 155. Plench. t. 173. E. vulgare, Bauh. pin. 368. E. Mediterraneum, Ger. 999. Corollas blue, but sometimes white and yellow. Roots creeping. Plant rather glaucous. 

* Var. β: radial leaves nearly entire. 2. H. Native of Portugal and the Levant.  


2 E. Bourgæti (Goun. ill. p. 7. t. 3.) radical leaves orbicular, triplicate; lobes pinnatifid or cut in a forked manner, quite entire between the divisions; stems simple, a little branched at the apex; leaves of involucrum 10-12, lanceolate, pungent, erect, furnished with 1 or 2 teeth on each side, much longer than the head of flowers, which is ovate; paleae among the flowers entire. 2. H. Native of the Pyrenees, but has not been found elsewhere. D. C. fl. fr. 4. p. 555. Laroché eryng. p. 24. Tratt. arch. t. 207. E. amethystinum, Lam. fl. fr. 3. p. 401, but not of Lin. E. Bourgæti, L. planum, and E. alpinum, Lapeyr. abr. p. 157. There are varieties of this species with either sky blue or pale flowers; and with the stems either bearing one or more heads of flowers. Plant glaucous. 


3 E. Billardæri (Laroché eryng. p. 25. t. 2.) radical leaves nearly orbicular, triplicate; lobes lanceolate, pinnatifid, spiny, profusely toothed all round; stems branched at the apex; leaves of involucrum 8, linear-lanceolate, 3 times higher than the head of flowers, which is globose; paleae among the flowers entire. 2. H. Native of the Levant; and in fields on the mountains at the limits of the Turkish districts called Khoi, in the province of Abyd über. Tratt. arch. p. 356. Very nearly allied to E. Bourgæti, but differs in the lobes of the leaves being toothed all round, and in the paleae being hardly longer than the calyces. Flowers blue. 

La Billardæri's Eryngio. Pl. 1 foot. 

4 E. spina-alba (Vill. dauph. 2. p. 660. t. 15.) radical leaves 3-5-parted; lobes profusely toothed, or cut in a forked manner; stem thick, nearly simple; leaves of involucrum 9-10, pinnatifid, very stiff, pungent, with about equal length to the head of the flowers, which is of an ovate-cylindrical form; paleae among the flowers entire, or usually tricuspidate. 2. H. Native of Dauphiny, Provence, &c. in arid exposed places of mountains. D. C. fl. fr. 4. p. 356. Laroché eryng. p. 26. t. 3. E. rigidum, Lam. t. 184. p. 752. E. alpinum, Lin. mant. p. 949, but not of his spec. E. alpinum, Schults. syst. 6. p. 322. E. pallescens, Mill. dict. no. 5. Spina ålo, Dalech. lgl. 1462. Both heads of flowers and herb are white. There are varieties with either dwarf stems, or a foot high. 


5 E. dilatatum (Lam. dict. 4. p. 755.) radical leaves pinna- 


6 E. crisum (Presl, del. prag. p. 139.) radical leaves pinnatifid; outer lobes trifid, spiny toothed: lower ones much smaller and bristly, or jagged into bristle-formed teeth; petioles ciliated with bristles from the base; stems nearly simple, bearing few heads; leaves of involucrum 5-6, lanceolate, spiny ciliated, exceeding the head of the flowers, which is roundish; paleae exceeding the flowers, outer ones spiny ciliated. 2. H. Native of Spain. Very nearly allied to E. dilatatum, but it differs from it and all the others in the bristles being yellowish, and rather spiny along the petioles and the lower lobes of the leaves. Flowers blue. 

Hairy Eryngio. Pl. 1 to 2 feet. 

7 E. amethystinum (Lin. spec. p. 337. var. a.) radical leaves pinnatifid: lobes cut, spiny, somewhat pinnatifid; petioles entire at the base; stems smoothish, corymbose branched at the apex; leaves of involucrum 7-8, lanceolate, furnished with a few teeth at the base, much exceeding in length the head of flowers, which is globose; paleae among the flowers entire: outer ones hardly furnished with a tooth on each side. 2. H. Native of Dalmatia, Croatia, and Belgium, but in the last mentioned country it has probably escaped from the gardens. Waldst. et Kit. hung. 3. t. 215.—Besl. hort. syst. ord. t. 8. f. 4. Tratt. arch. 206. E. campestræ aruzreum, Læuen, in herb. Gay. E. excul- leum, Bauh. hist. 3. t. 86. f. 1. The upper part of the stem, and also the heads of flowers, are of the finest amethyst colour, so that they make a very fine appearance. This species is often confused with E. dilatatum, but is easily distinguished from that species in the petioles being entire, not pectinated. 


8 E. Anderssoni (Lag. in litt. Loyal hort. brit. p. 101.) radical and cauline leaves pinnatifid: 3 terminal segments large, lanceolate, and 3-lobed at the apex: the rest of the segments small; all spiny toothed; stem smooth, striated, corymbose and trichotomously branched; leaves of involucrum 7-8-lanceolate, spiny toothed, much longer than the head of the flower, which is roundish, furnished with retrograde forked or simple prickle on the lower side at the very base; upper paleae among the flowers linear, entire, and the lower ones trifid, ending in spiny points, about the length or longer than the flowers. 2. H. Na-
**UMBELLIFERÆ.**

16. **Eryngium maritimum** (C. Bann. pin. p. 386. Lin. spec. p. 337.) leaves of a whitish glaucous hue; coriaceous; radical leaves on long petioles, roundish, cordate, spinous-toothed; superior ones stem-clasping, palmately lobed; leaves of involucrum 5-7, ovate, spinous-toothed, exceeding the head of flowers, which is roundish; palae among the flowers, tricuspidate, about equal in length to the calyxes. **2. H.** Native throughout Europe, among the sand along the sea-shore; and on both sides of the Mediterranean Sea. It is to be found plentiful in some parts of Britain, on the sea-shore. Od. fl. dan. t. 718. Tratt. arch. t. 209. Wooty. med. bot. t. 102. Smith, engl. bot. t. 718. Roots creeping. Flowers very pale blue. By English writers the Sea eryngium has been called sea holly, sea halley, and sea holme. The young flowering shoots of the plant, eaten like asparagus, are very nourishing, according to Linnaeus. The leaves are sweetish, with a slight aromatic warm pungency. The roots are supposed to have the same aphrodisiac virtues as the Orchis tribe. They are kept in the shops candied, and are still regarded by the Arabs as an excellent restorative. Eryngium is from Eryngium, the name of the Roman repentant to the beginning of the 17th century by Robert Buxton, apothecary. His apprentice, Samuel Great, continued this business, and it has ever since been carried on by the posterity of the latter.—Morant’s Colchester, p. 92.


17. **E. oliveri** (Laroch. eryng. p. 37. t. 12.) radical leaves on long petioles, roundish cordate; lower cauline leaves petiolate, 3-lobe, and deeply toothed: upper cauline ones stem-clasping, 3-parted, and cut; leaves of involucrum 10-12, lanceolate, stiff, having 5-6 teeth on each side, which are more crowded towards the base, exceeding beyond the head of flowers; pale among the flowers, tricuspidate, and entire. **2. H.** Native of the Levant. E. alpinum γ, Schultes, syst. p. 323. Heads of flowers blue. Nearly allied to E. alpinum, but is constant to its characters, even in cultivation: it differs from it in the radical leaves being much less cordate, in the lower ones being more dissected, and in the leaves of the involucrum being still, and having fewer teeth. The colour of the herb is green.


18. **E. multifidum** (Bieb. fl. taur. p. 201.) radical leaves on long petioles, profusely cordate, serrate-toothed; cauline leaves stem-clasping, deeply lobed, spiny-serrate; leaves of involucrum 8-9, large, ovate-lanceolate, deeply spiny-ser- rated, longer than the head of flowers, which is ovate; pale among the flowers tricuspidate. **2. H.** Native of the Alps of Caucasus, Armenia, and Iberia. E. glaucum, Willd. herb. ext. in litt. E. asperifolium, Laroch. eryng. p. 36. t. 11. Poir. suppl. p. 289. Tratt. arch. t. 355. Stein dichotomously branched, 3-4 feet high, blue at the top as well as the heads of flowers. Lower leaves roughish, pubescent or glabrous beneath, reticulated with anastomosing nerves.


19. **E. alpinum** (Lin. spec. p. 337.) radical and lower cauline leaves on long petioles, deeply cordate, serrate-toothed: upper cauline leaves palmately lobed, ciliately serrate; serrations spinulose; leaves of involucrum 10-20, rather soft, a little longer than the head of flowers, pinnatifidly serrated, having 12-15 cilia-formed serratures on each side; and with the lower serratures pinnatifid; pale among the flowers tricuspidate or entire. **2. H.** Native of Switzerland, Piedmont, Germany, Cretai, Carniola, &c. in alpine pastures. Jacq. icon. rar. t. 1 t. 55. Sims, bot. mag. t. 922. Tratt. arch. t. 205. Involution along with the upper part of the herb and the flowers are of a beautiful blue colour; but there is also a variety which is white in the last-mentioned parts: and another which has the paleae among the flowers pinnatifid. Herb green.

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**Sectious-petioled Eryngio.** Pl. 1 to 2 feet.

10. **E. glomeratum** (Lam. dict. 4. p. 225.) leaves bipinnatifid; lobes linear, very stiff, divaricate; heads of flowers small, collected into a thyrse; flowers small; leaves of involucrum much longer than the head of flowers, and are as well as the paleae nearly entire, and spinose. **2. H.** Native of Crete. Laroch. eryng. p. 29. t. 6. Tratt. arch. t. 760. E. parviflorum, Smith, prod. fl. greec. t. 1. p. 175. Herb white, densely beset with leaves. Perhaps the E. glomeratum, Siebr. herb. crete, which he gathered at the foot of Mount Ida, is the same, but it differs from the figure given by Laroch in, the heads of flowers being disposed in a corymb, in the lobes of the leaves being broader, and in the leaves of the involucrum being furnished with a spine-like subulate divaricate tooth on each side.

**Glomerate-headed Eryngio.** Pl. 1 to 2 feet.

11. **E. rostratum** (Cav. icon. 6. t. 552.) radical leaves long, lanceolate: outer ones spiny-ciliolate: inner ones pinnatifid; stems a little branched; leaves of involucrum entire, rather shorter than the head of flowers, which is glabrous; paleae among the flowers, entire, or ending in a horn each, each much longer than the flowers. **2. H.** Native of Chili, at Talamahu, Conception, &c. Laroch. eryng. p. 29. This species is intermediate between the section Raisomínea and Parallelinëria.

**Beaked-scaled Eryngio.** Pl. 3 to 4 feet.

12. **E. cosomun** (Laroch. eryng. p. 30. t. 7.) radical leaves bipinnatifid; lobes lanceolate, spinose, ciliately toothed at the base; stems much branched at the apex, bearing many heads; leaves of involucrum 5-6, trifid, longer than the head of flowers, which is ovate; paleae among the flowers simple: upper paleae spiny-toothed, drawn out into a tuft. **2. H.** Native of Mexico, in temperate places between Rio Sacra and Toluco. 11. B. et Kunth, nov. gen. amer. p. 30. Flowers blue?


13. **E. Capcium** (Lam. dict. 4. p. 75.) cauline leaves almost pinnatifid; lobes lanceolate, spinose, ciliately toothed at the base; stems much branched at the apex, divaricate; leaves of involucrum 5, lanceolate-subulate, bearing 1-2 spiny teeth on each side, much longer than the head of flowers, which is roundish, paleae among the flowers, tricuspidate. **2. H.** Native of the islands of Canid, Sanlo, and of some of the Archipelago: frequent. Laroch. eryng. p. 30. t. 80. D’Urv. enum. 29. Siebr. herb. crete. E. cyanæum, Siebr. fl. grece. t. 258. prod. 1. p. 175. Tratt. tab. t. 350. Stems and heads of flowers of an amethyst colour. Floriferous branches elongated, or short and crowded.

**Cretan Eryngio.** Pl. 1 to 1½ foot.

14. **E. multifidum** (Siebr. et Smith, fl. grece. t. 259. prod. 1. p. 175.) leaves all pinnatifid, somewhat lyrate, and paltmately parted at the apex; lobes deeply lobed; stems corymbose, coloured at the top; leaves of involucrum linear-lanceolate, pinnatifid, or nearly entire, exceeding the head of flowers, which is ovate; paleae among the flowers, entire. **2. H.** Native of the hills of the Morea and Sicily. E. alpinum, elatius, &c. Cup. pamph. t. 29. Guss. prod. fl. sic. 1. p. 305. Top of stem and heads of flowers blue. Allied to **E. amethystinum** and **E. Créticum**.

**Multifid Eryngio.** Pl. 2 feet.

15. **E. ovatum** (Cunning, in Field’s new south wales, p. 358.) stems erect, furrowed, dichotomous; leaves bipinnatifid; lobes linear, stiff, spinose, divaricate; heads of flowers spherical, pedunculate; leaves of involucrum linear, mucronate, stiff. **2. G.** Native of New Holland, near Bathurst. Flowers white. The plant when young is much sought after by sheep.


**Limbs of radical leaves cordate at the base, undivided, or a little lobed.**
Alpine Eryngo. Fl. July, Aug. Clt. 1597. Pl. 1 1/2 to 2 ft. 20 E. planum (Math. comm. p. 505, with a figure. Lin. spec. p. 337.) lower leaves on long petioles, oval, cordate at the base, crenated, flat: middle cauleine leaves sessile, undivided: superior ones 5-parted, serrated; leaves of involucrum 6-7, lanceolate, remotely spin-serrated, spreading, about equal in length to the head of flowers, which is round; paleae among the flowers entire. 2. H. Native of Austria, Russia, Siberia, Transylvania, Galicia, Caucasus, Mauritania, Provence, &c. in meadows. Jac. aust. t. 391. Tratt. arch. t. 214. Laroch. eryng. p. 40. Upper part of the stem, leaves of involucrum, and heads of flowers blue; there is, however, a variety equally common in the gardens with white flowers. Herb green.


Falcate Eryngo. Pl. 1 to 2 feet. 23 E. menotomum (Desf. atl. 1. p. 226. t. 55.) radical leaves petiolate, oblong, cordate at the base, toothed; cauleine leaves palmately parted, spreading; lobes spin-serrated; leaves of involucrum lanceolate, furnished with a few spiny teeth, much longer than the head of flowers, which is globose; outer paleae tricuspidate, the rest entire. 2. H. Native of Asia Minor, Caucasus, Mount Lebanon, Candida, Mauritania, Sicily, and about Montpelier, in exposed places. Upper part of stems, leaves of involucrum, and heads of flowers blue.

Var. a; stem tall, flexuous, much branched. Desf. 1. c. Tratt. arch. t. 362. E. caruleum, Bieb. fl. taur. 1. p. 200.—Mor. ox. sect. 7. t. 37. f. 13, and therefore E. Syracum, Lam. dict. 4. p. 759.

Var. β; stems dwarf; flowers crowded at the neck of the plant. Laroch. eryng. p. 40. t. 14.

Dichotomous Eryngo. Fl. Jul. Aug. Clt. 1820. Pl. 1 to 2 ft. 24 E. diffusum (Torr. rock. mount. no. 177.) leaves all digitately palmate; segments oblong, deeply serrated, spinose; stem dichotomously branched, diffuse; heads of flowers globe; leaves of involucrum 4-6, trifid, deeply serrated, longer than the head of flowers; ovaries scaly. 2. H. Native of North America, on the banks of the Canadian river. Perhaps this species will form a proper section.

Dissipate Eryngo. Pl. 1 foot. 25 E. pusillum (Lin. spec. p. 337.) radical leaves lanceolate, entire, toothed or pinnatifid, attenuated at the base, petiolate: cauleine leaves palmately parted, sessile; heads of flowers sessile; leaves of involucrum subulate, longer than the head of flowers, furnished with an appendage, or tooth at the base; paleae among the flowers, entire. 2. H. Native of Spain, Portugal, Mauritania, Sicily, Sardinia, &c. Laroch. eryng. p. 44. Tratt. arch. t. 212.—Barrel. icon. t. 1247. Heads of flowers greenish. This species is nearly allied to E. dichotomum, but differs from it in the radical leaves being attenuated at the base, never in any way cordate.


Var. γ, galioides (D. C. l. c.) stem erectish; lower leaves somewhat pinnatifid, small; heads few-flowered. Laroch. l. c. E. galioides, Lam. dict. 4. p. 757.

Var. ε, palpudum (D. C. l. c.) stem nearly erect; lower leaves pinnatifid, large; heads few-flowered. Laroch. l. c. t. 16. E. odoratum ε, Lam. l. c.


27 E. trispartitum (Desf. cat. hort. par. 1828.) radical leaves glabrous, petiolate, trifid; leaves obovate-oblong, cuneate at the base, coarsely serrated: serratures distant, ending in spiny points; stem much branched; cauleine leaves nearly sessile, 3-5-parted: lobes lanceolate, coarsely serrated; leaves of involucrum twice the length of the head of flowers, which is ovate-globose; outer paleae tricuspidate: inner ones undivided.

28 E. aquitaleum (Cav. ann. sc. nat. 3. p. 32.) radical leaves obovate-oblong, nearly sessile, attenuated at the base, coarsely ciliated or spin-serrated from the base; cauleine leaves somewhat stem-clasping, broadest at the base; leaves of involucrum 8, ovate-lanceolate, spin-serrated, longer than the head of flowers, which is roundish; paleae ending in 3 or 5 points. 2. H. Native of Spain. Laroch. eryng. p. 34. t. 10. Tratt. arch. t. 753. E. maritimum β, Pers. ench. p. 299. exclusive of the syn. of Fl. dani. Heads of flowers blue. The plant cultivated under this name has the lower leaves much longer and narrower at the base than those in the figure cited. Plant glaucous.


30 E. tricuspidatum (Lam. spec. p. 337.? Desf. atl. 1. p. 224.) radical and lower cauleine leaves on long petioles, orbicular,
cordate, acutely toothed; cauline leaves sessile, palmate-parted; lobes lanceolate, spiny-serrate; leaves of involucrum lanceolate, spiny-serrate, excising the head of flowers, which is nearly globose; paleale tricuspidate, longer than the calyxes.

3. H. Native of Mauritania, Sardinia, Sicily, and the Morea, in cultivated fields and exposed places. Laroch. eryng. p. 33. t. 9. Tratt. arch. t. 211. E. Bocconi, Lam. dict. 4. p. 754. —J. C. Dec. sic. 88. t. 47. Heads of flowers greenish. Flowers purplish. There are varieties of this species with tall and humber stems; and with the lobes of the leaves either linear or lanceolate.


31 E. lucidifolium (Lam. dict. 4. p. 757.) radical leaves and lower cauline ones on short petioles, obovate, coarsely spiny-toothed; petioles quite entire; leaves of involucrum 5-6, dilated at the apex, and coarsely spiny-toothed, excising the head of flowers, which is oblong-oblongate; paleale tricuspidate, longer than the calyxes. O. H. Native of Mauritania, Spain, and Portugal. Brof. fl. lus. 1. p. 419. Desft. l. t. 225. t. 55. Cav. ann. sc. 3. p. 51. Laroch. eryng. p. 34. Heads of flowers blue? Herb a hand high, stiff. There are varieties of this plant having the leaves of the involucrum cut or pinnatifid.

Hex-leaved Eryngo. Pl. 1/2 foot.

32 E. tenue (Lam. dict. 4. p. 755.) radical leaves obovate-elliptic, deeply toothed; cauline ones palmate-parted; lobes linear, spreading, spiny-toothed; leaves of involucrum linear, spreading, spreading, spiny-toothed, excising the head of flowers, which is oblong; paleale tricuspidate, bearing spines on the back, longer than the calyxes. O. H. Native of Spain, Portugal, and Mauritania, in cultivated fields, and on hills. Laroch. eryng. p. 32.—Clas. hist. 2. p. 159. f. 1. E. pusillum, J. Banh. hist. 3. p. 87.—Lob. icon. 2. t. 23. Flowers blue?


33 E. nauturifolium (Juss. in Laroch. eryng. p. 56. t. 17.) leaves all lanceolate, dilated at the apex, and somewhat pinnatifid; branches decumbent; heads of flowers lateral, sessile, ovate; leaves of involucrum lanceolate-subulate, elongated, and entire, as well as the paleale. O. S. Native of South America. Tratt. arch. t. 768. Allied to E. vesiculatum, but differs in the angles of the calyx being 5, and in being rough from scales, not from vesicles.

Nasturtium-leaved Eryngo. Pl. decumbent.

34 E. cernantesi (Laroch. eryng. p. 47. t. 18. f. 1.) sessile decumbent; floral leaves trifid; leaves linear; heads of flowers axillary, pedunculate, roundish; leaves of involucrum 2, subulate, spreading, exceeding the head of flowers a little. O. H. Native of Mexico. Tratt. arch. t. 359. E. viviparum, Cer. mss. Calyxes scaly. Allied to E. vesiculatum.


35 E. prostratum (Nutt. in litt. ex D. C. prod. 2. p. 92.) sessile creeping, filiform; leaves petiolate, ovate, unarm'd, membranous, some entire, and others are furnished with a tooth or lobule on each side; heads of flowers ovate, pedunculate, axillary; leaves of involucrum 5-6 oblong-linear, entire, deflexed; paleale linear, small; calyx papulose from vesicles. O. H. Native of North America, in the Arkansas territory. Petioles variable in length, some shorter than the limbs of the leaves, and others longer. Leaves rosalate, at the neck of the plant, but crowded at the node of the surculi, sometimes opposite. Peduncles 1 or 1 1/2 inch long. Heads 2-3 lines long.

Prostrate Eryngo. Pl. prostrate.

36 E. baldwinii (Spreng. syst. 1. p. 870.) leaves petiolate, oval, entire, or serrated; stem much branched, slender, usually prostrate; heads of flowers small, numerous; leaves of involucrum 2, tripartite; leaves linear, a little toothed at the base. O. H. Native of Florida, in pine woods around St. Maria, and along the sea-shore near Augustine. E. gracile, Baldwin in Nutt. gen. amer. 1. p. 175. Ill. sketch. 1. p. 345. but not of Laroch. E. repans, Willd. herb. ex Spreng.

Baldwin's Eryngo. Pl. prostrate.

37 E. vesiculatum (Labill. nov. holl. 1. p. 73. t. 98.) surcul creeping; radical leaves lanceolate, cuneate, and attenuated at the base; deeply toothed, almost pinnatifid; floral leaves triplicate with linear lobes; heads of flowers lateral, short pedicellate; leaves of involucrum 5, lanceolate-subulate, and are as well as the paleale; calyx papulose. O. G. Native of Van Diemen's Land. Laroch. eryng. p. 47. Tratt. arch. t. 780. Poir. suppl. 4. p. 291.

Bladder-calyxed Eryngo. Pl. cr.

38 E. subacaulce (Cay. icon. 6. t. 556. f. 2.) radical leaves petiolate, lanceolate, nearly quite entire; scape naked, bearing only 1 head of flowers, longer than the leaves; leaves of involucrum 8, lanceolate, spinose, spreading, furnished each with 1 tooth on each side, longer than the head of flowers, which is hemispherical; paleale subulate, shorter than the calyx.—Native of Mexico, in Chalma. Laroch. eryng. p. 56. Tratt. arch. t. 778. Plant hardly more than a finger in height.

Nearly-stemless Eryngo. Pl. 1 1/2 to 1 foot.

39 E. radicifolium (Tratt. arch. t. 764.) radical leaves sessile, ovate, spiny-serrate; heads of flowers solitary, roundish, sessile at the neck of the plant; leaves of involucrum 6, ovate-lanceolate, tridentate at the apex, discoloured, longer than the head; paleale entire.—Native of New Granada, on the mountains of Pasto. E. humile. E. Laroch. eryng. p. 54. t. 18. f. 2. H. B. et Kunth, nov. gen. amer. 54.

Root-flowered Eryngo. Pl. 1/2 foot.

40 E. Flaccidum (Hook. et Arn. in bot. misc. 3. p. 350.) radical leaves flaccid, on long petioles, deeply pinnatifid; segments linear, spinose, bent downwards; stem slender, panicled at the apex; leaves of involucrum linear-lanceolate, stiff, acute, entire, about equal in length to the head of flowers, which is elliptic; paleale hardly equal in length to the flowers. O. H. Native of Buenos Ayres.


41 E. coronatum (Hook. et Arn. in bot. misc. 3. p. 350.) radical leaves lanceolate, spiny-pinnatifid; segments lanceolate-subulate, spreading; stem panicked at the top, many-headed; leaves of involucrum linear-subulate, spiny, quite entire, reflexed, about equal in length to the head, which is cylindrical; paleale oblong, acute, pale, equal in length to the flowers, the 2 or 4 superior ones protruding in long horns, which emulate the leaves of the involucrum. O. H. Native of Buenos Ayres. Stem 6-8 inches high.

Crowned-headed Eryngo. Pl. 1 to 2 feet.

42 E. mille (Cay. ann. p. 115. icon. t. 556. f. 1.) radical leaves on long petioles, oval-oblong, spiny-serrate; cauline leaves 1 or 2, oblong, sessile, serrated; stems bearing only 1 head of flowers, shorter than the radical leaves; leaves of involucrum 10, ovate-lanceolate, tridentate at the apex, coloured above, exceeding the head of flowers, which is globose and depressed at the apex; paleale entire. O. G. Native of Peru, on the mountains of Chimborazo and St. Antonio. E. humile, Laroch. eryng. p. 55. Tratt. arch. t. 763.

Var. β; leaves of involucrum entire. Laroch. eryng. p. 55.


Humble Eryngo. Pl. 1/2 foot.

43 E. stellatum (Mittis, in Laroch. eryng. p. 55. t. 25.) lower leaves petiolate, linear-lanceolate, crenated; upper ones sessile, opposite; branches elongated, bearing 1 head of flowers each; leaves of involucrum ovate, spiny-toothed, discoloured, exceeding the head; paleale subulate, exceeding the flowers.
UMBELLIFERÆ.

271 G. Native of Santa Fe de Bogota. Tratt. arch. t. 777. H. B. et Kunth, nov. gen. amer. 5. p. 33. Leaves of involucre smooth, yellow above.

Stellate Eryngio. Pl. 1 foot?

44 E. PHY'TE'MA (Laroch. eryng. p. 51. t. 21.) cauline leaves few, petiolate, linear-lanceolate, unarmored, crenated; crenate mucronate; stem nearly simple, bearing 2 heads of flowers; heads oblong, crowned by exerted foliaceous paleae; leaves of involucrum 3-10, linear, deflexed. 2 G. Native of Mexico, in meadows, near the town of Tulloco. H. B. et Kunth, nov. gen. 5. p. 30. Heads of flowers white.

Phyteuma-like Eryngio. Pl. 1 to 1 1/2 foot.

45 E. GRA'CLE (Laroch. eryng. p. 54. t. 24. but not of Nutt.) radical leaves petiolate, elliptic, very blunt at the base, crenated; stem nearly naked, few-flowered; leaves of involucrum 5, linear-lanceolate, pungent, a little toothed, twice the length of the head of flowers; paleae subulate, entire, longer than the calyces. 2 G. Native of Mexico, in humid places. H. B. et Kunth, nov. gen. amer. 5. p. 33. Plant a foot high. Heads of flowers of an amethyst blue colour. Leaves of involucrum smooth and yellow above, but green beneath.


46 E. BonPLANDI'A (Laroch. eryng. p. 52. t. 22.) radical leaves petiolate, ovate-oblong, crenated; stem nearly naked, 1-3-flowered; leaves of involucrum 8, and are as well the palea lanceolate; paleae scarcely exceeding the calyces, of equal size and shape. 2 G. Native of Mexico, in shady woods. Tratt. arch. t. 754. E. Bonplandianum, H. B. et Kunth, nov. gen. amer. p. 31. Tube of calyx tubucerulous.

Bonpland's Eryngio. Pl. 1 to 1 1/2 foot.

47 E. nu'deac'ule (Lam. dict. 4. p. 759. t. 187. f. 2.) radical leaves obovate, coarsely spiny-toothed; teeth ciliated; stem dichotomous, nearly naked, bearing few heads; leaves of involucrum lanceolate, spinose, equal in length to the head of flowers, which is roundish; paleae subulate. 2 H. Native of Monte Video; and of Chili, in the province of San Louis, on the tops of the mountains called Cerro del Morro, at the elevation of 4,000 feet. Laroch. eryng. p. 51. Tratt. arch. t. 769. Cham. et Schlecht. in Linnaea. 1. p. 251. There are varieties of this species with bracteas all entire; or the outer ones are spiny-toothed, and the rest entire; or all spiny-toothed ex Cham. et Schlecht. 1.c. The teeth of the leaves are sometimes entire and not again ciliated, and this brings the species very near E. serratum.

Naked-stemmed Eryngio. Pl. 1 1/2 foot.

48 E. Ser'ratu'm (Cav. ann. 2. p. 132. icon. 6. t. 554.) radical leaves petiolate, lanceolate, profusely serrated; stem nearly naked, and almost simple, few-flowered; leaves of involucrum 8-10, subulate, spreading, length of the head of flowers, which is globose; paleae entire, subulate, exceeding the flowers a little. 2 G. Native of Mexico. Laroch. eryng. p. 55. Tratt. arch. t. 776. Calyx covered with white scales. Stem a foot high. Perhaps the same as E. serratum, Linck, enum. 1. p. 260. but the leaves are not doubly serrated as described by him, but acutely crenated. Heads of flowers blue?

Serrate-leaved Eryngio. Pl. 1 foot. 1/2 foot.

49 E. CAR'LI'NE (Laroch. eryng. p. 52. t. 25.) radical leaves lanceolate, deeply spiny serrated, acute; cauline leaves palmatifid: lobes deeply serrated; stem branched, bearing few heads; leaves of involucrum 7-9, ovate-lanceolate, deeply serrated; paleae subulate, simple. 2 G. Native on the mountains about the town of Mexico, and between Joya and Las Vagas, near Pueblonuevo, and on Mount Orizaba. H. B. et Kunth, nov. gen. amer. 5. p. 32. Leaves of involucrum yellow above. Flowers blue.

Var. a, eréctum (D. C. prod. 4. p. 94.) stem erect, solitary; leaves of involucrum ovate, twice the length of the head of flowers. 2 G. Laroch. eryng. l. c. with a figure. Tratt. arch. t. 358.

Var. b, decumbens (D. C. l. c.) stem simple, diffuse; leaves of involucrum equal in length to the head of flowers, which is oblong. 2 G.

Carline-like Eryngio. Pl. 1 foot.

50 E. hor'i/no'des (D. C. prod. 4. p. 94.) leaves glabrous; radical ones unknown; cauline ones ending in a spine-like point: uppermost ones opposite; stem branched, bearing many heads; leaves of involucrum 10-12, oblong-lanceolate, spiny-serrated at the apex, white inside; paleae forming a tuft at the top of the head of flowers. 2 G. Native about the town of Mexico. Allied to E. carline, but differs in the heads of flowers being oval and tufted at the apex.

Horinum-like Eryngio. Pl. 1 foot.

51 E. ci'lla'tum (Cham. et Schlecht. in Linnaea. 2. p. 249.) radical leaves obovate-lanceolate, pectinately serrated; teeth stiff, bristly; stem naked, bearing 1-3 heads; heads elliptic, echinated from the paleae, which are subulate acuminate and smooth, and exceed the flowers; leaves of involucrum similar to the paleae. 2 G. Native of Brazil, in the province of Cisplatine and Rio Grande, in fields. Heads coloured, 8-9 lines long. Ciliated-leaved Eryngio. Pl. 1 foot.

52 E. ex'ligus (Cham. et Schlecht. in Linnaea. 2. p. 248.) leaves linear-lanceolate, spiny-serrated, ciliated, tricuspidate at the apex; stem bearing many heads; heads globose, echinated; leaves of involucrum 10, lanceolate, spiny-toothed, tricuspidate at the apex; paleae tricuspidate, a little longer than the flowers, smooth. 2 G. Native of Brazil, in the provinces of Monte Video and Rio Grande do Sul. Root nearly globose, size of a filbert. Leaves 10 inches long, and 9 lines broad. Heads of flowers small, of one colour.

Elegant Eryngio. Pl. 1 foot.

53 E. nu'num (Gill. et Hook, in bot. misc. 1. p. 334.) stem tall, pinnate; leaves linear-subulate, channelled, spiny-ciliated; spines 2-3 together; heads of flowers globose. 2 G. Native about Buenos Ayres, in the plains called the Pampas. Stem 4-5 feet. Allied to E. ebracteátum, Lam.

Naked Eryngio. Pl. 4 to 5 feet.

54 E. di'va'ri'catum (Hook. et Arn. in bot. misc. 3. p. 550.) stems prostrate, dichotomously divaricate, leafy, rigid; lower leaves bipinnatifid: cauline leaves pinnatifid; segments linear, spiniscent, divaricate; peduncles short, axillary, and in the forks of the stem; leaves of involucrum subulate, reflexed, 4 times shorter than the head of flowers, which is elliptic. 2 F. Native of Buenos Ayres.

Divericate Eryngio. Pl. 1 foot.

55 E. se'rra (Cham. et Schlecht. in Linnaea. 2. p. 246.) leaves ensiform, spiny-serrated, ciliated; stem pinnate, bearing many heads; heads ovate, echinated; leaves of involucrum and outer palea lanceolate, subulate acuminate, spiny-toothed, smooth: inner paleae entire, a little smaller than the outer ones. 2 F. Native of Brazil, in the province of Cisplatine, and near Monte Video. Radical leaves half a foot long. Heads unguiculur, of one colour.

Saw-leaved Eryngio. Pl. 1 foot.

56 E. unc'ni'natum (Cham. et Schlecht. in Linnaea. 2. p. 247.) leaves lanceolate, serrated; serratures ending in recurved spines, ciliated; stem bearing few heads; heads globose, echinated; paleae scabrous, tricuspidate; leaves of involucrum spinosely pinnatifid. 2 G. Native of the south of Brazil.

H. oked-spi'ned Eryngio. Pl. 1 foot.

57 E. fl'o'ri'bu'ndum (Cham. et Schlecht. in Linnaea. 1. p. 245.) leaves ensiform, spiny-serrated, ciliated; stem pinnate, bearing many heads; heads echinated by scabrous, subulate mucronulated paleae; leaves of involucrum ovate, acuminated,
subulate, hardly different from the pæcae. 12. G. Native of the south of Brazil. Stem fustlar at the base.

**Bundle-flowered Eryngium.** Pl. 1 foot.

- **E. aromatica** (Baldw. in Ell. sketch. 1. p. 344.) leaves cuspidate, pinnate, trifid at the apex, with cartilaginous margins; stem leafy, bearing many heads, corymbose; leaves of involucrum 5-7, trifid, about equal in length to the head of flowers; pæcae tricuspidate. 2. H. Native of Florida, in dry pine woods. Stems 9-10 inches high, numerous. Root aromatic.

**Aromatica-rooted Eryngium.** Pl. 1 foot.

- **E. radicatum** (Linn. spec. p. 336. exclusive of the syn. of Grun.) radical leaves lanceolate, bluntish, attenuate at the base, spino-ously serrated; floral leaves palmate-parted, sessile; heads nearly sessile, cylindrical; leaves of involucrum lanceolate, spiny-serrate, much longer than the heads; pæcae among the flowers entire. 2. S. Native of Jamaica, Cayenne, Demerara, Florida, Brazil, &c. in fields and woods. Larch. eryng. p. 56. Michx. fl. bor. amer. 1. p. 163. Sloane, hist. 1. t. 156. f. 3-4.—Herm. ligg. t. 237. Plant with an ungrateful odour when bruised. Flowers white. Calyx ornamented with roundish vesicles, not scales. The radical leaves are sometimes trifid at the apex in the plants we have seen growing in Brazil. The plant named *E. foetidum* by Ucria, a native of Sicily, is probably distinct from this. All parts of the plant are reckoned very powerful anthyllistics, and much used by the negroes and poorer whites on all occasions of that nature, whence they call it *fluedo*. It is chiefly administered in decoctions or infusions. *Fœtid Eryngium.* Fl. Aug. Oct. Clt. 1714. Pl. 1 foot.

- **E. Henkei** (Presl, in herb. Henke, ex D. C. prod. 4. p. 94.) radical leaves lanceolate, 1-nerved, obtuse, attenuate at the base, furnished with spiny serratures from the base to the apex; cauline leaves pinna-tiffid serrated, palmately lobed at the apex: floral ones short, half stem-clasping; cymes twice forked; heads terminal, roundish; leaves of involucrum 5, much longer than the head of flowers, lanceolate-subulate, entire. 2. G. Native of Mexico, in grassy places towards Jalapa. E. Schiedeana, Cham. et Schlecht. in Linnaea. 5. p. 206. Habit of *E. pusillum* on the one hand, and of *E. foetidum* or *E. virginatum* on the other.

**Henke’s Eryngium.** Pl. 1 to 3 feet.

- **E. virginatum** (Lam. dict. 4. p. 757.) leaves all on very short petioles, ovate, toothed, lower ones hardly subcordate at the base; stem very simple, but branched divaricately at the apex; leaves of involucrum 5-7, linear, furnished with a tooth on each side, exceeding the head of flowers, which is globose; pæcae among the flowers tricuspidate. 2. H. Native of North America, in New Jersey, Carolina, and Georgia, in moist meadows and woods. Larch. eryng. p. 40. t. 20. Tratt. arch. t. 781. E. ovalifolium, Michx. fl. bor. amer. 1. p. 165. Flowers pale blue?


- **E. microcephalum** (Wild. herb. no. 5558. Spreng. syst. 1. p. 871.) radical leaves oblong, glaucous beneath, with cartilaginously created margins, having the recesses between the creme glandular; cauline leaves very few; peduncles elongated, naked; leaves of involucrum with cartilaginous margins, lanceolate, ending in spiny points, shorter than the head of flowers, which is small. 12. G. Native of South America, according to Humb. trav. but the particular place is unknown. Leaves 1½ inches long, and 5-6 lines broad. Heads 3 lines in diameter. Paleae not different from the leaves of the involucrum, unless that they are smaller, longer, and terminated by a mucrone, but without the cartilaginous margin.

**Small-headed Eryngium.** Pl. 1 foot.

- **E. depressum** (Hook. et Arn. l. c. 3. p. 551.) plant stemless; radical leaves linear-oblong, spicate, spiny-toothed, having the nerves in the limb branched, with the branches diverging; branches of stem tufted, diffuse, dichotomous, numerous from the neck of the plant; heads of flowers terminating the branches, and in the forks; leaves of involucrum and paleae subulate, about equal, spiny, and entire, or furnished with a short spine on each side at the middle, much exceeding the flowers, which are sessile. 2. H. Native of Chili; and of Chili, near Valparaiso, in Vina de la Mar.

*Var. a, rigidum* (Hook. et Arn. l. c.) branches stiff, forked a little, about equal in length to the leaves. *Var. β, flaccidum* (Hook. et Arn. l. c.) branches elongated, slender, triflotomously divided. Chili at Valparaiso and Casa Blanca.

**Depressed Eryngium.** Pl. 1/2 foot.

- **E. anomalum** (Hook. et Arn. in bot. misc. 3. p. 350.) root simple; leaves coarsely serrate-toothed at the apex; radical leaves roundish, cuneated at the base, petiolate; upper cauline ones cuneated; heads on short peduncles; leaves of involucrum and infrequent, unequal, oblong, spiny-mucronate, quite entire, much exceeding the flowers, which are sessile; fruit papillos from vesicles. 2. H. Native of Chili, about Valparaiso. The fruit and the paleae among the flowers has induced the authors to refer this plant to *Eryngium*, to which its appearance is altogether foreign.

**Anomalous Eryngium.** Pl. 1/2 to 1 foot.


- **E. aquatium** (Linn. spec. 336. var. a. exclusive of the syn. of Grun.) leaves broadly linear, with parallel nerves, remotely spiny-ciliated; lower leaves rather ensiform: floral ones lancate-toothed; leaves of involucrum 8-9, shorter than the head of flowers, which is globose, and as are also as the pæcae entire; stems dichotomous. 2. H. Native of North America, from Pennsylvania to Virginia; also of the Society Islands, California, and Buenos Ayres, in marshes, inundated pastures, and on the banks of rivers. Jacq. icon. var. t. 347. Larch. eryng. p. 5. Ker. bot. reg. t. 572. E. yuccæfolium, Michx. fl. bor. 1. p. 164.—Pluk. alm. t. 975. f. 4.—Mor. ox. 3. p. 167. sect. 7. t. 37. f. 21. Stem erect, 2-3 feet high, terete, simple below. Flowers white, or very pale blue. In North America the plant is called *Rattle-snake-weed*, from its use in curing the bite of that venomous reptile.


- **E. longifolium** (Cav. ann. 2. p. 133. icon. 6. t. 553.) leaves broadly linear, with parallel nerves, remotely spiny-ciliated; stem many times forked; leaves under the branches opposite, very short, 3-5-leaflet; leaves of involucrum 10, deflexed, lancatate, rather shorter than the head of flowers, which is nearly globoso; pæcae entire, exceeding the flowers. 12. G. Native of Mexico, about Pachuca and Real del Monte. Larch. eryng. p. 58. Tratt. arch. t. 766. Flowers white.

UMBELLIFERÆ.

68 E. angustifolium (D. C. prod. 4. p. 95.) radical leaves linear, with parallel nerves, lobately serrated; serrations distant; cauleine leaves few, opposite; heads of flowers short; scales of involucrum and pales very long, linear-subulate, very acute. 2. G. Native of New Holland. Stem terete, a foot high, striated, twice trifid, erect. Leaves of involucrum and palea half an inch long, much longer than the flowers.

Narrow-leaved Eryngo. Pl. 1 foot.

69 E. canaliculatum (Cham. et Schlecht. in Linnaæa. 2. p. 238.) leaves very narrow, channelled, with parallel nerves, shining, spinly-ciliated; spines often accessory; stem paneled, bearing many heads: heads nearly unarmèd, globoso; leaves of involucrum conate at the base, smooth, hardly larger than the paleae. 2. G. Native of the interior regions of Brazil. Habit of E. pristis. Radical leaves 2 lines broad. Spines 7-8 in the space of an inch.

Channelled-leaved Eryngo. Pl. 1 foot.

70 E. Pristis (Cham. et Schlecht. in Linnaæa. 2. p. 237.) leaves with parallel nerves, very narrow, flat, striated, spinly-ciliated, often with accessory spines; stem paneled, bearing many heads: heads globoso, echinatus, subulate, spinly-spiculose bracteas; leaves of involucrum ovate, acuminated, seaboars, twice the length of the calyxes, hardly different from the paleae. 2. G. Native of Brazil, in the province of Rio Grande. Stem 4 feet high and more, solid. Radical leaves tufted, a foot and half a long.

Grampus Eryngo. Pl. 4 feet.

71 E. pandanifolium (Cham. et Schlecht. in Linnaæa. 2. p. 236.) leaves with parallel nerves, linear, obliquely and remotely spinly-toothed: stem paneled, bearing many heads: heads disposed in umbels, egg-shaped, unarmed; leaves of involucrum ovate, acuminated, smooth, hardly different from the paleae, which are rather longer than the calyxes. 2. F. Native of Brazil, in the province of Cisplatine. Heads semi-unguicular, coloured. Radical leaves 18 lines long, broad at the base.

Screw-pine-leaved Eryngo. Pl. 2 to 3 feet.

72 E. petiolatum (Hook. fl. bor. amer. 1. p. 259.) leaves with parallel nerves, lanceolate, tapering into long petiolo, remotely spinly-ciliated; upper leaves narrow, sessile; leaves of involucrum and pales subulate, spinly-ciliated, stiff, twice the length of the flowers. 2. H. Native of north-west America, in moist soils on the plains of the Multnomah river. Petiolo 4-6 inches long. Heads echinatus.

Petiole-leaved Eryngo. Pl. 2 feet!

73 E. Paniculatum (Laroch. eryng. p. 59. t. 26.) leaves with parallel nerves, linear, spinly-ciliated: floral ones very short; stem nearly naked, bearing at the apex umbellate branches; branches bearing 1-3 heads; leaves of involucrum 9-10, lanceolate, and are as well as the paleae entire. 2. G.


Var. b. oligodon (D. C. l. c.) leaves of involucrum hardly different from the palea; lower leaves entire, or scarcely ciliato on the edges. 2. G. Native of Brazil. E. paniculatum, var. a, Cham. et Schlecht. in Linnaæa. 2. p. 234.

Var. bracteosum (D. C. l. c.) leaves of involucrum elongated and reflexed. 2. G. Native of Brazil, in the province of Cisplatine. Cham. et Schlecht. l. c.

Panicled-flowered Eryngo. Pl. 1 foot.

74 E. cymosum (Laroch. eryng. p. 63. t. 31.) leaves with parallel nerves: lower ones linear, channelled, bearing very long, conjunctive, subulate teeth; upper leaves pinnatifid; floral branches umbellate; leaves of involucrum 8-10, linear, quite entire, at length reflexed, longer than the head of flowers, which

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is round; paleae subulate, a little longer than the calyxes. 2. F. Native of Mexico, in the higher plains near Tasco. Tratt. arch. t. 361. H. B. et Kunth, nov. gen. 5. p. 35.

Cymose-headed Eryngo. Pl. 2 feet.

75 E. luzulifolium (Cham. et Schlecht. in Linnaæa. 2. p. 240.) leaves with parallel nerves, linear, denticulated; lower teeth setiferous: upper ones obsoletely spinulose; stem bearing few heads: heads unarmed, globoso; leaves of involucrum ovate, acute, roughish, hardly different from the paleae. 2. G. Native of the south of Brazil. Leaves 2-3 lines broad. Heads pale straw-coloured, as also the rest of the plant.

Luzula-leaved Eryngo. Pl. 1 foot.

76 E. gramineum (Laroch. eryng. 60. t. 27.) leaves with parallel nerves, narrow-linear, remotely spinly-ciliated; stem bearing only 2 heads; leaves of involucrum 8-9, lanceolate-subulate, nearly entire, spreading, a little shorter than the head of flowers, which is ovate; palea subulate, a very little longer than the flowers. 2. F. Native of Mexico, in shady woods near Santa Rosa. H. B. et Kunth, nov. gen. amer. 5. p. 34. Tratt. arch. t. 761. Stem simple, 2 feet high. Heads of flowers of an amethyst colour.

Grassy-leaved Eryngo. Pl. 2 feet.

77 E. bromelifolium (Laroch. eryng. 60. p. 28.) leaves with parallel nerves: bearing large subulate teeth, which are shorter than the breadth of the leaves; radical leaves very long, broadly lanceolate-linear: floral ones opposite, keeled, arched; leaves of involucrum 10, lanceolate, acuminated, few-toothed, exceeding the head of flowers, which is round; palea entire, twice the length of the calyxes. 2. F. Native of Mexico, in humid woods. Tratt. arch. t. 327. H. B. et Kunth, nov. gen. amer. 5. p. 34. Flowers white?

Pine-apple-leaved Eryngo. Pl. 3 to 4 feet.

78 E. pectinatum (Presl, in herb. Henck. ex D. C. prod. 4. p. 96.) leaves with parallel nerves, bearing twin, subulate teeth, 1 in each pair, very short, and the other longer than the breadth of the leaves; radical leaves long, lanceolate-linear: floral ones opposite; leaves of involucrum 10, lanceolate, acuminated, coarsely spinly-toothed at the base. 2. F. Native of Mexico. E. Deppeanum, Schlecht. et Cham. in Linnaæa. 5. p. 297. Very like E. bromelifolium, but differs in the leaves being much narrower. Branches of stem bearing either 1 or 3 heads.

Pectinate-leaved Eryngo. Pl. 2 to 3 feet.

79 E. Humboldtii (Laroch. eryng. p. 61. t. 29.) leaves with parallel nerves, lanceolate-linear, closely spinly-toothed: spinules in pairs; stem branched above; heads of flowers oblong, conglomerate; leaves of involucrum 7-8, lanceolate, toothed, usually shorter than the head of flowers; outer palea toothed: inner ones entire. 2. G. Native of New Granada, on Mount Quindiu. Tratt. arch. t. 762. E. Humboldtianum, H. B. et Kunth, nov. gen. amer. 5. p. 34.

Humboldtii Eryngo. Pl. 2 to 3 feet.

80 E. proteaeflorum (Laroch. eryng. p. 62. t. 30.) leaves with parallel nerves; cauline leaves densely crowded, rather imbricated, lanceolate, coarsely spinly-toothed; heads of flowers large, oblong; leaves of involucrum 20-22, large, toothed, lanceolate, exceeding the head of flowers; palea entire. 2. F. Native of Mexico, at the foot of the burning Mount Jorullo, and on Mount Orizaba. Tratt. arch. t. 773. H. B. et Kunth, nov. gen. amer. 5. p. 35. Leaves of involucrum smooth and yellow above.

Protea-flowered Eryngo. Pl. 2 to 3 feet.

81 E. monoecephalum (Cav. ann. 2. p. 116. icon. t. 553.) lower leaves with parallel nerves, linear, channelled, bearing unequal, tinate, subulate teeth; upper leaves pinnatifid; stem bearing only 1 head of flowers; leaves of involucrum 20-24, lanceolate, furnished each with 1-2 spreading spines, exceeding
the head of flowers, which is roundish. **t.** F. Native of Mexico, near Huannajto and Chilapencino. Laroch. eryng. p. 62. Tratt. arch. t. 767.

**One-headed Eryngo.** Pl. 4 feet.

82 E. ju'ñceum (Cham. et Schlecht. in Linnaea. 3. p. 241.) leaves with parallel nerves, very narrow, inconspicuously spiny-denticulated, acute; stem bearing few heads; heads nearly unarmed, globose; leaves of involucrum 10-19, connate at the base, ovate, 3-nerved, acuminate, and are as well as the palea smooth. **t.** G. Native of Brazil. Heads of one colour, 5 lines in diameter.

**Rusky Eryngo.** Pl. 1 to 2 feet.

83 E. ekiéorphum (Cham. et Schlecht. in Linnaea. 3. p. 242.) leaves very narrow, linear, with parallel nerves, quite entire, fringed with villi at the base; stem bearing 1 or few heads; heads between egg-shaped and globose, unarmed; leaves of involucrum as well as the palea elongated, acuminate, and striated. **t.** G. Native of Brazil, in the province of Cisplatlin and Rio Grande. Stem bearing few leaves, from 1 to 2½ feet high. Leaves a line broad: radical one a foot and more long. Bracteas longer than the flowers. Habit almost of a *Cypérus.*

**Wool-bearing Eryngo.** Pl. 1 to 2 feet.

84 E. sanguisôbra (Cham. et Schlecht. in Linnaea. 3. p. 239.) leaves linear, with parallel nerves, spiny-serrated: serratures towards the apex of the leaf blunt and retrograde; stem naked, bearing few heads; heads ovate; leaves of involucrum as well as the palea subulately acuminated, a little longer than the flowers. **t.** F. Native of the south of Brazil, in the province of Rio Grande. Tube of calyx clothed with squarrose scales at the angles. Heads echinate, coloured, 9-10 lines long.

**Sanguisôbra-like Eryngo.** Pl. 2 feet.

85 E. erbratea'tum (Lam. dict. 4. p. 759.) leaves linear, with parallel nerves, usually ciliated at the base with long bristles; stem trichotomously corymbose; heads cylindric, unarmed; leaves of involucrum as well as the palea entire, shorter than the flowers. **t.** G. Native of the south of Brazil. Laroch. eryng. p. 64. t. 32. Tratt. arch. t. 758. Cham. et Schlecht. in Linne. 2. p. 244. E. nudiflórum, Willd. herb. which was collected about Ibague, in New Granada, is the same, according to Cham. et Schlecht. i. c. Stem erect, 2 feet high. Habit of the last species. Calyx rough from scales.


**Subgenus II. Lessônia (in honour of — Lession, a writer on composite).** Bertero, miss. Hook. bot. misc. 3. p. 351. Small shrubs or trees, with dichotomous branches, which are marked below by the cicatrices of the fallen leaves, but densely leafy at the extremities. Peduncles terminal, bearing a solitary, globose, or hemispherical head of flowers each.


**Bupleuroôdes-like Eryngo.** Shrub 5 to 6 feet.

87 E. sarçôphyllum (Hook. et Arn. in bot. misc. 3. p. 352.) arborescent; leaves cylindrical, fleshy; leaves of involucrum wanting. **t.** G. Native at Massa Fuera, near Juan Fernandez. The heads of flowers are exactly globose, without any involucrum. Branches dichotomous.

**Fleshy-leaved Eryngo.** Shrub 5 to 6 feet.

† *Species not sufficiently known.

88 E. palle'scens (Mill. dict. no. 5.) radical leaves roundish, multiform; heads pedunculate. **t.** H. Native of Europe. E. alpinum amethystinum, capitulo majore pallescente, Tourn. inst. 327. Allied to *E. amethystinum,* according to Mill, but distinct from it.


89 E. Americânum (Walt. fl. carol. p. 192.) leaves entire: radical ones roundish: cauline ones ovate-lanceolate: uppermost ones trifid; stem procumbent. **t.** H. Native of Carolina.

**American Eryngo.** Pl. procumbent.

90 E. carthamoides (Smith, in Rees' cycl. vol. 13.) leaves oblong, toothed, undivided, coriace at the base, and stem-clasping; stem nearly simple, bearing few heads; leaves of involucrum few and ovate. **t.** H. Native of Mauritania. Perhaps the same as *E. aquifolium*?

**Carthamâs-like Eryngo.** Pl. 1 foot.


**Starry-blue Eryngo of Mount Lebanon.** Pl. 1 foot.

92 E. pá'rum palmâ're fôlis serra'tâs. Mor. oxon. sect. 7. t. 36. f. 13.

**Small Eryngo with serrated leaves.**


**Mexican Eryngo with long toothed leaves.** Pl. 1 foot.

94 E. laterrifôrum (Lam. dict. 4. p. 475.) or Grômen orientâle spicâtum (Tourn. cor. p. 30.) is not a *Cénchus,* as had been supposed by Linnaeus, nor an *Eryngium* but *Corisâmrum* pângenos.

**Cult.** Most of the species of this genus are extremely handsome and beautiful, and particularly so the hardy kinds, which are therefore well fitted for decorating borders. They all succeed well in common garden soil; but the lighter and more sandy the soil is the better they will grow. The greenhouse or frame kinds should be grown in pots, so that they may be sheltered in winter. All are readily increased by dividing at the root, or by seed.

**XXXII. ACTINÂNTHUS.**

(from **a**ctir, actin, a ray, and **a**rchos, anthos, a flower; involucels). Ehrenb. in Linnaea. 4. p. 398. D. C. prod. 4. p. 668.

**Lin. syst.** Penîndria, Dígynía. Flowers monoeccious, female ones capitate: male ones in capitae umbels: marginal ones joined, abortive, and spinescent, having the receptacle destitute of palea. Teeth of calyx permanent. Petals oblanceolate at the apex, rather cilirose. Fruit compressed from the sides: mericarps with the 5 alternate sutureal ribs strongest: having the furrows between the ribs furnished with 1 vitae each, and the commissure with 2 vitae; carpophore adnate.—A stiff, squarrose plant. Lower leaves ternately bipinnate. Involucrum none; involucels of many leaves. Flowers white. This genus comes between *Oenânthe* and *Eryngium,* according to the fruit, but from the inflorescence it is analogous to *Echinâphora.*

1 A. Syn'tàctus (Ehrengb. i. c.). **t.** H. Native of Syria, between the towns of Sahlé and Balbec.

**Syrian Actinânthus.** Pl. 1 foot.

**Cult.** See *Eryngium* above for culture and propagation.

§ 2. Umbels compound or perfect. Vitae on the fruit variable, rarely wanting.

- *Fruit having only primary ribs present.*

**Tribe IV.**

**AMMI'NÆ** (plants agreeing with *Ammi* in important

LIN. SYST. Pentândria, Digýnia. Margin of calyx 5-toothed. Petals oblong, ovate, entire, spreading, having an inflexed or involucral point. Fruit roundish or ovate, didymous, plicately wrinkled; mericarps solid, with 5 thick, very blunt, circularly plicate ribs, covering the furrows; each furrow furnished with a vitta, and ornamented with plicate tubercles. Carphophore bipartite. Seed gibbously convex, flat in front.—Perennial smooth herbs, natives of the Levant. Leaves deciduous. Umbels numerous. Universal involucrum wanting or few-leaved; involucrels 3-5-leaved. Flowers yellow, dioecious, or polygamous. This genus differs from Câchrys in the seed not being involute nor free, but straight, and adnate to the calyx. It differs from Sâxel in the form of the petals and sunk ribs of the fruit, and from Hippomâria in the seeds being flatish in front, not with involutive margins.


2 R. Microcâ'ria (Hoffm. umb. 175. fig. in tit. 3 and 21.) leaves deciduous; segments linear-setaceous; involucrum many-leaved; flowers for the most part hermaphroditic; fruit subglose, wrinkled. 2. H. Native of Caucasus at Nasrâna, and of Iberia. Câchrys microcarpa, Bieb. fl. taurn. 1. p. 218. (exclusive of the syn. of Mor.) suppl. p. 216. Bieb. in Schultes, syst. 6. p. 445. Câchrys Sicula, Gild. trav. p. 154-190. ex Bieb. Fruit roundish, rather didymous; ribs thick, concretes into a mass, which is glossy inside; furrows narrow, each furnished with 1 vitta. Habit almost of Câchrys crispa, but differs in the true involucra not being pinnatifid, but the leaves are multifid and disposed in whorls under the flowering branches beneath the true umbel.

Var. B. rigida. (D. C. prod. 4. p. 98.) leaves more stiff and glaucous than the species. 2. H. Native of the Caucasus.

Smaller-frooted Rumia. Pl. 1 foot.


4 R. Lëgôôsa (Meyer, verz. pflanze. p. 125.) leaves supra-decompound; leaflets bifid or trifid; segments linear, shortish; involucres obsolete; fruit ovate; ribs straight, destitute of plaits and tubercles. 2. H. Native of Caucasus on the higher mountains of Talusch, at the elevation of 5000 to 6000 feet. Trinia Hoffmannii, D. C. prod. 4. p. 104.

Var. B. microcarpa (Meyer. l. c.). Native of Caucasus, on Mount Beschmach.

Smooth-angled-fruit Rumia. Pl. i. 1 to 2 feet.

5 R. Athamanthiodes (D. C. prod. 4. p. 98.) leaves dec teproduct; segments cuneiformly-ovate, pinnatifid, pubescent; leaves of both the involucrum and involucel numerous, with membranous margins; fruit ovate, having the ribs tubercular. 2. H. Native of Siberia. Câchrys athamanthioides, Bieb suppl. p. 217. Athamâna carvfîolia, Willd. herb. is either referable to this or to the preceding species.

Athamanthi-like Rumia. Fl. July. Cult. 1818. Pl. i. 2 ft. Cult. A light soil answers the species of this genus best; and they are easily increased by seeds.


LIN. SYST. Pentândria, Digýnia. Margin of calyx 5-toothed, foliaceous. Petals obcordate, with an inflexed point. Fruit roundish, contracted from the sides, didymous; mericarps with 5 flatish, equal ribs; lateral ribs marginal; furrows furnished with 1 vitta each, which fills them, even in a dried state, but not elevated so much as the ribs. Commissure furnished with 2 vittae; vittae under a loose membrane; carphophore bipartite. Transverse section of seed terete.—Perennial; glabrous, aquatic, poisonous herbs. Stems terete, fistular. Leaves tripinnate, or biternate. Involucrum wanting or of very few leaves; involucres many-leaved. Flowers white.

* European species. Fibres of roots cylindrical and slender.

1 C. viroâ (Lin. spec. 368.) trunk of root hollow, divided into cells by transverse dissepiments; fibres of roots disposed in whorled fascicles; leaves trinervate; segments lanceolate, serrated; umbels opposite the leaves and terminal. 2. H. W. Native of the north of Europe, from Lapland to Germany; and of Siberia in ditches, lakes, rivers; North America between lat. 54° and 64°. In England it is not common, but is found at Isleworth, in the Coln, near Colnbrook, and Uxbridge; on Hounslow Heath; in the Isle of Ely; Lovingland, in Suffolk; near Norwich and Yarmouth, &c. In Scotland it is more common, as in the Lake of Forfar, and other lakes in Strathmore, &c. Oed. fl. dan. t. 208. Nees. off. pflz. 12. t. 8. Hayne, arz. gew. 1. t. 37. Bull. herb. t. 91. Smith, engl. bot. t. 479. Blackw. t. 354. Pech. icon. t. 213. C. aquaticâ, Wefer. mon. phil. trans. 44. t. 237. t. 4-5. Cicturâ aquâtica, Lam. dict. 2. p. 2. Coriândrum Cicuta, Roth. germ. 1. p. 130. Slum Cicuta, Vest. enh. no. 311. Flowers white; anther reddish. Towards the end of autumn the root for the succeeding summer is formed out of the lower part of the stalk; this is divided transversely into many large unequal cells, so that it becomes specifically lighter than water, and in winter, when the rivers or pools swell, is buoyed up. The old root then rots, floats all the winter, and in rivers is frequently carried to great distances, In the spring the old root is washed away, and the new one, on coming near the soil, sends out many slender fibres, by which it is again fixed, grows, and flowers. Watson, in phil. trans. It is one of the rankest of our vegetable poisons. Numerous instances are recorded of its fatality to the human species by Wefer, Haller, and others; and in the phil. trans. by Dr. Watson. Linneus relates its fatal effects on kine; and Dr. Withering relates that early in the spring cows often eat it, and are killed by it, but as the summer advances, and its scent becomes...
stronger, they carefully avoid it: that goats, however, devour it greedily with impurity, and that horses and sheep eat it with safety. Strong emetics are the most approved remedy for this poison.

*Var. β, tennifolia* (Schrank, akad. munch. philos. class. 7. p. 56. t. 4. f. 1.) trunk of root slender, bearing fascicles of cylindrical fibres; leaves bipinnate; segments linear, entire, and sub serrated; umbels opposite the leaves, and terminal. 2. W. H. Native of Germany, near Fussen.

Poisonous Water Henlock or Cowbane. Fl. July. Britain. Pl. 2 to 3 feet.

**American species.** Fibres of roots oblong and fleshy.


Cult. The species should be planted in ponds or ditches, where they will increase without any further care.


Lin. syst. Pentândria, Digynia. Margin of calyx obsolete, or with 5 very short teeth. Petals elliptic, tapering into a long inflexed acumen. Fruit contracted from the sides, rather dilated, roundish or oval; mericarps with 5 filiform, prominent, equal ribs: lateral ribs marginal; furrows between ribs furnished with 1 vitta each, and the commissure with 2 vittae; carpophore biiartite. Seed teretily convex, scarcely flatish in front.—Perennial herbs, natives of North America. Stems nearly simple, erect. Leaves ternate or binate; segments ovate, or cordate. Involucrum wanting; involucels few-leaved, variable. Flowers yellow, rarely white, or dark purple. This genus differs from *Smyrnium* in the seed not being involute, and from *A'pium* in the petals ending in a long inflexed acumen each.


Lin. syst. Polygâmia, Monogéia. Calyx unknown. Petals equal, lanceolate, acuminate, inflexed. Fruit oblong-elliptic, compressed from the sides; mericarps with 5 ribs, the 3 dorsal ones are elevated and acute, and the 2 marminating ones rounded: each furrow having 1 vitta. Albumen 5-angled; angles roundish.—Herb suffruticosum at the base. Leaves tri-ternitimately pinnate. Flowers dark purple, polygamous. Perhaps sufficiently distinct from *Thaspium.*

1. *P. atrópurpurae* (Lel. in sem. hort. hamb. 1828. p. 16.) 2. F. Native of Mexico. Mature fruit brownish, and have a strong scent of parsley, as well as every part of the plant.

Dark-purple-flowered Pentacryptta. Pl. 2 feet.

Cult. This plant will require to be protected in winter; it can only be increased by division or by seeds.


Lin. syst. Pentândria, Monogéia. Margin of calyx obsolete. Petals roundish, entire. Stylodium depressed. Fruit roundish, contracted from the sides, didymous; mericarps with 5 filiform equal ribs: lateral ribs marginal; furrows between the
ribs having one vittae each, but the outer ones have 2-3 vittae; carpopore undivided. Seed gibbously convex, flattish in front. —Herbs, having the roots thickish at the neck. Stems furrowed, branched. Leaves pinnate; leaflets cuneiform, cut. Umbels axillary on the branchlets, and nearly sessile at the top of the stem. Involution and involucres wanting. Flowers white or greenish.

**Sect. I. Euamium** (from eu, well, and apium, celery; this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 101. Point of petals closely involute.

1 A. graveolens (Lin. spec. 379.) plant glabrous; leaves pinnate: upper ones ternate; leaflets cuneate, cut and toothed at the apex. g. H. Native nearly throughout the whole of Europe, even to Caucasus, in ditches; and also of Chili, near Mendoza, and of the Falkland Islands. D'Urv. fl. mal. p. 457. In Britain it is a common weed by the sides of ditches, brooks of water, and marshy ground, especially towards the sea. Smith, engl. bot. t. 1310. Schultes, syst. 6. p. 429. Hayn. arz. gew. t. 24. Fl. dan. t. 790. Planch, icon. t. 217. Siselli graveolens, Scop. carn. no. 360. Sium A'pium, Roth, germ. I. p. 128. Sium graveolens, Vest. man. bot. p. 517. Celery is known in Britain in its wild state under the name of smallage. The seeds and whole plant in its native ditches are acrid and dangerous, with a peculiar rank coarse taste and smell, and the effects of cultivation in producing from it the mild sweet stalks of celery are not a little remarkable; for which, and its name, we are indebted to the Italians, and which has now supplantec our native Alexander's (Smyrium Olaus trium).

**Use.**—The blanched leaf-stalks are used as a salad from August till March; they are also stewed, and put in soups. In Italy the unblanched leaves are used for soups, and when neither blanched nor the green leaves can be had, the seeds bruised form a good substitute. The root only of the variety called the celeriac, is used, and is excellent in soups, in which, whether white or brown, slices of it are used as ingredients, and readily impart their flavour. With the Germans it is also a common salad, for which the roots are prepared by boiling, until a fork will pass easily through them; after they are boiled and become cold, they are eaten with oil and vinegar. They are also sometimes served up at table, stewed with rich sauces. In all cases before they are boiled, the coat and the fibres of the roots, which are very strong, are cut away, and the root is put in cold water on the fire, not in water previously boiling. The varieties are as follows:

**Var. β, dulce** (D. C. prod. 4. p. 101.) leaves erect; petioles very long; leaflets 5-lobed, serrated. A'pium dulce, Mill. dict. no. 5. A'pium Celleri, Gern. fruct. 1. t. 22.

**Celery of the English; celeri or ache of the French; appieck of the Germans; and appio of the Italians.** There are several sorts of common or sweet celery, viz. 1 Common upright Italian. 2 Large hollow upright. 3 Solid stalked upright. 4 Large red stalked upright.

**Var. γ, rapaceum** (D. C. 1. c.) leaves spreading; petioles short; segments of leaves 5, serrated; root roundish. A'pium rapaceum, Mill. dict. no. 5. Celeriac of the English; celeri-race of the French; and knott-cellerie of the Germans. There are 2 or 3 sorts of celeriac, viz. 1 Common celeriac or turnip-rooted celery. 2 Celeri-race of the French; and 3 Knott-cellerie of the Germans. This last is harder than the other kinds, and will continue longer in spring. It is grown to a large size in the neighbourhood of Hamburg, and is sometimes imported for the London market.

**Var. δ, Lusitanicum** (D. C. 1. c.) radical leaves 3-lobed; caulis one 5-lobed, crenated. A'pium Lusitanicum, Mill. dict. no. 7.

**Estimate of sorts.**—The first three sorts of var. β are preferable for general culture. The red variety is rather coarse for salads, but is hardy to stand the winter, and well adapted for soups and stews. The sorts of var. γ are cultivated for their roots, under the name of celeriac, which are fit for use in September and October, and may be preserved in sand through the winter. Celery may be grown to 10lbs. weight, and averaging 6lbs. each head. A head of celery, we are informed (Cal. mem. vol. 2. p. 297.), was dug up on the 4th of October, 1815, at Longford, near Manchester, which weighed 9lbs. when washed, with the roots and leaves still attached to it, and measured 4 feet 6 inches in height. It was the red sort, perfectly solid, crisp, and firm, and remarkably well flavoured.

**Propagation.**—All the sorts are raised from seed; and half an ounce is reckoned sufficient for a seed-bed 4 feet and a half wide by 10 feet in length, of the upright sorts; but for celeriac, a quarter of an ounce will be enough for a bed 4 feet square.

**Soil.**—Celery delights in a soil rather moist, rich in vegetable mould, but not rank from new unrotted dung.

**Times of sowing.**—The most forward crop is slightly forced. Any of the varieties may be sown in the spring in the open garden, at 2 or 3 different times, from the 21st of March until the first week of May; but the principal sowing should be made in the first fortnight of April.

**Early crop.**—For early summer and autumn celery, sow a small portion towards the end of February, in a moderate hotbed. When the young plants are about 2 inches high, put out some into a warm border, 2 or 3 inches apart, or rather into a second slight hot-bed, if before the 21st of March, as well to protect the plants, as to expedite their growth for final planting. As soon as the leaves are 6 inches high, in May or June transplant them into trenches for blanching, as directed below for the main crops. But as these early sown plants will not continue long in full growth before many of them will pipe or run, you should plant only a moderate crop, for a temporary supply; when they are advanced in the trenches from 8 to 12 inches in growth, begin to earth them up several inches on both sides of each row; continue earthing up by degrees as they rise higher, till they are whitened from 6 to 12 inches in length; when they may be dug up as wanted.

**Main crop.**—To raise the main crops for summer, autumn, and winter, make a considerable sowing at the commencement of April. Sow in beds of light mellow earth, and rake in the seed lightly and regular. In very dry weather give moderate waterings, both before and after the plants come up. When they are 2-3 or 4 inches high, thin the seed-bed, and pick out a quantity at successive times into intermediate beds, 3-4 inches asunder. Water those removed, and till they have struck fresh root. D. Judd sows about the middle of January in a warm situation, on very rich ground, protecting it by mats at night. When the plants are from 2-3 inches high, he pricks them out into a nursery-bed, immersing the plants, as he draws them, in water, so as they may remain moist while out of ground. The plants remain in the nursery-bed until they become very strong. John Walker, a gardener near Manchester, grows the red celery; sows for the early crop about the 1st of March, and for the late crop about the 1st of April. The seed-bed is formed of fresh dark loamy soil, mixed with old rotten dung, half and half, and placed on a hot-bed. The nursery or transplanting bed is formed with old hot-bed dung, very well broken, laid 6 or 7 inches thick, on a piece of ground which has lain some time undisturbed, or has been made hard by compression. The situation should be sunny. The plants are set 6 inches apart in the dung, without soil, and covered with hand-glasses. They are watered well when planted, and frequently afterwards. By hardening the soil under the dung in which the plants are set,
the root is formed into a brush of fibres; and by thus preventing the pushing of a tap-root, the plant never runs to seed before the following spring."—Cal. hort. mem. vol. 2.

Transplanting into trenches.—When either the plants left in the seed-bed, or those removed, are from 6 to 12 inches high, or when the latter have acquired a stalky growth, by 4 or 5 weeks’ nurture in the intermediate bed, transplant them into trenches for blanching. For this purpose allot an open compartment. Mark out the trenches a foot wide, and from 3 feet to \(\frac{3}{4}\) feet distant; dig out each trench lengthwise, a spade in width, and a light spade deep, that is, 6 or 8 inches, or even a foot. Lay the excavated earth smoothly in the intervals, making the edges of the trenches equally full and straight; also loosen the bottom moderately, in a level order, to receive the plants. Before inserting them, it would essentially strengthen the soil, to apply some good rotten dung in each trench 3 inches thick, and let it be dug into the bottom regularly a moderate depth. Then having lifted the plants, just thin any long straggling tops of the leaves and fibres of the roots; also slip off side shoots; plant a single row along the bottom of each trench, 4 or 5 inches apart. Give a good watering directly, and occasionally after, if the weather be dry, till the plants take root, and show renewed growth. Continue planting out a monthly succession in June, July, August, and September; thus providing for a supply from July and August of the present summer throughout the course of autumn and winter, till May in the following spring. Judd prepares his ground for transplanting by trenching in 2 spades deep, mixing with it in the operation a good dressing of well-reduced dung from the old forcing beds. He says, "I give it a second trenching in order that the dung may be better incorporated with the mould, and then leave it in as rough a state as possible, till my plants are ready to be put out." In the ground thus prepared, he forms trenches 20 inches deep, and 6 feet distant from each other, measuring from the centre of each trench. Before planting he reduces the depth of the trenches to 5 inches, by digging in sufficient dung to fill them so much up. At the time of planting, if the weather be dry, the trenches are well watered in the morning, and the plants are put in, 6 inches apart in a row, in the evening, care being taken by the mode above mentioned, to keep the fibres quite wet whilst out of ground; as they are drawn from the nursery-bed, the plants are dressed for planting, and then laid regularly in the garden pan. The trenches, in which his rows of celery are planted, being so very shallow, the roots of the plants grow nearly on a level with the surface of the ground: this he considers particularly advantageous; for as considerable cavities are necessarily formed on each side when the moulding takes place, all injury from stagnant water or excess of moisture is prevented. The trenches when planted are watered, as may be required. He prepares his ground for celery during the winter, and avoids putting much of a crop in the space between the trenches, especially one that grows tall, as he finds celery does best when it grows as open as possible. Walker makes his trenches at 4 feet distance, and 18 inches wide, 12 deep, and filled 9 inches with a compound of fresh strong soil, and well-rotted dung; three-fourths dung, and one-fourth soil. Old hot-bed dung is the best. The plants should be taken up with as much soil as will conveniently adhere to the roots, and the side-shoots are removed from the stems; they are then set with the hand at 9 or 10 inches apart, in the centre of each trench; it is necessary to water well until they are ready to be earthed, but not afterwards.

Landing or earthing up.—As the plants in trenches rise from 10 to 15 inches high, Abercrombie begins to land-up for blanching, observing "to trim in the earth gently when first raised to the stems, with a hoe or spade, but mostly the latter. When the plants are of a more advanced growth, earth them up equally on both sides each row, 3-4 or 5 inches, according to the strength and height of the different crops. Repeat this once a week or fortnight, till by degrees they are landed-up from 12 inches to 2 feet, in order to Blanch them of some considerable length. Continue thus landing-up the different crops from July till February. As the autumnal and main winter crops attain full growth, give them a final landing-up near the tops, which will increase the length of the blanched part, and also protect the later crops more effectually during the winter." In landing-up celery, Judd does "not think it well to load the plants with too much mould at first. The two first mouldings, therefore, are done very sparingly, and only with a common draw-hoe, forming a ridge on each side of the row, and leaving the plants in a hollow, to receive the full benefit of the rain and the waterings. When the plants are strong enough to bear 6 inches high of mould, the moulding is done with the spade, taking care to leave bases enough to support the masses of mould, which will ultimately be used in the ridge, and still keeping for some time the plants in a hollow, as before directed. The process of moulding is continued through the autumn, gradually diminishing the breadth of the top, until at last it is drawn to as sharp a ridge as possible to stand the winter. In the operation it is necessary, in order to prevent the earth from falling into the hearts of the plants, to keep the outer leaves as close together as possible; for this purpose, before I begin the moulding I take long bands of bass matting, tied together till of sufficient length to answer for an entire row, and I fasten this string to the first plant in the row, then pass it to the next plant, giving it one twist round the leaves, and so on till I reach the other, where it is again fastened; when the moulding is finished, the string is easily unravelled, by beginning to untwist it at the end where it was last fastened." Walker, having removed the lateral shoots, the leaves of each plant being held together with one hand, the soil pulverized, is drawn round with the other, taking care not to earth up too high at once, nor too close. The heart should always be left quite free. This may be repeated about once a fortnight until the plants are ready for use.

Late crop.—For late spring celery to stand till the end of May in the returning spring, without running considerably, it is expedient to make a small late sowing at the commencement of May. The plants when 6 weeks old may be pricked on intermediate beds, 6 inches by 3 asunder; to remain till September or October, then transplant them into moderate trenches; as they advance in growth, earth them up a little in winter, and finally in the spring in February and March.

Occasional shelter.—On the approach of frost take up a part of the crop, and lay it by under dry sand for winter use. To preserve the plants left in the bed, lay some long dry litter over the tops, which remove in every interval of mild weather. It is a common complaint, that very fine looking celery is often found to be rotten at the base of the leaf-stalks; the fact being, that when it is full grown, and the blanching completed, it begins to decay, and will not keep good in the ground for more than a month at most. Some, therefore, take up and preserve in dry sand, but in that situation it soon becomes tough and dry. The best mode seems to be that of forming successive plantations.

Taking the crop.—It is best to begin at one end of the row, and dig clean down to the roots, which then loosen with a spade, that they may be drawn up entire without breaking the stalks.

Cultivation of celeriac.—The times of sowing are the same as that for other sorts of celery. The plants require a rich well-manured soil, and according to an account communicated by Lord Stanhope to Mr. Sabine, the plants are reared on a hot-bed under glass, and transplanted when 2 or 3 inches high to another hot-bed, and set an inch and a half apart. In the be-
ginning or middle of June they are transplanted into flat beds in the open air, at the distance of 15 inches from each other, and not in trenches like other celery. They must be abundantly watered as soon as they are set out, and the watering must be repeated every other day, or, if the weather should be warm, every day. As they increase in size they will require a greater quantity of water, and they must be occasionally hoed. The roots will be fit for use in September or October. Mr. Sabine states that he has been informed, that the plan of giving excess of water is peculiar, and that the vigorous growth of the plant is more dependent on richness of soil than on any other cause. Abercrombie directs to earth up the bulbs 4 or 5 inches to blanch them, when they are full grown.

To save seed.—Either leave some established plants in the spring where growing; or in February or March dig up a competent number, cut down the top leaves, and set the plants in the ground full 2 feet asunder. They will produce seed in autumn. Walker grows only red celery, and in preparing plants for seed, chooses the most solid, of the redder colour, and the smallest size. When taken out of the transplanting bed, the lateral shoots being removed, they should be planted in a dry warm situation, where the seed will ripen well.


2 A. *Chile* L ≈ (Hook. et Arn. in hot. misc. 3. p. 353.) plant glabrous; stem nearly terete, hardly angular; leaves spreading, bipinnate; lobes cuneated, somewhat trifidly cut, quite entire; petals involute at the apex. *H.* Native about Valparaiso. The plant is much stouter than *A. graveolens*, and the stem is not deeply furrowed. The leaves resemble those of common parsley, but are much smaller, and more flaccid. The peduncles or short lateral branches are stout and firm. Fruit much larger than that of *A. graveolens*. Involucrum and involucules wanting. *Chili* Celery. Pl. 2 feet.

*Sect. II. OREOSCHLES* (ορος ορεος, oros oreos, a mountain, ορεινος, oreinon, an umbel; habitat of plants). D. C. prod. 4. p. 101. Petals denticulated, with an inflexed point.


*Mountain Celery*. Pl. 2 to 3 feet.

4 A. *Ranunculifolium* (H. B. et Kunth, l. c. p. 18. t. 421.) leaves somewhat ternate; leaflets obovate-cuneated: lateral ones 5-lobed: intermediate one 3-parted; segments 2-3-lobed. *Y.* F. Growing along with the preceding, of which it is probably only a variety. *Crowfoot-leaved* Celery. Pl. 2 to 3 feet.

5 A. *Glaucescens* (H. B. et Kunth, l. c.) leaves subternate; leaflets obovate-cuneated; trifid; lobes bifid or trifid. *Y.* F. Growing along with the two preceding species, of which it is perhaps only a variety. *Glaucescent* Celery. Pl. 2 to 3 feet.

6 A. *Commersoni* (D. C. prod. 4. p. 101.) leaves pinnate; leaflets multifid: lobes linear. *Y.* F. Native of South America. Styles a little longer and more divergent than any other of the species. It is very nearly allied to *A. ranunculifolium*, but the segments of the leaves are narrower and more acute, and the lower leaves are pinnate. *Commerson's* Celery. Pl. 2 to 3 feet.

† Species not sufficiently known.

7 A. *Fratrophylleum* (Horn. hort. hafn. suppl. p. 128.) segments of radical leaves cordate, and truncate at the base, and trifid at the apex. *H.* Native country unknown. The fruit is very like that of *A. graveolens*. *Broken-leaved* Celery. Fl. June, July. Clt. 1826. Pl. 1 to 2 feet.


*Southern Celery*. Pl. 1 foot.

Cult. The species will grow in any common soil, and are increased by seeds.


LIN. SYST. Pentandria, Digynia. Margin of calyx obsolete. Petals roundish, incurved, entire, hardly emarginate, with an inflexed point. Stylopodium short, conical, rather crenulated. Styles diverging. Fruit ovate, contracted from the sides, somewhat didymous; mericarps with 3 equal filiform ribs: lateral ribs marginal; having the furrows between the ribs furnished with one vitta each, and the commissure with 2. Carpophore bipartite. Seed gibbously convex, flatish in front.—*Branched* glabrous herbs. Leaves compound, with cuneate segments. Involucra few-leaved; involucels many-leaved. Flowers white or greenish, uniform: those in the disk of the umbel frequently sterile. Stamens longer than the corolla.

1 P. *sativum* (Hoffm. et Koch, l. c.) stem erect, angular; leaves decumbent, shining; lower leaflets ovate-cuneated, trifidly toothed: superior ones lanceolate, nearly entire; leaves of involucel filiform. *H.* Native of Sardinia, Greece, Archipelago, Turkey, Chili about Conception, &c. on shaded rocks; and now cultivated in every culinary garden. Nees. off. pflanz. 16. t. 21. *A'pium* Petroselinum, Lin. spec. 379. Hayn. arz. gew. 7. t. 23. *A'pium* vulgare, Lam. fl. fr. 3. p. 1027. *A'pium* tenuifolium, Riv. pent. irrit. with a figure. The Parsley is called *Persil* in French, Petroselit in German, and *Petroselino* in Italian. It is a hardy biennial; introduced to England in 1548 from Sardinia. It is now so common as to be naturalised in several places both in England and Scotland. The root leaves are much curled in some varieties. The flowers are yellow, and appear in June; they have usually one leaf at the origin of the universal umbel; and the involucel often of from 6 to 8 short small leaves, fine almost as hairs to the partial umbels.

"It may be right to notice, that the poisonous plant called fools-parsley (*Æthusa Cynapium*), a common weed in rich garden soils, has sometimes been mistaken for common parsley. They are very easily distinguished: the leaves of fools-parsley are darker green, of a different shape, and, instead of the peculiar parsley smell, have when bruised a disagreeable odour. When the flower-stem of the fools-parsley appears, the plant is at once distinguished by what is vulgarly called its beard, the 3 long pendant leaves of the involucrum. The timid may shun all risk of mistake by cultivating only the curled variety. This last it may be remarked, makes the prettiest garnish." Neill.

Varieties.—There are:

1. The *common plain leaved*, which is the true species, is seldom cultivated.

2 The *curled-leaved*. This is the most esteemed variety. *A'pium* crispium, Mill. dict. no. 2. *P. sativum* ς crispum, D. C. prod. 4. p. 102.

3 The *broken-leaved or large-rooted* Humburgh, which is cultivated for its carrot-shaped roots. *A'pium* latifolium, Mill. dict.
no. 5. but not of Poir. P. sativum γ latifolium, D. C. prod. 4. p. 102.

Use.—The leaves of the two first varieties are used as pot-
herbs at all seasons of the year; also as a garnish. The third
kind is esteemed for its large white carrot-shaped roots, drawn
in winter like parsnips for the table; and occasionally to be used
in medicine, being a good remedy for the gravel.

Culture of the pot-herb kinds.—"One sowing in spring will
mostly furnish young leaves all the year, though to answer a
constant demand, many persons make successive sowings from
February to May. Some also sow early in autumn for young
parsley in winter and spring; but such a supply is better pro-
vided by cutting down established plants. Sow in a single drill
along the edge of any compartment, or occasionally in rows 9 or
12 inches asunder. Draw small drills, something less than an
inch deep, in which drop the seed moderately thick, and cover
a little above half an inch. The plants will come up in 3 or 4
weeks, and when 2 or 3 inches high, may be gathered as wanting
all the summer, winter, and following spring till May, when
they will go to seed. Have always a young crop sown timely
in the spring, to succeed the declining old plants. In gathering
pot-herb parsley, cut close and regular. In summer, when the
plants grow rank, yielding more leaves than can be used, cut
them in close to the bottom, and they will shoot up stocky in
a regular close growth. Observe also to do the same in autumn,
about the end of September, that the plants may form heads of
fresh young leaves before winter. On the approach of frosty
weather protect them with hauhin or reed-pannels, laid upon
branches of birch or other light supports."

Culture of Hamburgh parsley.—"To obtain large roots allot
a compartment where the soil is deep, and has been well dug.
Any common mould will suit, if dry and not too rank. Sow in
February, March, or early in April, in one or more beds; either
in drills 9 inches asunder, or broad-cast, and rake it. The
plants should be thinned to 9 inches distance, to give room for
proper growth in the roots, for use in August, September, Oc-
tober, and thence till the following spring. On the approach of
frost take up some roots, and preserve them in sand. A sowing
may be made in the third week in June, when young roots are
wanted in winter."

To save seed.—"Permit some old plants to run to stalks in
May; they will produce plenty of seed, ripening in July or Au-
gust." Abercornbe.

Cultivated or Common Parsley. Fl. June, July. C1t. 1548.
Pl. 2 feet.
2 P. peteRiNus (Lag. am. nat. 2. p. 100. Koch, umb. 128.)
stem erect, stiff, rather angular; petioles sheathing, scarious;
leaves shining; leaflets on long petioles, cuneate, deeply serr-
ated; leaves of both the involucrum and involucell linear. 8. H.
Native of Spain? Portugal? and on the mountains of Peru
according to Henk. herb. A'mmi petroselinoide, Presl, miss.
Apium petroselinoide, Poir. dict. 4. p. 369. but not of Mill.
Bupleurum petroselinoide, Spreng. umb. prod. p. 39. and per-
Foreign Parsley. Fl. June, July. Cit. 1633. Pl. 2 feet.
3 P. seliNoide (D. C. prod. 4. p. 102.) stem striated; radic-
al leaves tripinnate; cauline ones bipinnate; leaflets pinna-
tifid; lobes linear-lanceolate, acute, entire, or tripartite; umbels
dropping a little; involucrum almost absent. 2. H. Native
This plant differs from Gnidiun apioides, to which it is joined
by Sprengel, in the segments of the leaves being much larger,
in the petals being cream colored, not white, and in being
entire, not obcordate.

Selinum-like Parsley. Pl. 2 feet.
4 P. prostrATum (D. C. prod. 4. p. 102.) stem procumbent,
flexuous; leaves pinnate; leaflets petiolate, pinnatifid; lobes
5-7-lanceolate; ultimate ones trifid at the apex; umbels
nearly sessile, opposite the leaves; involucrum usually of one leaf.
1. F. Native of Van Diemen's Land. Apium prostratum,
Labill. nov. holl. 1. p. 76. t. 103. Vent. malm. t. 81. Schultes,

Prostrate Parsley. Pl. prostrate.
5 P. sequeTum (Koch, umb. p. 128.) stem erect, twiggy,
nealy naked; leaves pinnate; leaflets nearly sessile, roundish-
ovate, pinnatifidly cut, mucronately toothed; upper lobes linear;
involucrum 2-3-leaved; rays of umbel very unequal. O. H.
Native of Britain, France, Caucasus, and Switzerland, in corn-
fields, vineyards, and gardens. In Britain in a chalky rather
moist soil, but not very common; as about Mapledurham,
Hants; at Binham, Norfolk; near Kelmash, Northamptonshire;
at Walthamstow, Essex; and in the island of Tiree, Scotland.
Sisum sigeTum, Lin. spec. 362. Jacq. hort. vind. t. 134. Smith,
engl. bot. 228. Sium segetum, Lam. dict. 1. p. 406.—Mor.
hist. 3. p. 283. sect. 9. t. 5. f. 6. Flowers and fruit agree
with the rest of the genus Petroselium, but the habit is that of
Pimpinella. Flowers all fertile, white or even reddish. Teeth
of calyx rather conspicuous. Perhaps Sisum arvensis, Broth.
fl. his. 1. p. 424, and Schultes, syst. 6. p. 418. is not distinct
from this. The whole account of this herb by that accurate
observer Goodyer, with the origin of honewort, from its curing
a swelling in the cheek, called a hone, &c. is a model of precise
information.

Cult. The species will grow in any soil, and they are only
to be propagated by seed.

XXXIX. WYDHERIA (in honour of H. Wydler, who has
mem. v. p. 36. t. 7. prod. 4. p. 103.

Lin. syst. Pétuníáda, Digíínia. Margin of calyx obsolete
(f. 60. a.). Petals ovate-lanceolate, entire, acuminate (f. 60.
c.); acumen incurved. Fruit ovate, rather didymous, crowned
by the short stylopodium, and short reflexed styles (f. 60. b.);
mericarps somewhat semi-terete, and rather contracted at the
margins; furnished with 5 filiform thickish obtuse ribs at equal
distances; having the furrows between these ribs furnished with
one vitta each, but the commissure is narrow, and furnished with
2 vittae; all the vittae are very narrow. Carphophore bífis.—
A smooth West Indian herb, with a terete branched erect stem;
ternate leaves, with multifid leaflets, and cuneate lobes.
Involucrum none or only of one leaf, but the involucres are many
leaved. Flowers white, not sufficiently known. This genus,
 according to Koch, is allied to Petroselium, but differs both
from it and Ferulium, in the petals ending in long taper points.
It is also to be distinguished from Cnidiun, in the fruit being some-
what contracted at the sides, and in the ribs not being winged;
from Séseli, in the calyx being toothless, and from both these
last genera in the petals being entire.

1 W. Portorice'nsis (D.C. 1. c.) O. F. Native of Porto Rico,
on the west coast, where it is cul-
tivated along with Musa para
diviusa and Lepidium Virginicum. Plant a foot high and more.
Leaves rather stiff. Umbels numerous, 12-14-rayed. (fig. 60.)

Porto-Rico Wydleria. Pl. 1 foot.

Cult. A plant of easy culture, and only to be propagated by seeds.


LIN. SYST. Pentândria, Digynia. Margin of calyx obsolete. Flowers usually dioecious from abortion, rarely monoecious. Petals of the male flowers lanceolate, ending in an involucate segment; those of the female or hermphrodite flowers ovate, and ending in a short inflexed point each. Fruit ovate, compressed from the sides; mericarps furnished with 5 filiform, rather prominent equal ribs; lateral ones marginal; having the furrows between the ribs either without vitta, or with one in each furrow; carphophore flat, bipartite from the base. Seed gibbously convex, flatish in front.—Much branched biennial herbs. Stems angular. Leaves bipinnate; leaflets latrorse; lobes linear, pale or glaucous. Umbels numerous, of many rays, without any involucre, either disposed in a thyrse or panicale. Umbelles usually naked, seldom furnished with an involucre, sometimes prolific or somewhat racemose. Flowers white, dioecious or polygamous.


of many parts of Europe, in ditches and rivulets; plentiful in some parts of Britain. Sium nodiflorum, Lin. spec. 361. Woody. med. bot. 3. t. 182. Smith, engl. bot. t. 639. but not of the Flora Danica. Sison nodiflorum, Brot. fl. lus. 1. p. 423. Séseli nodiflorum, Scop. caryn. 2. p. 253. Flowers white. There is a dwarf variety of this mentioned in D. C. fl. fr. 4. p. 390, which is hardly a finger in height; and a large variety, which grows even 1 1/2 foot high. This plant was formerly admitted into the London Pharmacopoeia, in the character of an antiscorbutic, or rather as a corrector of acid humours, especially when manifested by cutaneous eruptions, and tumors in the lymphatic system. The best proofs of its efficacy are from Dr. Withering. A young lady was cured of a most obstinate cutaneous eruption by taking three large tea-spoonfuls of the juice twice a day; and he has repeatedly given to adults 3 or 4 ounces every morning, in similar complaints, with the greatest success. It is not nauseous, and children take it readily if mixed with milk. In the dose he has given it, it neither affects the head, the stomach, nor the bowels. This plant, therefore, if it should be eaten for water-cresses, does not seem to be very dangerous, or to require all that caution which Miller prescribes, to distinguish it from water-cresses.


6 H. rēpens (Koch, l. c.) stem prostrate, rooting; leaves pinnate; leaflets roundish, deeply toothed; umbels on long peduncles, opposite to the leaves; involucrum of 2-4 ovate-lanceolate permanent leaves. 4. W. H. Native of France, Denmark, and Germany. In Britain in boggy meadows, or on watery commons; on Bullington Green and Cowley Bottom, near Oxford; on Coldham Common, Cambridgeshire; on Goldington Green and Stevington bogs; at Fisher Row and on Guilford Links, near Edinburgh; and in ditches near Forfar. Sium rēpens, Lin. fil. suppl. 181. Fl. dan. 1514. Jacq. auct. 3. t. 260. Smith, engl. bot. t. 1431. Peduncles of umbels equal to the naked part of the petiole, which are in H. nodiflorum much shorter. Flowers white.


4 H. inunīdum (Koch, l. c.) stems creeping; leaves pinnate; leaflets of the submerged leaves capillaciouly multifid; those of the emerged ones cuneiform and deeply trifid; umbels opposite the leaves; peduncles bearing 2 rays or umbels, without an involucrum; umbellules 4-flowered. 4. W. H. Native of Europe, in marshes, bogs, ditches, pools, and wet ground over-flowed in winter; plentiful in some parts of Britain. Sium inunīdum, Wigger’s, Holst. p. 24. Hydrocotyle inunīdum, Smith, fl. brit. 1. p. 290. Engl. bot. t. 227. Fl. dan. t. 89. Siron inunīdum, Wildl. Mēum inunīdum, Sprech. umb. spec. 115.—Plink. alm. t. 61. f. 3. Flowers white.


6 H. Calīfōrinicum (Hook. et Arn. in Beech. bot. 4. p. 143.) plant procumbent? leaves pinnate, with 8-11 ovate, acute, deeply serrated leaflets; lower leaflets pinnatifid or pinnate, with few leaflets; umbels lateral and terminal; involucrum of many leaflets; styles elongated. 4. B. H. Native of North California, and on the low moist soils of the Columbia. The plant has a good deal the habit of H. rēpens. Douglas says the stems are 2-3 feet high, from which expression it may be inferred that the plant is not procumbent. Californian Helosciadium. Pl. 2 to 3 feet.

Sect. II. Cyclospērēnum (from κυκλος, kyclos, a circle, and σπέρα, sperma, a seed). Lag. am. nat. 2. p. 101. D. C. prod. 4. p. 105. Both the involucrum and involucres are wanting. Fruit quite glabrous.


8 H. lacinīatūm (D. C. mem. soc. generv. vol. 4.) plant glabrous, erect; leaves many times ternately divided: leaflets cut, oblong-linear: cauleine leaves all petiolate; umbels sessile, opposite the leaves, 3-rayed, one-half shorter than the petioles. 4. H. Native of Peru and of Chili; in stony pastures. Berto, herb. no. 101. Poepp. no. 93. p. 281. Very like H. leptophyllum, but differs in the leaflets being broader, and in the petioles of the cauleine leaves being much longer. Sison lacinīatūm, Lher. herb. in herb. Domb.

Jagged-leaved Helosciadium. Pl. 1 foot.

9 H. ranunculīfōrum (D. C. prod. 4. p. 105.) plant glabrous, erect, dichotomous; lower leaves bipinnate: upper pinnate and ternate, opposite; leaflets cut at the base, cut into acuminate lobes; umbels rising from the forks of the branches, on short peduncles. 4. H. Native of Chili, on the Andes in Rio Saladillo, in the province of Cordova; and about Concepcion. H. laterifōrum, Hook. et Arn. Some of the petals are entire, and some of them somewhat emarginate, from the point being bent in so much. Calyx obsolete. Fruit coriaceous at the base when young, more compressed, and less ribbed than in the rest.
Crown-foot-leaved Helosciadium. Pl. 1 foot?

10 H. tenérum (D. C. prod. 4. p. 105.) plant glabrous, erect; leaves bipinnate; leaflets tripartite: lobes obovate, obtuse, small; umbels rising from the axils, pedunculate, 4-5-rayed, without involucrum.—Native of Nipaun, on the high mountain of Shepole. Sison? ténér, Wall. mss. Herb 6-8 inches high. Sheath of petioles dilated and membranous. Fruit small, ovate, glabrous in the immature specimen. Styles very short.

Tender Helosciadium. Pl. 3 foot.

11 H.? Ru’ta (D. C. prod. 4. p. 106.) stem multiple, diffuse; leaves binate: lower ones on long petioles: lobes ovate, confluent a great way, obtuse: upper leaves on short petioles, with oblong lobes; umbels opposite the leaves, sessile, 3-5-rayed; rays elongated.—Native of the Cape of Good Hope. Sium forté Afrikanum foliis trifidis se lætæ hortensis Oldeni. herb. Sison trifidum, Burn. herb. Sison Rūta, Burnfl. cap. p. 7. A rather doubtful species, but from the immature fruit it appears to belong to this genus.

Rue-leaved Helosciadium. Pl. diffuse.

12 H. Heyne'num (D. C. prod. 4. p. 106.) stem nearly simple, erect; leaves on long petioles, ternate; leaflets petiolate, lanceolate, acuminate, deeply toothed; umbels on long peduncles, opposite, with 5-6 elongated rays; and the umbellules 5-8-flowered. O. H. Native of the East Indies, but in what place is unknown. Pipinnélá Heyne'num, Wall. mss. Mature fruit not seen. Allied to the following section, but differs in the fruit being glabrous while young.

Heyne’s Helosciadium. Pl. 1 foot.

SECTION III. TRACHISCÁDIUM (FROM τραχύς, trachys, rough, and σκιάδιον, skiadion, an umbel; in reference to the rough fruit of the species). D. C. prod. 4. p. 106. Both involucra and involucules are wanting. Fruit rough from short stiff hairs.

13 H. trifolíatum (D. C. prod. 4. p. 106.) stem glabrous, branched, erect: lower leaves 3-5-parted, the rest ternate: leaflets nearly sessile, ovate-lanceolate, smooth above, but scabrous from pili along the nerves beneath, deeply toothed: teeth mucronate; fruit ovate, scabrous from rigid pili.—Native of Nipaun, on the higher mountains about Gosangtham. Pipinnélá trifolíátum, Wall. mss. Umbels terminal, and opposite the leaves, 6-8-rayed. Styles very short. Fruit rather dillymous.

Trifoliate Helosciadium. Pl.

14 H. pubescéns (D. C. prod. 4. p. 106.) stem erect, multiple, pubescent, as well as the petioles, rays of umbel, and under side of leaves: lower leaves ternate: leaflets ovate, toothed, stalked: upper leaves on long petioles, ovate-cordate, toothed, rarely cut; fruit scabrous.—Native of Kamaon, in the East Indies. Pipinnélá pubescéns, Wall. mss. Very like the preceding, but differs in the pubescence and structure of the leaves. The immature fruit has only been seen.

Pubescent Helosciadium. Pl.

Cult. Those species belonging to the first section of the genus being aquatic perennial plants, should be grown in ponds of water; the rest being annual, the seeds of them should be sown in any warm situation.

XLII. DISCOLEURA (from δίσκος, diskos, a disk, and πελευσ, pleura, a rib; the 2 lateral nerves of the fruit form a disk on both sides of the fruit). D. C. coll. mem. 5. p. 38. t. 8. and 9. prod. 4. p. 106.—A’mmi species of Michx. Ell. &c.

LIN. Syst. Pentándria, Diogyia. Calyceal teeth 5, subulate, permanent (f. 61. c.). Petals ovate, entire, each furnished with a replicate point (f. 61. f.). Fruit ovate (f. 61. c.), rather dillymous; mericarps with 5 ribs; the 3 dorsal ones filiform, exserted, and acuash: the 2 lateral ones rather corneous, with the thick accessory margin, forming a broad disk on both sides of the fruit: having the furrows between the ribs furnished with one vitta each; carpophore bifid. Seed nearly terete.—Smooth North American herbs. Stems terete. Leaves compound; leaflets linear-setaceous, some trifid, and others entire. Leaves of involucel few, linear-setaceous. Flowers white. A genus of elegant plants.


Var. θ7 costáta (D. C. I. c. t. 8. β) plant large, erect; stem simple below; segments of the leaves somewhat verticillate; involucres of 10 or 12 leaves; fruit deeply furrowed. O. W. H. Native of Georgia, in marshes on the banks of the river Ogeechee. A’mmi costátum, Ell. sketch. 1. p. 350. Said to be nearly allied to the species, but differs according to Elliot, in the plant being of taller stature, 4-5 feet high, not 1 or 2 feet high, as in the species, and in the time of flowering, which is in autumn, and not in the spring, and in the leaves of the involucel being equal in length to the umbellules.

Capillary-leaved Discopleura. Pl. 1 to 2 feet.

2 D. Nutta'lı (D. C. I. c. t. 9.) plant erect; umbels 20-rayed; leaves of involucel 5-6, and for the most part undivided; involucels of 5 leaves, about equal in length to the umbellules. O. H. Native of North America, at the Red river. Cíclica capilláceas, Nutt. in litt. 1825. Fibres of roots in fascicles. Stem simple at the base, 1-2 feet high. Involucel deflexed.

Nuttal’s Discopleura. Pl. 1 to 2 feet.

Cult. The seeds only require to be sown early in spring in the open border.


LIN. Syst. Pentándria, Diggia. Margin of calyx obsolete. Petals elliptic, entire. Styles permanent, short. Fruit compressed from the sides, ovate; mericarps with 5 hardly prominent ribs: having one vitta in each furrow between the ribs. Seed convex on the outside, and flattish on the inside; carpophore bifid at the apex.—Glabrous, slender, smooth, erect North American annual herbs. Stems terete. Leaves multifid; leaflets linear. Umbels pedunculate, opposite the leaves, and terminal, with few rays, destitute of involucro: rays of umbellules few and unequal; involucelles short, few-leaved. Flowers small, white.

§ 1. Fruit neither scabrous nor echinated.

1 L. ine'rmis (Nutt. in litt. ex D. C. prod. 4. p. 107.) fruit o 0 2

Unarmed-fruited Leptocaulis. Pl. ½ foot.

§ 2. Fruit muricated or echi-nated.

2 L. diffusus (Nutt. in litt. ex D. C. l. c.) fruit muricated from rather adpressed bristles; branches and rays of umbel diffurcate; umbels and umbellules 3-rayed; pedicels of umbellule about equal in length to the rays of the umbel. O. H. Native of North America, at the Red river. Stem erect, slender, branched at the apex. Lobes of leaves or leaflets capillary. Involute of 1-2 leaves. Pedicels half an inch long. Flowers diffuse.

Diffuse Leptocaulis. Pl. ½ foot.


Divericate Leptocaulis. Pl. 1 foot.

4 L. pætns (Nutt. in litt. ex D. C. prod. 4. p. 107.) fruit muricated from tubercles; branches divaricate; rays of umbels and umbellules 4-5, rather contracted. O. H. Native of North America, at the red river. This is the largest species of the genus, being a foot high or more. Lobes of leaves or leaflets capillaceous. Flowers white.

Spreading Leptocaulis. Pl. 1 foot.

5 L. echinatus (Nutt. in litt. ex D. C. prod. 4. p. 107.) fruit echinated by spreading bristles; branches at length diverigate; umbels and umbellules 5-rayed, rather diverging. O. H. Native of North America, at the red river.

Echinated Leptocaulis. Pl. ¾ foot.

Cult. The seeds only require to be sown in spring.

XLIV. PYTCHOTIS (from πυγός, pytche, a plait, and ource, ource, our, otos, otan, an ear; the petals have a plait in the middle, emitting a little ear or segment). Koch, umb. 124. D. C. coll. mem. 5. p. 39. prod. 4. p. 107.—Bunium, Lag. am. nat. 2. p. 104. —Sæsii species of authors—Amnozois, Adans. fam. 2. p. 96.

LIN. SYST. Pentântëria, Digynia. Margin of calyx 5-toothed. Petals obovate, bifidly emarginate, having a transverse plait in the middle, which emits a little segment. Fruit compressed from the sides, ovate or oblong; mericarps with 5 filiform equal ribs; lateral ribs margination, having the furrows between the ribs furnished with one vitta each; carphophore bipartite. Seed terete or gibbously convex, flat in front.—Annual or biennial herbs. Cauline leaves multipli-capillaceous. Umbels compound, having the universal involucral variable, and the partial ones of many leaves. Flowers white. This is a very distinct genus from the form of the petals, having the segment not at the apex, but rising from the transverse plait.


Sect. II. Trachyspermum (from τραχύς, trachys, rough, and σπέρμα, sperma, a seed; in reference to the muricated fruit). Link, enum. 1. p. 267. Universal involucrum composed of a few linear entire or trifid leaves. Fruit muricated.


4 P. anethifolía (D. C. prod. 4. p. 108.) stem erect, branched; leaves all multifid, with linear hair-like segments; umbels of 20 rays; rays rather pubescent; leaves of involucellum, undivided. O. H. Native of Nipaul. Athamânta? anethifolia, Wall. mss. Pimpinellâ anethifolia, D. Don, prod. fl. nep. p. 184. Perhaps only an uncultivated variety of P. Ajowan, ex Wall. but the leaves are much more jagged and larger, and the rays of the umbel more numerous.
**UMBELLIFERÆ. XLIV. Pycnostis. XLV. Falcaria.**

FENNEL-LEAVED Pycnostis. Pl. 1 foot.

5 P. AO'WAN (D. C. mem. soc. gen. vol. 4.) stem erect, dichotomous; leaves few, cut into multifid linear segments; upper leaves pinnatifid; umbels of 7-9 rays; leaves of the involucre linear, undivided. O. H. Native of the East Indies, where it is called Jueane, Ajovan, Ajowal or Ajaswain. Ligisticum Ajowan, Roxb. hort. beng. p. 21. Athamántha Ajowan, Wall. *ms.* Ligisticum Ajáwain, Schultes, syst. 6. p. 556. Fleming, ind. med. in asiarch. 1. p. 170, journ. bot. 4. p. 200. Ajava-seed, Perciv. ess. 1. p. 453. Very like *P. Cúptica*, but differs in the stem being less leafy, in the umbels being of fewer rays, in the rays being puberulous, and in the fruit being more ribbed, but puberulously tubercular in the same way. The fruit of this plant is prescribed in India in diseases of horses and cows.

AJOVAN Pycnostis. Pl. 1 to 2 feet.

6 P. ROXBURGHIA'NA (D. C. prod. 4. p. 109.) stem erect, dichotomous; leaves ternate; leaflets deeply pinnatifid; lobes oblong-linear; umbels of 6-8 rays; leaves of involucre few, linear, undivided. O. H. Native of and cultivated in various parts of India, but particularly in Bengal, in the island of Singapore, and in the mountains of Sumatra, &c. ex Wall. An'ium involvulratum, Roxb. ex journ. bot. 1824. vol. 2. p. 158. Athamántha Roxbúrgíána, Wall. *ms.* and herb. Roxbúrgíá's Pycnostis. Pl. 1 to 2 feet.

7 P. ACHILLÉEFO'LIA (D. C. prod. 4. p. 109.) stem erect, a little branched; leaves bipinnate; leaflets pinnatifid; lobes linear-subulate, trifid, stellifer; umbels of 6-8 rays; leaves of involucre few, linear-lanceolate; fruit glabrous, rather muriated on the back along the ribs. O. H. Native of Nipaul and Kamaon. Athamántha achiilléefolíá, Wall. *ms.* A very distinct species, but the fruit on the specimen examined not being mature, the genus to which it belongs is still rather doubtful.

MILFOIL-LEAVED Pycnostis. Pl. 1 foot.

**SECT. III. HETEROPTYCHA (from *írrepoc, heteros, variable, and *πτγε, ptyche, a plait; in allusion to the middle nerve of the petals being lamellate above, and varying in this respect from the rest of the sections). D. C. prod. 4. p. 109. Universal involucre none. Teeth of calyx nearly obsolete. Petals rather emarginate, having the middle nerve lamellate above. Fruit echniated by bristles. Styles long, diverging a little.—Perhaps a proper genus. Mature fruit unknown, and therefore also the vittas.**

8 P. PUBE'RELA (D. C. prod. 4. p. 109.) stem erect; leaves and rays of umbel beset with short hairs in every part. O. H. Native of the Levant, about Bagdad. Rays of umbel 6-9 lines long; and those of the umbellules 2 lines long. Puberulus Pycnostis. Pl. 1 to 2 feet.

9 P. BARBÁ'TA (D. C. l. c.) stems erect, and are as well as the lobes of the leaves glabrous; but with the sheath of the petiole and limb of the leaf at the origin of the leaflets bearded with soft hairs. O. H. Native of the Levant, between Bagdad and Kermánchez. Rays of umbel 5-6 lines long, and those of the umbellules hardly 2 lines long. Perhaps only a variety of the preceding species.

Bearded Pycnostis. Pl. 1 foot.

10 P. VARGASIA'NA (D. C. l. c.) stem much branched, erect, glabrous as well as the leaves; leaves pinnate; leaflets euneated, cut at the apex; involucreum almost wanting; fruit clothed with short pubescence. O. H. Native of South America, about Caracas, where it was collected by Vargas. Perhaps this plant belongs to a different section of the genus.

Vargas's Pycnostis. Pl. 1 to 2 feet.

CULT. The species being natives of rather warm latitudes, their seeds will require to be sown in warm sheltered situations, or they may be reared in a hot-bed in spring, and the plants afterwards planted out in the open border in May.


LIN. SYST. Pentádria, Díginía. Margin of calyx 5-toothed; the tube in the sterile flowers wanting, but those in the fertile flowers are cylindrical. Petals obovate, curved, emarginate, with a broad recess, having the terminating segment reflexed. Styles divericate. Fruit oblong, compressed from the sides; mericarps furnished with 5, filiform, equal ribs; lateral ribs marginating; carpophore free, bifid; furrows between the ribs furnished with 1 filiform vitta each. Seed tetately convex, flatish in front.—Glabrous, perennial herbs. Leaves pinnate; leaflets broad-linear, deciduous, cartilaginous serrated. Umbels opposite the leaves and terminal, compound, of many rays; involucre of many leaves; involucres somewhat dimidiate, in consequence of the inner leaves being small. Flowers white, having hermaphrodite, fertile ones, and male sterile ones in the same umbelullle. This genus differs from *Sim* in the petals being curved, in the furrows of the fruit being furnished with 1 vitta each, and in the carpophore being free and bifid.


† Species hardly known.

3 F. JAVA'NICA (D. C. prod. 4. p. 110.) leaves pinnate or bipinnate; leaflets ovate-oblong, deeply serrated; umbels opposite the leaves; involucrum wanting; but the involucres are of many setaceous leaves. O. B. F. Native of Java, in marshes, where it is called Tespong by the natives. Sium Javánicum, Blum. bdjr. p. 881. The furrows of the fruit are furnished with 1 vitta each, and the commissure with 2, as in the following species.

Java Falcaria. Pl. 1 to 2 feet.

4 F. LACI'NIA'TA (D. C. prod. 4. p. 110.) leaves bipinnate; leaflets pinnatifid; umbels opposite the leaves; involucrum wanting; involucres of many setaceous leaves. O. B. F. Native of Java, in the province of Batavia, in marshes. Sium laci'nátm, Blum. l. c. Perhaps a species of Oenánthe.

Jagged-leaved Falcaria. Pl. 2 to 3 feet.

5 F. ? DIVERSIFOLIA (D. C. l. c.) superior leaves ternate;
leaflets petiolate, quite entire, some linear and others filiform.

2. H. Native of Nipaul. Sismon diversifolius, Wall. mss. Stem much branched. Herb glabrous. Lower leaves unknown. Fruit glabrous. Flowers all teraphroline. Mature fruit not seen, and therefore the vittes are not well known. Both the involucra and involucels are composed of a few linear, short, acute, undivided leaves.

Diverse-leaved Falcaria. Pl. 2 feet.

Cult. The two first species will grow in any soil, and under any circumstance. Those natives of Java will require to be grown in a stove.

XLVI. SISON (from sion, Celt. a running stream; some plants formerly contained in this genus were inhabitants of running streams). Lag. am. nat. 2. p. 103. Koch, umb. p. 123. D. C. prod. 4. p. 110. — Sison species, Lin. and all other authors.

Lin. syst. Pentandria, Digynia. Margin of calyx obsolete. Petals roundish, curved, deep, pinnate, with an inflexed point. Styles very short. Fruit compressed from the sides, ovate; mericarps with 5 filiform equal ribs; lateral ribs marginating: having one short, club-shaped vitta in each furrow between the ribs; carpophore bipartite. Seed gibbously convex, flattish in front. — Herbs paniculate branched. Leaves pinnate; lower leaflets a little lobed, toothed, or cut: upper ones linear, multifid. Both the involucra and involucels are composed of few leaves. Umbels of 4 unequal, elongated rays; and the umbellules of 4–5-short rays.


Doubtful species.

2 S. Siereria (D. C. prod. 4. p. 111.) plant glabrous, dwarf; leaves almost radical, ternal, or tripartite; segments approximate, cucateated at the base, very blunt at the apex, generally toothed, or somewhat cut; involucrum wanting. H. Native of Candia, on the tops of the Spacciose mountains. Sismon alpinus, Sieb. in Schultes, syst. 6. p. 414. Peucédanum Créticum, Sieb. herb. c. 1848. Spreng. nev. entl. 2. p. 148. From the immature fruit this appears to be a species of Cârum or Bînnum, the fruit being compressed from the margin, not from the back. Stem a finger in height. Umbels 4-5-rayed. Sieber's Stone-parsley. Pl. ½ foot.

3 S. Trinefve (Hamilt. ex D. Don, prod. fl. nep. p. 184.) stem erect, terete, dichotomous, striated, nearly naked; leaves all radical, pinnate; leaflets lanceolate, acute, quite entire, 3-nerved, glabrous; involucrum 5-leaved; leaves of involucels lanceolate, awned. H. Native of Nipaul, about Bassar. The fruit is undescribed, and the genus is therefore doubtful. Three-nerved-leaved Stone-parsley. Pl. 1 foot.

Cult. The seeds of the species only require to be sown in spring, in any common earth.


Lin. syst. Pentandria, Digynia. Margin of calyx obsolete. Petals elliptic, terminated by a short inflexed point. Stylodium conical. Styles erect, rather capitate at the apex, permanent, at length diverging. Fruit cylindrically prismatic, the transverse section nearly terete; mericarps somewhat compressed from the sides, and furnished with 5 filiform, exserted ribs: the 2 lateral ribs nearly marginating: having the furrows between the ribs flat, and furnished with 1 vitta each. Carpophore undivided. Seed nearly terete. — Smooth perennial herb. Leaves either radical, or from the lower part of the stem, pinnate; leaflets many-parted, decussate at the rachis: segments linear, acute. Umbels terminal, on long peduncles of many rays. Both the involucra and involucels are composed of many multifid leaves; the lobes linear and acute. Flowers white, all fertile.

1 S. crinita (Spreng. 1. c.). H. Native of the Altai, on the highest of the mountains, not far from the torrent of Tegerk. Sison crinitum, Pall. act. petrop. 1779. 12. p. 250. t. 7. Willd. spec. 1. p. 438.


Lin. syst. Pentandria, Digynia. Margin of calyx obsolete. Petals ovate, emarginately 2-lobed, with an inflexed point; lobes of petals unequal, irregular, those of the outer part of the umbel usually the largest. Fruit ovate-oblong, compressed from the sides; mericarps furnished with 5 equal, filiform ribs: lateral ribs marginating: having the furrows between the ribs furnished with one vitta each; carpophore free, bipartite. Seed teretely convex on the outside, and flattish in front. — Herbs with the habit of Daucus, having fusiform roots and pinnate or many-parted leaves. Umbels compound, of many rays. Both the involucra and involucels are of many leaves; the leaves of the involucel trifid or pinnatifid. Flowers white.

1 A. majus (Linn. spec. p. 349.) stem glabrous; leaves pinnate; leaflets with cartilaginous, sharply serrated margins; those of the inferior leaves obovate-oblong, and those of the upper ones multifid, linear-lanceolate. H. Native of south and middle Europe, Egypt, and the Levant; also of Newfoundland. Lam. ill. 193. Smith, fl. græc. t. 273. Schkuhr, handb. t. 61. A'pium A'mmi, Crantz, aust. 217. A'mmi Boebéri, Hoëq. diss. abo. 1810. and A. cicutæfölium, Willd. herb. ex Schultes, syst. 6. p. 591. do not differ in any particular from A. majus. The A. Boebéri, Hoffm. umb. XVIII. Horn. suppl. p. 52. is merely a larger variety of the present species.—Lob. icon. t. 721. f. 1. Mill. fig. 25.—Plencli. icon. 181. Blackw. t. 447. Flowers white; outer ones of the umbels large, like those of the rest of the species. Stem-leaves biternate.


2 A. glaucifölium (Linn. spec. p. 349. exclusive of the synomine of J. Baulp.) stem glabrous; leaves all bipinnate, jagged; segments narrow-linear, acute, and a little serrated. H. Native of France, at Lucon (Guett. etamp. 2. p. 433.), about Paris (Thuill. par. 137.) Andegavenny (Bast. ess. 105.), Rouen, Nanettes, and in Dauphiny (Vill. dauph. 2. p. 592.), Greece, (Smith, prod. pl. græc. 1. p. 185.), Spain at Aranjuez, Sicily, Liguria. This species differs from A. majus in the characters mentioned above, and in the more branched habit and glaucous
hue. There is a monstrous variety of this species, found about Rouen, which has the 2 carpels changed into petals, besides having also the usual number of petals.


3 A. INTERMEDEUM (D. C. prod. 4. p. 113.) plant glabrous; leaves all decomposed, many-parted, greenish; segments cut or toothed: lower ones cuspidate; upper ones linear-subulate, serrated, and ending in long tapering points. C. H. Native of the Pyrenees, and the kingdom of Naples. A. glaucifolium, Lapeyr. fl. p. 144. An intermediate plant between A. glaucifolium and A. Visnaga. It differs from the first in the leaves being greenish, not glaucous, and in being tripinnate; from the last in the lobes or leaflets of the upper leaves being much acuminate and serrated, and in the umbel spreading after flowering.

Intermediate Bishop's-weed. Pl. 1 to 2 feet.

4 A. Visnaga (Lam. dict. 1. p. 132.) stem terete, striated, glabrous; leaves decomposed; lobes or leaflets linear, cuspidate, divaricate; rays of umbel contracted after flowering, and indurated. C. H. Native of the south of Europe, in fields, north of Africa, Caucasus near Kuban, and in plains towards the Caspian Sea, and the Levant; also in Chili, at Mendoza and Hacienda de Vasquez, between Casa Blanca and Valparaiso. D. C. fl. p. 327. Daucus Visnaga, Lin. spec. 348. Jacq. hort. vindi. 3. t. 26. Visnaga daucoides, Gaertn. fruct. 1. p. 92. t. 21. Visnaga, Vill. daubh. 2. p. 594. Daucus gignonifolium, Lin. herb. ex Smith, Gohoria, Neck. elem. no. 287.—Cariad. aix. t. 36.—Lob. icon. 726. f. 1. Umbels often not very much above the leaves. Receptacle of the petals of the umbel much dilated. Rays crowded, very numerous, and at length they become so hard as to be used as tooth-picks, hence the name of the plant in France herbe aux cure-dents. In Spain, when they have served this purpose, they are chewed and thus are supposed to be of service in cleaning and clearing the guns; however this may be, the leaves have a pleasant aromatic taste in the mouth. Flowers with white petals and purple anthers.


5 A. DAUCOIDES (Salzm. pl. exsic. ann. 1825. ex D. C. prod. 4. p. 113.) stem terete, striated, mucrinated, having a few scattered bristles at the top of the petioles and branchlets; leaves bipinnate, rather ciliated; leaflets linear, cut, acute; leaves of involucel either simple or trifid; fruit covered all over with small, obuse tubercles. C. H. Native about Tangiers. Habit almost that of Daucus. Umbels nearly as in A. Visnaga, having the receptacle of the rays of the umbel thickened, and the rays very numerous. Fruit ribbed, as in the rest of the genus, but differs in being mucrinated.

Carrot-like Bishop's-weed. Pl. 2 feet.

6 A. CRINITUM (Guss. pl. rar. p. 128. t. 25. prod. p. 332.) stem terete, striated, glabrous, rather setose at the apex; leaves supra-decomposed; lobes or leaflets linear-setaceous, glabrous; petioles bristly; margins of the sheaths of the petioles scarious; fruit glabrous, somewhat tetragonal. C. H. Native of Calabria and Sicily, in fields. Leaves of involucrum multiform, reflexed. Flowers yellow in the dry state, as in Daucus alaeus.

Hairly Bishop's-weed. Pl. 2 to 4 feet.


8 A. PUMILUM (D. C. prod. 4. p. 113.) stem erect, angular, leafy, glabrous; leaves bipinnate; segments or leaflets pinnatifid; lobes linear; umbels opposite the leaves, pedunculate; leaves of involucels numerous, with scarious margins, and are rather scabrous, as well as the rays; some of the leaves of the involucra are trifid at the apex. C. H. Native of Portugal, in sandy places, at the river Tavora, and elsewhere in Beira. Sison pumilus, Broth. fl. luc. 1. p. 425. Fruit, according to Brotero, like that of parsley. Lower leaves like A. glaucifolium. Petals obovate, unequally obsolete. Herb a foot high, not dwarf. This is joined by Sprengel with Pychotis verticillata, but it is very distinct from that plant; but from the obsolete teeth of the calyx, and from the leaves of the involucrum being sometimes trifid, it comes nearest to the present genus, although it may hereafter form a proper genus, from the fruit being much more angular?

Dwarf Bishop's-weed. Pl. 1 to 1 ½ foot.

9 A. BROUSSETI (D. C. prod. 4. p. 113.) stem erect, terete, leafy, glabrous, branched; lower leaves unknown; upper ones tripartite; lobes cuneate-oblong, entire or dentate; leaves of involucrum linear or rarely trifid; young fruit rather scabrous from adpressed short hairs. C. H. Native of Africa, probably about Mogador. Habit nearly of A. majus and A. glaucifolium, but the involucra are very different.

Brossseton's Bishop's-weed. Pl. 1 to 2 feet.

10 A. CICUTA'RUM (Willd. rel. in Schultes syst. 6. p. 531.) stem angularly-furrowed, quite glabrous, furnished with few leaves; leaves ternately tri-pinnatifid; ultimate segments lanceolate, very acute, trifid; umbels with 6-8 rays; leaves of involucrums bipinnate: having the lobes or leaflets linear, and deeply toothed. C. ?. H. Native of South America, but in what place is unknown. Plant small. Schlecht in litt. Petioles 3 to 4 inches long. Rays of umbel stiff, angular, shorter than the involucrum. Leaves of involucel pinnatifid or trifid. Fruit ovate, compressed from the sides, glabrous; styles short, diverging. Ribs of mericarps rather prominent, having the furrows between the ribs furnished with 1 vitula each, and the comissure with 2 vitae.

Cicuta-like Bishop's-weed. Pl. 1 foot.

* Species not sufficiently known.

11 A. ? PYRENA'TUM (Lapeyr. abr. p. 145.) stem glabrous, flexuous; leaves somewhat bipinnate; lobes or leaflets entire; cut, ultimate ones decurrent; leaves of involucels setaceous or trifid, twice the length of the umbellules. C. H. Native of the Pyrenees, in fields about Madres and St. Beat. The petals are said by La Peyrouse to be rounded (arrondis) which indicates that the plant does not belong to this genus.

Pyrenean Bishop's-weed. Pl. 1 foot.

12 A. RUBRICA'VELE (Horn. hort. ln. 1. p. 272.) stem unknown; leaves somewhat verticillately tripinnate; leaflets capillary; leaves of involucel compound, longer than the umbellule. C. ?. H. Native of North America, near Baltimore. Perhaps the same as A. anethifolium.

Red-stemmed Bishop's-weed. Pl. 1 to 2 feet.

Cult. The species of A'mni are very showy while in flower; the seeds of them only require to be sown in the open ground early in spring.

XLIX. EGOPODIUM (from αἰξ, aix, a goat, and πονό, a dim. of πονος, pain; a foot; probably from the shape of the leaves.) Lin. gen. no. 368. Hoffin. umb. gen. p. 82. t. 1. f. 6. Koch, umb. p. 122. D. C. prod. 4. p. 114.—Podagraria Riv. peut. t. 47.

LIN. SYST. PENTANDRIA DIGYNIA. Margin of calyx obsolete. Petals obovate emarginate, with an inflexed point. Stylopodium
distinct, conical, terminated by the long deflexed styles. Fruit compressed from the sides, ovate; mericarps with 5 filiform ribs; lateral ribs marginating; furrows between the ribs destitute of vitre. Carpophore setaceous, forked at the apex. Seeds teretely convex on the outside, and flattish on the inside. Branching hairs, with creeping roots. Leaves biternate or triternate; upper cauline ones ternate; leaves oblong, acuminate, serrated. Umbels composed of many rays. Both the involucra and involucelles are wanting. Flowers white: anthers when young purple.

1. **A. podagria** (Linn. spec. p. 379.) stem furrowed; leaves biternate or triternate; leaves oblong, acuminate, unequal at the base, lower ones binate. **L. H.** Native throughout the whole of Europe, even to Caucasus and Siberia, in hedges and orchards. Very common in some parts of Britain. Oed. fl. dan. t. 670. Smith engl. bot. t. 940. Schkuhr, handb. t. 79. Riv. t. 47. Tragoselinum anglica Lam. fl. fr. 3, p. 419. Pimpinella aniceps, Lam. dict. 1, p. 451. Ligusticum podagraria, Crantz. aust. p. 200. Séseli Áségopodium, Scop. carn. ed. 2, no. 359. Podagraria Áségopodium Miench, Meth. p. 90. Sisón Podagraria Spreng, umb. prod. p. 55.—Lob. icon. t. 700. **L.** The plant is called Herb Gerard, Gout-weed, Aleh-weed, or Aich-weed, and **Wild Masterwort,** and being a great creper, it cannot be admitted into gardens, for after it gets hold it is next to impossible to eradicate it again. Though it has the quality of most umbelliferous plants, of being aromatic, yet it is not used at all in medicine; nor has it any title to its name gout-weed, though the Germans formerly used it to assuage the pain both of the gout and piles. Linneus says it is eaten in Sweden, boiled for greens, when tender in the spring. The roots are sometimes sold for those of the true Masterwort, the *Imperatia Ostruthium.*

**Gout-weed.** Fl. May, July. Britain. Pl. 2 to 3 feet.

2. **A. alpestre** (Led. fl. Ross. alt. ill. t. 7. fl. alt. 1, p. 354.) stem smooth; lower leaves ternately pinnate; leaflets ovate, cut, lower and terminal ones somewhat tripartite; upper leaves ternate, having the leaflets pinnate at the base, but drawn out at the apex, and nearly entire. **L. H.** Native of Altaia, in shady places on the north sides of the mountains near Riddersch, about the fountains of the rivers Uba and Tscharych. Root creeping. Flowers white. 


**Cult.** The plants will grow under any circumstance.

L. **CARUM** (so named from Caria, in Asia Minor; originally found there) Koch, umb. p. 121. D. C. coll. mem. 5, p. 41. Prod. 4, p. 414. Cárum, Sison, and Búinum species of Lin. and Hoffm.—Cárum and Sion species of Spreng.

**Lin. syst.** Pentádria Digyía. Margin of calyx obsolete. Petals regular obovate, emarginate, with an inflexed point. Styles depressed; styles deflexed. Fruit contracted from the sides, ovate or oblong; mericarps furnished with 5 filiform, equal ribs; lateral ribs marginating; having the furrows between the ribs furnished with one vitta each, and the commissure, which is flat, with two vittae. Carpophore free, forked at the apex. Seed terete, convex on the back, and flattish in front. Herbs glabrous, usually perennial. Roots tuberous, edible. Leaves pinnate; segments or leaflets multifid. Both the involucra and involucelles are variable. Flowers white.

**Sect.** I. **Cárvi** (an alteration of the generic name). D. C. prod. 4, p. 115.—Cárum, Lin.—Cárüm, Adans. fam. 2, p. 98. **Involucrum wanting; involucelles wanting, or of few leaves.**

1. **C. Cárvi** (Lin. spec. 378.) root fusiform; leaves bipinnate; leaflets decussate, multifid; stems furrowed; involucra and involucelles wanting. **L. H.** Native throughout the whole of Europe, in meadows and pastures; and of Altvia, in dry grassy places at the river Tscharych. Frequent in Britain, but is only a naturalised plant. Fl. dan. 1091. Smith, engl. bot. t. 1503. Nees, off. pil. 14. t. 17. Mart. rust. t. 55. Hayn. arum. gew. 7, t. 19. Woodv. ned. bot. Jacq. aust. t. 393. A'pium Cárvi Crantz, aust. p. 218. **Séseli Cárvi, Scop. carn. no. 361. Búinum Cárvi, Bieb. fl. taur. 1, p. 211. suppl. p. 206. Lágæia cuminoides, Willem. phyt. l. p. 254. but not of Lin. Cárvi, Riv. pent. irr. with a figure. Flowers white. Leaflets of leaves in sixes, appearing rather verticillate. The caraway is called *Carvi* in France, Italy, and Scotland, and Kummel in Germany. The plant is cultivated chiefly for the seed, which is used in confectionary and in medicine. In spring the under leaves are sometimes put in soups; and in former times the fusiform roots were eaten as parsnips, to which Parkinson gives them the preference.

**Garden culture.**—The plant is raised from seed, of which a quarter of an ounce is sufficient for a seed-bed 4 feet by 6. Sow annually, in autumn, soon after the seed is ripe; the seedlings will rise quickly, and should be thinned to a foot distance each way. In default of sowing in autumn, sow in March or April, either in drills or broad-cast; but the plants so raised will not, in general, flower till the following year. When the seed is ripe, the plant is generally pulled up in gathering, especially in field culture.

**Field culture.**—The cultivation and management of the caraway is the same as that of *Coriander.* In all probability both plants would answer if sown like clover among a crop of corn, hoed and thinned when the crop was removed, and again in the following spring. The method of culture in Essex is, about the beginning of March to plough some old pasture land; if it has been pasture for a century the better; and the soil should be very strong clayey loam. Twelve pounds of caraway-seed are mixed with ten pounds of coriander, and twelve pounds of teasel-seed; this is sufficient for an acre, and is sown directly after the plough, harrowing the land well. When the plants appear of sufficient strength to bear the hoe, which will not be until about ten weeks after sowing, it must not be omitted; and in the course of the summer the crop will require three hoeings, besides one at Michaelmas. The coriander, being annual, will be fit to cut about the beginning of July. It is left in the field after cutting, and threshed on a cloth in the same manner as rape-seed. About April following the caraway and teasel will want a good hoeing, done deep and well, and another about the beginning of June. The caraway will be fit to cut the beginning of July, and must be threshed in the same manner as the coriander. This compound crop is mostly sown on lands so strong as to require being a little exhausted to make it fit for corn. Caraway and coriander are oftentimes sown without teasel; the latter being a troublesome and uncertain crop, and the produce of caraway much greater without it. The produce of caraway, on very rich old leys, in the hundreds or low lands of Essex, has often been twenty cwt. to the acre. There is always a demand for the seed in the London market. The uses of caraway-seed are the same as those of coriander, and its oil and other preparations are more used in medicine. Dr. Anderson says, both the roots and tops may be given to cattle in spring. The seeds have an aromatic smell, and warm pungent taste, and yield much essential oil. They are employed as stomachic and carminative, in flatulents colics. The oil is used in the same way as other volatile oils.

**Var.** 8, *pterocchlamium* (D. C. prod. 4, p. 115.) leaves of involucrum few and multifid. **O. H.** Native of Montbéliard, in humid meadows not unfrequent.


**Var.** 8, *elongatun* segments of the leaves linear, elongated.

**2. H.** Native of Canada. C. Cárvi, var. 8, *Hook,* fl. bor.
toothed. Petals ovate-lanceolate, quite entire, oblique or inflected at the apex. Stylopodium depressed, margined. Styles reflexed. Fruit ovate-oblong, compressed from the sides; mericarps solid, having 5 equal filiform ribs: the lateral ribs margining; with the furrows between the ribs furnished with 3-4 vitte each. Seed somewhat semi-terete, flatish in front; carpopore adnate, bifid at the apex.—An herb with a fusiform root, supra-decompound or bipinnate leaves: having the segments or leaflets divided into many setaceous lobes. Scapes radical. involucre and involucels of many leaves. Petals yellow. Composition of fruit furnished with 4-6 vitte. The fruit is nearly like that of Sium, and the petals of that of Helosciadium.


Cult. See Bünium for culture and propagation.


LIN. SYST. Pentàndria, Monogy̱nia. Margin of calyx obdolute. Petals ovobate, emarginate, with an inflexed point. Fruit contracted from the sides, linear-oblong; mericarps furnished with 5 equal filiform, obuse ribs; lateral ribs margining; having the furrows between the ribs furnished with 2-3 vitte each, and the commissure with 4 vitte; the vitte all superficial. Carpophore flatish. Seed terete and convex on the outside, and flatish in front. Herbs perennial. Roots usually tuberous and glbose. Stems terete and attenuated at the base in the tuberous rooted species. Leaves decomposed; segments or leaflets divided into many slender linear lobes; involucre various: involucels few-leaved. Flowers white, rarely yellow or green.

sec. I. Chry̱seum (from χρυς, chry̱soς, gold; in allusion to the yellow flowers of the species.) D. C. coll. mem. 5. p. 41. prod. 4. p. 116. Both the involucræ and involucels are many-leaved. Flowers yellow or greenish. Styles diverging. The vitte in the furrows of the fruit in the different species are variable in number. This section is intermediate between Cárüm and Bünium, but differs from both these genera in the flowers being yellow.

1 B. Peucedanoides (Bieb. fl. taur. 1 p. 211. suppl. 208.) root fusiform; stem straitly furrowed, branched; leaves bipinate; leaflets of the radical leaves decussated, with broader lobes; segments of the cauline leaves linear and divericate; leaves of involucræ and involucels and short and setaceous; rays of umbel very unequal.  2. H. Native of Caucasus, about Nartza, and on Mount Bechtou, among grass. Sium peucedanoides, Spreng. umb. spec. 41. no. 5. syst. 1 p. 906. Peucedanum carvifólium, Bieb. Petals pale yellow. The furrows of the fruit are only furnished with one vitta each, according to Besser; but in fruit of the plant sent from Fischer, the furrows are furnished with 2-3 vitte each, rarely solitary.


2 B. Viré̱scens (D. C. mem. soc. gen. vol. 4. prod. 4. p. 116.) root fusiform; stem straitly furrowed, branched; leaves bipinate; leaflets of all the leaves linear; leaves of involucræ and involucels short and setaceous; rays of umbel very unequal.  2. H. Native of Burgundy, on a mountain called Afrique, near Pp.
UMBELLIFERÆ. LII. BUNIUM.


Greenish-flowered Earth-nut. Pl. 1 to 2 feet.

3 B. luteum (Hoffm. umb. p. 108.) root nearly globose; stem terete, branched; leaves pinnate; leaflets decussate, pinnatifid: lobes linear, very fine; leaves of involucrum and involucels very short, with membranous margins; fruit linear-cylindrical. H. Native of Siberia, in deserts, at the river Don, near the colony of Sarepta. Bünium luteum, Bibb. suppl. p. 207. Sium luteum, Spreng. syst. 1. p. 906. There are 3 vittae in each furrow of the fruit, according to Koch. Petals yellow.

Yellow-flowered Earth-nut. Pl. 1 to 2 feet.

Sect. II. Carôdes (from Càrum, the caraway, and idea, form; plants with the habit of Càrum,) D. C. coll. mem. 5. p. 41. prod. 4. p. 116. Involucra usually of many leaves, rarely absent. Flowers white. Stylodermum depresse: styles diverging. This section is intermediate between the genera Càrum and Conopodium.

4. B. carvifólium (D. C. prod. 4. p. 116.) root fusiform, terete, elongated; leaves pinnate; leaflets divided into many linear acute lobes; stem flexuous, erect, furnished with a few leaves; leaves of involucrum and involucels linear acute. H. Native of Abruzzo, and on Mount Fiori among the Appenines; but not of Sicily, ex Guss. prod. 1. p. 339. Saxon flexuosum, Ten. prod. fl. neap. p. 67. Sium carvifólium, Bert. in herb. Moric. Saxon proflifer, Brochi and Jan. Petals of a greenish white colour when dried. The furrows of the fruit, when immature, are furnished each with 2 or 3 vittae.

Caraway-leaved Earth-nut. Pl. 1 to 2 feet.

5 B. glácœscens (D. C. prod. 4. p. 117.) bulb ovate-oblong; stem erect, straight, terete; branches alternate; leaves glaucous: radical ones bi-pinnate, with multifid leaflets, and linear short lobes; cauline leaves distant, small, multifid; leaves of involucrum as well as of involucels, 6-7 in number, linear-oblong, acute, white. H. Native of Persia, in grassy valleys among the mountains about Seikhdzhodi. Stem % foot high. Umbels 10-11-rayed. Flowers white.

Glácœscens Earth-nut. Pl. 1/3 foot.

6. B. paucifólium (D. C. prod. 4. p. 117.) bulb globose; stem erect, straight, terete; branches alternate; superior leaves tripartite, having the lobes linear and entire; upper leaves undivided, linear; involucel of 3-4-leaves, and the involucel of 5-6 linear white leaves. H. Native of Persia, in grassy valleys of the mountains about Seikhdzhodi. Herb 2 feet high. Lower leaves unknown. Flowers white. Umbels of 4-5 rays. Fruit unknown.

Fern-leaved Earth-nut. Pl. 2 feet.

7. B. aphyl•llum (Jan. herb. ex D. C. prod. 4. p. 117.) root nearly globose, thick; stem terete, erect, nearly simple: cauline leaves striated at the sheaths, reduced to a short limb: both the involucrum and involucels are composed of 4-5 acuminate leaves. H. Native of Sicily, on the Nebrodes. Herb 4 to 5 inches high.

Leafless Earth-nut. Pl. 1/4 foot.

8 B. alpinum (Walst. et Kt. pl. rar. lung. 2. p. 199. t. 182.) root nearly globose, thick; stem terete, flexuous, hardly longer than the radical leaves; segments of leaves linear-oblong, fleshy; involucra of 5 linear-subulate leaves. H. Native of Croatia, on chalky mountains; and of Persia, in the province of Aderbajan. Wallróthia tuberosa. Spreng. pug. 2. p. 52, and in Schultes, syst. 6. p. 556. Flowers white. There are 3 vittae in each furrow of the fruit.


9 B. ferulefo'lium (Desf. ann. mus. 11. p. 275. t. 50. cor. Tourn. 55. t. 43.) root nearly globose; stem terete, dichotomous; leaves all somewhat truncate: leaflets linear; leaves of involucel 1-5, of the involucel 4-5, very short; fruit narrow, cylindrical. H. Native of the islands of Cyprus, Candia, and Seio. Sium ferulefo'lium, Spreng. in Schultes, syst. 6. p. 539. B. ferulefo'lium, Smith. Tuber about the size of a filbert, rufous on the outside, and white on the inside. Flowers white. Fruit not sufficiently known. The involucrum is very variable in the number of leaves.


10 B. coryda'linum (D. C. prod. 4. p. 117.) root globose; stem flexuous; segments of leaves linear-oblong; involucrum almost wanting; involucels of few leaves. H. Native of Corsica, on the mountains. B. petrae'um, Lois. fl. gall. ed. 2. vol. 1. p. 195. Tuber hardly so large as a pea. Stem 4-5 inches high, sparingly branched. Umbels of 3-5 rays; and the umbellules of 8-10 flowers; involucels of 5-6 leaves. Fruit oblong; having the furrows furnished with 2-3 vittae each.

Corydal•lis-like Earth-nut. Pl. ¾ foot.

11 B. cre•ticum (D'Urv. enum. p. 31.) root turnip-formed; stem dichotomous, nearly naked; leaflets of radical leaves ovate and cut: of the cauline ones linear; involucrum none; involucels of few leaves. H. Native of the Island of Cos, among rocks. Bulbocastanunè Griticium, radice napiformi, Tourn. cor. 21. and therefore Sium napiforme, Spreng. and Bünium napiforme, Willd. rel. in Schultes, syst. 6. p. 539. Flowers white. Fruit unknown.

Cretan Earth-nut. Pl. 1 foot.

Sect. III. Conopódiun (from κόρος, κόνος, a cone, and τόκος, τόκος, pou, pada, a foot; in allusion to the stalk or foot of the style, called the stylodermium, being conical). D. C. coll. mem. 5. p. 41. prod. 4. p. 117.—Conopódiun, sect. 1. Koch, umb. p. 118. Involucrum wanting, or of few leaves. Stylodermium conical, exserted. Styles straight.—Perhaps a proper genus.

12 B. be•ducatum (D. C. fl. fr. 4. p. 525.) root globose; cauline leaves nearly sessile, with short sheaths and toothed or cut leaflets; involucels unilaterial, few-leaved. H. Native of the west and south of Europe, and Caucasus, in mountain meadows and grassy pastures and among bushes, especially on a gravelly soil; plentiful in Britain. Myrrhis capillifólia, Guss. prod. fl. sic. 1. p. 321. Myrrhis Bünium, Spreng. umb. spec. 1. p. 131. syst. 1. p. 903. exclusive of numerous synonymns. Bünium flexuosum, With. 291. Smith, fl. brit. 1301. angl. bot. 983. Bünium bulbocastanum, Huds. angl. 122. Curt. lond. fasc. 4. t. 24. Bünium majus, Gouan. illl. p. 10. This species varies much in height. Styles long, pale, short, and reddish. Fruit ovate and oblong. Involucrum wanting, or 1-3-leaved. Segments of the leaves linear and lanceolate, more or less toothed. Sprengel refers Bünium ammoids, Link. or Myrrhis ammoids, Spreng. in Schultes, syst. 6. p. 517. to the present plant; and probably Myrrhis tenerrima, Presl, del. prag. 131. is also referrible to it. Flowers white. There are probably numerous species confused under this name. The plant has several names in England, as earth-nut, pig-nut, ar-nut, kipper-nut, hank-
nut, jur-nut, or yer-nut, earth chestnut, and ground-nut; in Germany it is called erdnuss; in Holland aardnot; in Sweden jordnot; in France suron, terre noix; in Italy castagna di terra; in Spain castano di terra. Root nearly globular, black, or chestnut-coloured on the outside and white inside; aromatic, sweet, and mucilaginous, with some acrimony: they are frequently dug up and eaten by children. Swine are very fond of them, and will soon become fat with feeding on them. When boiled they are very pleasant and delicious, and are supposed to afford great nourishment. Thus prepared, they are said to be eaten in Holland and the Alps, and in some parts of England in soup or broth. Roasted they are even superior to chestnuts.


Naked-stemmed or Common Earth-nut. Fl. May, June. Britain. Pl. 1 to 2 feet.

18 B. pu'illum (Smith, fl. grac. 274. prod. 1. p. 187.) root globose; leaves bipinnate: cauline ones petiolate, pilose; sheaths short; segment of leaves cut and acute; involucrum wanting or 1-leaved; involucres of many leaves. 2. H. Native of Mount Parnassus. Fruit ovate-oblong. Flowers white.

Dwarf Earth-nut. Pl. \( \frac{1}{2} \) foot.

14 B. tenutifólium (Salzm. pl. exsic. ex D. C. prod. 4. p. 118.) root unknown: cauline leaves petiolate; sheaths elongated, glabrous; segments of leaves few, linear, very narrow, elongated, and quite entire; involucres of many leaves. 2. H. Native of Mauritania, about Tanger. Perhaps Buniwm ammodes, Link. is referrible to this plant. Flowers white.

Fine-leaved Earth-nut. Pl. 1 foot.


Quite-glabrous Earth-nut. Pl. 1 foot.


Stiff Earth-nut. Fl. Ju. Jul. Clt. 1787. Shrubs \( \frac{1}{2} \) foot. Cult. A light sandy soil suits all the species best; and they can only be increased by seeds.

LIII. CRYPTOTÉNIA (from κρυπτός, cryptos, hidden, and τένεια, tainia, vitta; the vitta of the mercarps are hidden by a pericarp, and are invisible, unless the mericarps are cut transversely). D. C. coll. mem. 5. p. 42. prod. 4. p. 118. —Conopódium, sect. 2. Koch, umb. 119. Cyrtóspérmum, Rafin. in liit. 1819.—Alacóspérmum, Neck. elem. no. 276. ?

LIX. syst. Pentandría, Digynia. Margin of calyx obsolete. Petals obovate, nearly entire, ending in a narrow inflexed point. Fruit contracted from the sides, linear-oblong, crowned by a short stylopodium and 2 short styles; mericarps with 5, equal, filiform, obtuse ribs: the 2 lateral ribs placed before the margin; vitæ in the furrows between the ribs numerous, covered by a somewhat corky pericarp, but closely adnate, and only visible when the carpels are cut transversely. Seed teretely convex, flatlath in front. Carpophore free, bifid at the apex.—Perennial, glabrous, erect herbs. Roots not bulbous. Leaves ternate; leaflets ovate, coarsely toothed: teeth mucronate. Umbels numerous, almost disposed in a panicle. Rays of umbels and umbellules few, very unequal. Involucrum wanting; involucres few-leaved. Flowers white.


Thomas's Cryptotétia. Pl. 1 foot.

Cult. The species of this genus will grow in any soil; and may either be increased by cuttings or by seed.


LIN. syst. Pentandría, Digynia. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point. Fruit ovate, contracted from the sides, crowned by the pulvinate stylopodium and reflexed styles, which are capitulate at the apex; mericarps with 5, equal, filiform ribs: lateral ribs margintating: having the furrowes between the ribs furnished with many vitae; carpophore free, bifid. Seed gibbosely convex, flattish in front.

—Herbs, for the most part natives of Europe. Roots simple. Radical leaves pinnate: leaflets roundish, toothed, rarely undivided; cauline leaves more finely dissected than the radical ones. Umbels and umbellules of many rays, without any involucrum. Flowers usually white, rarely reddish or yellow.


**UMBELLIFERÆ.**

**LIV. PIMPINELLA.**


2 P. magna (Lin. mant. 217.) radical leaves pinnate; leaflets serrated and somewhat cut, orate or oblong: the terminal one 3-lobed. 2. H. Native throughout the whole of Europe, Caucasus, and the Levant, in mountain meadows, pastures, and woods. In Britain it grows chiefly in woods and hedges, in a calcareous soil. Smith,engl.bot.t.408.Fl. dan.1155.Hayn.arz.gcw.7.t.21.Jacq.aust.4.t.396.P.majör.Mill.dict.no.1.Gouan.ill.t.21.P.saxifraga,Spreng.syn.213.Tragoselinum mágnum,Łam.fr.2.t.448.Tragoselinum mágnus,Moench.meth.99.—Barrel.icon.t.548.P.saxifraga, Ray.syn.213.Petiv.brit.t.26.f.5.Saxifraga mágnæ,Dod.pempt.315.f.1. This and the following species partake nearly of the same qualities. The root is very acid, burning the mouth like pepper. It affords a blue oil. Its acrimony has occasioned it to be used to cure tooth-ache, and to clear the skin from freckles. It is chewed to promote the secretion of saliva, and is used in gargles to dissolve viscid mucous in the throat. In Germany it is prescribed in the asthma and dropsy. Flowers either white or reddish.  

Var. β, rubens (D. C. prod. 4. p. 120.) flowers reddish. P. rubra, Hoppe. exsic.


Var. ε, rosea (Stev. in litt. ex D. C. prod. 4. p. 120.) leaflets acutely and deeply pinnatifid; flowers rose-coloured.  


Flowers white.


Var. β, nigra (D. C. prod. 4. p. 120.) plant pubescent; leaflets of lower leaves ovate, serrated, somewhat lobed, rather coriaceous at the base; the upper leaves bipinnate; root black.  

P. nigra, Wildl.spec.1.p.1471.—J. Bauh.hist.3.p.111.f.2.

Var. γ, hircina (D.C. l. e.) plant rather pubescent; leaflets of nearly all the leaves pinnatifid or jagged. P. hircina, Moench, hess.no.255.P. genevénos,Vill.dauph.2.p.604.

Var. δ, dissecta; leaflets all pinnatifid, with narrow segments.


Stem erect, branched, dichotomous; branches filiform, twiggy, almost leafless. Flowers yellow, with an aromatic odour.


5 P. aurea (D. C. prod. 4. p. 120.) lower leaves pinnate, glossy; leaflets cuneated, 2-3-lobed at the apex: teeth large, few, mucronate; cauliine leaves trifid and undivided and linear, few; petals ciliated, hardly emarginate. 2 H. Native of Persia, in sandy places at Khó, in the province of Arderbeijan. A very distinct species, with yellow flowers, differing from P. lutea in the plant being glabrous, in the form of the leaflets, and in the petals being ciliated. Fruit subglobose, dilymous, compressed, furnished with many vitre in the furrows. There is a variety with smaller bipinnate leaves, also a native of Persia.

**Golden-flowered Burnet-saxifrage.** Pl. 2 to 3 ft?

6 P. ramosissima (D. C. l. e.) plant glabrous; lower leaves bipinnate; leaflets ovate-rhomboid, rather trifid, acuminate, quite entire at the base, deeply toothed at the apex, some of them crossed in a decussate manner; stem much branched; the leaves under the branches reduced to short ligulate; umbels 5-rayed; fruit glabrous, ovate, not contracted at the commissure. 2 H. Native of Persia. Flowers unknown. Transverse section of fruit terete, as in the genus Scei, but without either involucrum or involucel, but with the habit of Pimpinella. Leaves like those of Pseúdánium céréria. Perhaps a proper genus.

**Much-branched Burnet-saxifrage.** Pl.

7 P. anisoides (Briog. act. acad. neap.1819.vol.1.p.1.t.1.) plant glabrous; radical leaves bipinnate; leaflets roundish-ovate, serrated; umbels numerous; styles erect; fruit glabrous. 2 H. Native of the kingdom of Naples. It differs from P. babonoides, ex Guss. prod.1.p.331., in the fruit being glabrous, in the styles not being divaricate, and in the stigmas not being globose.

**Anise-like Burnet-saxifrage.** Pl. 1 to 2 ft.


8 P. deprésssa (D. C. prod. 4. p. 120.) stem pubescent; radical leaves pinnate; leaflets cuneated, pinnatifid, smoothish, ciliated: lobes lanceolate, obtuse; cauliine leaves pinnatifid, 1 under each branch; fruit rather puberulous from small, adpressed bristles. 2 H. Native of Candia, on the Sphecioit mountains. Tragión depréssum, Sieb.eret.exsic.Spreng.inSchultes.syst.6.p.392.Herb1-2incheshigh.Rootterete.Flowerswhite.


9 P. nodosa (D'UrV. enum. or. p. 33.) plant glabrous; stem branched, dichotomous; leaves many-parted, with linear segments; umbels numerous; petals glabrous; fruit small, ovate, with a few adpressed hairs. 2 H. Native of the Island of Samos, among stones, frequent, and on the old walls of cities. In the place of the stem where the involucrum ought to be, there is a thick thornlike knot, probably caused by insects.

**Nodose Burnet-saxifrage.** Pl. 1 foot.

10 P. trágium (Vill. dauph. 2. p. 606.) stem caespitose; radical leaves pinnate, smoothish; leaflets cuneate-ovobate, deeply serrated, usually variously cut; cauliine leaves very few; petals pilose on the outside; fruit clothed with caescent tomentum. 2 H. Native of the south of France, Italy, Sicily,

*Var. β, glauca* (D. C. prod. 4. p. 121.) plant of a canescent glaucous hue; radical leaves pinnate; leaflets roundish-ovate, somewhat 3-lobed, toothed, pubescent on both surfaces, the 3 or 4 superior lobes linear; petals and fruit clothed with adpressed villi. 2 H. Native of Sicily, on the Nebrodos. Tragium glaucum, Presl, del. prod. p. 125. Flowers white. Allied to *P. Cúmbræ*, but the leaflets are all 3-lobed, and the terminal one deeply so.

*Var. γ, laiciáta* (D. C. 1. c.) leaflets of all the leaves dissected into narrow linear segments. 2 H. Native of Tauria. P. Tragium var. Bieb. suppl. p. 250. P. petraæ, Beaulac, ined. Perhaps a proper species. The whole plant is clothed with canescent pubescence.


11 P. Peregána (Lin. mant. p. 357.) plant pubescent; radical leaves pinnate; leaflets ovate-cordate, serrated; terminal one usually 3-lobed; cauline leaves narrow, wedge-formed, jagged; fruit hispid. 3 H. Native from the south of France to Sicily, Caucasus, and Tauria. Jacq. hort. vind. 2. t. 131. P. hispida, Lois. not. p. 48. Tragium peregirinum, Spreng. umb. spec. p. 185. syst. 1. p. 884. exclusive of the synonyme of Presl. Ledeæbura pinnipellíoides, Link, enum. 1. p. 286. Tragium Taíricum, Ledeæ.—Barr. ic. 1114.—Column. ephr. 1. t. 109. Flowers white. The herb varies in smoothness and hairiness; in the first state it is *P. peregirinum*, D. C. fl. fr. suppl. p. 502.; in the second it is *P. hispida*, Lois. ex. D. C. l.c. The first leaves are simple, the second ternate, but the succeeding ones are pinnate, also the lower stem ones; but the upper stem leaves are variously divided into lanceolate segments. The umbels are drooping before the expansion of the flowers. The seeds have no smell, and when first chewed have scarcely any taste, but in a short time are very acrimonious, and excite a great heat in the fauces.


14 P. Cúmbræ (Buch. ubers. can. p. 29, and beschreib. d. can. ins. p. 152.) the whole plant is hoary from short down; radical leaves pinnate; leaflets 5-7, ovate, deeply serrated, terminal one usually 3-lobed; stem nearly leafless, branched; petals villous. 2 H. Native of Teneriffe, on the highest mountains. Tragium incánsum, Chois. ined. Said to be allied to *P. villosa*, but differs in being more hoary, and in the leaves being simply pinnate, not doubly pinnate. Root woody, throwing out many stems at the neck.

*Cumbre* Burnet-saxifrage. Pl. 1 foot.

15 P. Pseudotrágium (D. C. prod. 4. p. 122.) plant glaucous and canescent; radical leaves pinnate; leaflets roundish-ovate, somewhat 3-lobed, deeply toothed, velvety-canescence on both surfaces: upper ones trifid; lower ones undivided, linear; petals rather villous on the outside; fruit very hairy. 2 H. Native of Persia, in dry exposed stony places about Seidkhdizi. This is an intermediate plant between *P. trágium* and *P. aromático*.

The fruit is larger than in either, and the hairs on the plant are soft and spreading, not as in *P. trágium*, adpressed. Petals rather villous on the outside, not as in *P. aromático* very hairy.

*False Trágium.* Pl. 2 feet.


18 P. diverstifóliá (D. C. prod. 4. p. 122.) leaves ternate or binate; leaflets petiolulate, cordate, coarsely toothed, membranous, glabrous above, but puberulous along the nerves beneath; involucrum wanting; involucres 3-leaved; rays of umbels and umbellules 13-20 in number, and are as well as the fruit pubescent. 2 H. Native of the East Indies, in Sirmore. Heracleum diversifólium, Wall. mss. Leaves as if they were pinnate, from the 2 lateral leaves being undivided, and the middle one ternate. Teeth of lower leaves rounded and mucronate; of the superior leaves acute. The immature fruit has only been seen.

*Diverse-leaved Burnet-saxifrage.* Pl. 1 to 2 feet.

19 P. Leschenaulth (D. C. l. c.) radical leaves petiolate, orbicular, cordate, toothed, rather coriaceous, many-nerved at the base, glabrous above, velvety from short down beneath; cauline leaves few, parted, almost reduced to the sheaths; stem a little branched, glabrous. 2 H. Native of the East Indies, on the Nellygerry Mountains, where it is called by the natives Tourasson. Petals hardly puberulous, when examined under a lens, but at length becoming glabrous. Plant 1-2 feet high. Rays of umbel 5, of the umbellules 12-15. Flowers white.

*Leschenaulth’s Burnet-saxifrage.* Pl. 1 to 2 feet.

20 P. *Java* (D. C. prod. 4. p. 122.) cauline leaves petiolate, cordate, acute, cartilaginosus serrated, many-nerved in the base, velvety beneath as well as the petioles, but pubescent above; sheaths ciliated; involucrum wanting, or of 1 linear leaf; fruit hairy. 2 H. Native of Java. Herb said to be
2 feet high. Stem terete, velvety at the apex. Umbels of many rays. Fruit ovate, hairy. Styles diverging.

Java Burnet-saxifrage. Pl. 2 feet.

Sect. III. Ani'sum (the herb anise; containing plants agreeing with it). Adans. fam. 2. p. 95. Gaertn. fruct. 1. p. 102.
—Bible species of Lag. Fruit puberulous. Annual plants.
21 P. anisum (Lin. spec. 399) stem glabrous; radical leaves cordate-roundish, lobed, deeply serrated; middle ones pinnatifid, with cuneate-lanceolate lobes; upper ones trifid and undivided, linear; fruit bearing a few scattered hairs. O. H. Native of the Island of Seio, Egypt, and cultivated in Europe. Nees, off. pltz. 12. t. 17. Hayn. arz. gew. 7. t. 22. Woody med. bot. t. 180. Anisum vulgare, Clus. hist. 2. p. 202. Gaertn. fruct. 1. t. 23. f. 1. Anisum officinale, Mench. meth. p. 100. Sison anisum, Spreng. in Schultes, syst. 6. p. 407. A'pium anisum, Trag.—Blackw. herb. t. 374.—Lob. icon. 731. Flowers of a yellowish white colour. Fruit pubescent when young. Styles short, straight. The anise is cultivated in Malta and Spain for its seeds, which are annually imported as medicinal, and for distillation and expression. In this country it is occasionally grown in the garden, to be used as a garnish, and for a seasoning like the fennel. For this last purpose, the seeds require to be sown in April, in a warm border, in a dry light soil, or raised in pots on heat, and removed to a warm site in May, where the plants will blossom and ripen their seeds in August, in favourable seasons. The plants should be thinned to 3 or 4 inches' distance.

22 P. cretica (Poir. suppl. 1. p. 684.) plant dwarf; radical leaves roundish, 3-lobed, toothed; superior leaves small, terminately multifid; segments rather filiform; fruit puberulous. O. H. Native of Candia, Italy, and the Morea. A'pium Créticieum minimum anis facie, Tourn. herb. P. tenuis, Sieb. pl. exsic. Stems filiform, 4-5 inches high. Umbels spreading; with capillary rays; umbellules small. Fruit shorter than the styles, not glabrous, but puberulous, as in P. anisum, of which it is probably only a small variety. Flowers whitish.

23 P. dichotoma (Lin. mant. 58.) plant glabrous, dichotomously branched, erect; leaves biemarginate or trinerved; leaflets linear; petals winged, membranous; peduncles opposite the leaves; fruit mucracted from short hairs. O. H. Native of Spain, on hills about Aranjuez. Habit of Trinia, but differs from that genus in the flowers not being dioecious. Petals all emarginate at the apex, from the point being incurved. Fruit nearly globose, striated. Styles reflexed. Flowers white.

Dichotomous Anise. Pl. 1 1/2 foot.

† Species not sufficiently known.

Hairy-fruited Burnet-saxifrage. Pl. 1 foot.
26 P. Alpìna (Host, fl. austr. 1. p. 399.) radical leaves pinnate, glabrous; leaflets of lower leaves ovate, cut: of the intermediate ones, pinnatifid, and of the upper ones linear-subulate, entire. Y. H. Native of the Alps of Styria and Austria, in stony places. The petals are said to be yellowish-white. Fruit striated, probably glabrous, or villous. This is perhaps only a variety of P. magna.

27 P. kuevèsris (Bory, ann. gen. ph. 3. 1820. p. 12.) radical leaves on long petioles, pinnate; leaflets deeply crenated, acute; stems rather dichotomous. Y. H. Native of Spain, among stones, on Sierra Nevada. Plant glaucous, stiff, slender. Perhaps only a variety of P. saxifraga.

Rock Burnet-saxifrage. Pl. 1 foot.

—Cape Burnet-saxifrage. Pl. 1 foot?
Cult. All the species are of easy culture.—A dry sandy soil suits them best; and they are only to be increased by seeds, which ripen in abundance. Those species marked perennal are little better than biennial in the gardens.


Lin. syst. Pentáндria, Digestia. Margin of calyx 5-toothed, now and then obsolete. Petals obovate, emarginate, with an inflexed point. Stylopodium pulvinate, depressed at the margin. Styles divergingly reflexed, rather capitate at the apex. Fruit compressed from the sides or contracted, and rather didymous, crowned by the stylopodium and styles; mericarps having 5 equal filiform bluntish ribs: with the furrows between the ribs, as also the commissure, furnished with many vittae; carpopetalous bitarinate; the stalks adnate to the mericarps. Seed nearly terete. Mostly aquatic herbs. Leaves pinnate; leaflets ovate-oblong, toothed or many parted. Umbels terminal, many parted; surrounded by many leafy involucra, which are very rarely composed of one leaf. Umbellulas many flowered, surrounded by many leafy involucres. Flowers white.

Sect. 1. Siśarum (altered from the Arabic name of the plant dagizer; this word signifies a carrot in Persian, and Siśarum has small bundles of roots resembling carrots). D. C. prod. 4. p. 124.—Sium, Koch, deutschl. fl. Lateral ribs of fruit marginating, having 3-4 superficial vittae in each furrow between the ribs. Seed terete, convex on the back, and flattish in front.
1 S. Siśarum (Lin. spec. p. 361.) root composed of fascicles of fusiform tubers; stem terete; leaves pinnate, but the uppermost ones are ternate; leaflets ovate-lanceolate, acute, serrated; involucra of 5 reflexed leaves; calycine teeth almost obsolete. Y. H. Native of China, Japan, Corea, Altaia, Mongol, and Cochin-china, but only cultivated in Europe. Schkuhr, handb. t. 69.—Lob. icon. t. 710. f. 1. Col. phyt. 89. with a figure.—Park. par. t. 507. f. 1. The commissure of the fruit, according to Koch, is furnished with 4 vittae. Stium brevifolium and S. Podolicum are probably hardly varieties of this species. Flowers white. The tubers of the root are about the size of the finger, joined together at the crown or head; they were formerly much esteemed in cookery. The Skirit is called Chervis in French, Zuckernrussel in German, and Sisaro in Italian; it is also cultivated in the north of Scotland, under the name of crummock. The tubers are boiled, and served up with butter,
and are declared by Worledge, in 1862, to be "the sweetest, whitest, and most pleasant of roots." This plant grows freely in lightish soil, moderately good. It is propagated both from seed and by offsets of established roots. The better method is to raise seedlings to have the root in perfection, young, and tender.

**By seeds.**—"Sow between the 21st of March and the 15th of April; a fortnight later, rather than earlier, for a full crop, as plants raised forward in spring are apt to start for seed in summer. Sow on an open compartment of light ground, in small drills 8 inches apart. When the plants are 1 or 2 inches high, thin them to 5 or 6 inches asunder. They will enlarge in growth to the end of autumn; but before the roots are full grown, in August, September, or October, some may be taken up for consumption, as wanted; those left to reach maturity will continue good for use throughout winter and in spring, till the stems run.

**By slips.**—"Having some plants of last year's raising, furnished with root offsets, slip them off; taking only the young outward slips, and not leaving any of the large older roots adhering to the detached offsets; which plant by dibble, in rows from 6 to 9 inches asunder. They will soon strike and enlarge, and divide into offsets which, as well as the main roots, are eatable, and come in for use in proper season.

**To save seed.**—"Leave some old plants in the spring: they will shoot in stalks, and ripen seed in autumn."

*Var. β, Ninsi*; stem bulbiferous; leaflets broader, rather cordate. Sium Ninsi, Burk. ind. t. 29. Thunb. jap. 118.


2 S. **sissaroides** (D. C. prod. 4. p. 124.) root unknown; stem furnished; leaves pinnate; leaflets ovate, rather cordate at the base, toothed: upper leaves ternate, having the leaflets oblong, acuminate, and serrated; involucrum of 4-5 reflexed leaves; calyces teeth almost wanting. **2.** H. Native of Persia, in the province of Aderbeidjan, about Badelan, in shady sandy places, where it was collected by Skowits. The root is said to be creeping, but according to the specimens examined, they appear to be fasciculate like those of the common skirret. The whole plant is like *S. Sisarum*, and especially variety *β*, but differs in the stem being furnished, in the leaves being broader, in the fruit being shorter, and in the fibres of the roots being cylindrical.

**Skirret-like Water-parsnip.** Pl. 1 to 2 feet.

3 S. **lancifolium** (Bieb. suppl. p. 290.) root creeping; leaves pinnate; leaflets lanceolate, equally and sharply serrated; involucrum of many leaves; calyces teeth very short. **2.** H. Native of Tauria and Caucasus, in marshes and humid places; and of Altaia, at the river Irtysh. S. latifolium, Bieb. fl. taur. 1. p. 225. exclusive of the synonyms. S. latifolium Ucrainum, Fisch. cat. hort. gor. 1812. Bérla lancifolium, Bess. enum. pl. volh. p. 44. Very nearly allied to *S. latifolium*. The commissure of the fruit, according to Koch, is furnished with 4-6 vittes.

*Var. β;* leaflets narrower, linear-lanceolate. **2.** H. Gmel. sib. 1. p. 201. no. 14. t. 47.


4 S. **latifolium** (Lin. spec. p. 361.) root creeping; stems angularly furnished; leaves pinnate; leaflets lanceolate, acuminate, unequal at the base, serrated, rarely pinnatifid; involucrum of many leaves; calyces teeth elongated. **2.** H. Native throughout the whole of Europe and North America, in ditches and marshes. In Britain in rivers, ditches, and fens. Jacq. fl. austri. p. 36. Smith, engl. bot. t. 204. Oed. fl. dan. t. 246. Hayn. arz. gew. 1. t. 35. good. Coriárium latifolium, Crantz. austr. p. 219. Drepanophyllum palüstræ, Hoffm. umb. 110. The leaflets of the submersed leaves are in the same plant often multifidly jagged. The commissure of the fruit, according to Koch, is furnished with 6 vitte. Stem with whorls of fibres under water. The plant is of an acid poisonous quality, particularly the roots.

**Broad-leaved Water-parsnip.** Fl. July, Aug. Britain. Pl. 3 to 6 feet.

5 S. **longifolium** (Presl. fl. chech. p. 65. but not of Pursh,) root unknown; stem striated; leaves pinnate; leaflets linear-lanceolate, elongated, unequally toothed, very acute; involucrum usually one-leaved. **2.** H. Native of Bohemia, in marshes and ditches.

**Long-leaved Water-parsnip.** Pl. 2 to 3 feet.

6 S. **lineare** (Michx. fl. bor. amer. 1. p. 167.) stem angularly furnished; leaves pinnate; with 4-5 pairs of linear-lanceolate leaflets, which are acutely and finely serrated; involucrum of a few linear leaves. **2.** H. Native of North America, from Canada to Carolinia; on the mountains and at the Saskatchewan, in marshes; watery places about Lake Huron; moist and overflowed grounds of the Columbia. Nutt. gen. amer. 1. p. 186. exclusive of the synonyme of Pursh ex Torrey, fl. un. st. 1. p. 211. The young submersed leaves are deeply multifid or tripinnate, with very narrow linear subulate segments.


7 S. **Douglasii** (D. C. prod. 4. p. 125.) stem terete; leaves pinnate; lower leaflets ternate, the rest petiolulate, ovate-oblong, coarsely serrated; umbels opposite the leaves, and terminal, pedunculate, without an involucrum, of many rays. **2.** H. Native of the north-west coast of America. Stems and petioles reddish. Lower leaves 1½ foot long. Flowers white. Calyx 5-toothed.

**Douglas's Water-parsnip.** Pl. 3 to 4 feet.

**Sect. II. Bérula** (probably from *βηρος*, a cloak or garment). Koch, deutschfl. fl. 2. p. 455. D. C. prod. 4. p. 125. Lateral ridges of the fruit placed a little before the margins of the mericarps. Transverse section of seed perfectly terete.


**Narrow-leaved Water-parsnip.** Fl. July, Aug. Britain. Pl. 2 to 3 feet.

9 S. **Thunberghi** (D. C. prod. 4. p. 125.) root fibrous, throwing out stolons from the neck; stem erect, striated; branches angular; leaves pinnate; leaflets ovate, acute, regularly and callously serrated; umbels pedunculate, opposite the leaves, and terminal; involucrum of 3-5 linear acute undivided leaves. **2.** B. H. Native of the Cape of Good Hope, in marshes near Seekhuwallei. Sium angustifolium. Thunb. prod. p. 51. Leaflets approximate and regularly disposed. Plant erect.

**Thunberg's Water-parsnip.** Pl. 2 to 3 feet.

† Species not sufficiently known, and are therefore doubtful whether they belong to the genus.
UMBELLIFERÆ. LV. Sium. LVI. Bupleurum.


Hispid Water-parsnip. Pl. ?

11 S. ? asperum (Thunb. prod. p. 51. fl. cap. 2. p. 210.) stem striated, glabrous, erect; leaves somewhat tripinate, glabrous; leaflets multifid, lanceolate; petioles and peduncles scabrous; umbels terminal; involucre of 6 leaves.—Native of the Cape of Good Hope. Spreng. umb. spec. 96. Fruit unknown.

Rough Water-parsnip. Pl. 1 to 2 feet.

12 S. villosum (Thunb. l. c.) stem erect; branches divaricate, striated; leaves tripinate; leaflets ovate, deeply serrated, and are, as well as the petioles, ciliated with villi; umbels terminal; leaves of involucre 6, ovate, with scarios margins.—Native of the Cape of Good Hope. Spreng. umb. spec. 97.

Villos Water-parsnip. Pl.

13 S. ? villosulum (Thunb. prod. p. 50. fl. cap. 2. p. 207.) stem erect, flexuous, terete; radical leaves simple, linear-filiform, elongated; umbels terminal; involucre of 8 leaves, which are about equal in length to the umbel.—Native of the Cape of Good Hope. Spreng. umb. spec. 99. exclusive of the synonyms. Schultes, syst. 6. p. 544. exclusive of the synonyms.

Thread-leaved Water-parsnip. Pl. 2 feet.

14 S. grandiflorum (Thunb. prod. p. 50. fl. cap. 2. p. 208.) stem erect, striated, branched a little; leaves glabrous, bipinnate; leaflets roundish, deeply toothed; umbels terminal; leaves of involucre 8, ovate, acuminate. 2. G. Native of the Cape of Good Hope. Spreng. umb. spec. 99. Fruit said to be ovobate, and striated.

Great-flowered Water-parsnip. Pl. 2 feet?

15 S. ? paticum (Thunb. l. c.) stem striated, glabrous; branches divaricate; leaves bipinnate, somewhat fascicate; leaflets linear, trifid; umbels terminal; involucre of 6 lanceolate leaves, with scarios margins.—Native of the Cape of Good Hope. Spreng. umb. spec. 99. Fruit unknown.

Spreading Water-parsnip. Pl. spreading.

16 S. paniculatum (Thunb. l. c.) stem terete, striated, glabrous; branches pinnate; leaves bipinnate; leaflets deeply pinnatifid, linear, channelled; umbels terminal; involucre of 6 lanceolate leaves, with scarios margins.—Native of the Cape of Good Hope. Spreng. umb. spec. 98. Fruit unknown.

Panicled Water-parsnip. Pl.?

17 S. Japo nilicum (Thunb. fl. jap. p. 118.) stem erect, flexuous, branched above; leaves pinnate, glabrous; leaflets unequal, oblong-obovate, deeply toothed at the apex: upper ones lanceolate, quite entire; umbels terminal.—Native of Japan. Stem terete. Superior leaves ternate. Umbels of many rays.

Japan Water-parsnip. Pl. 1 to 2 feet?

18 S. ? decumbens (Thunb. fl. jap. p. 118.) stems decumbent; leaves bipinnate, on long petioles, glabrous; leaflets trifid; umbels terminal, nearly simple. 2. H. Native of Japan. Perhaps S. Graecum, Lour. coeh. p. 179. is referrible to this species.

Decumbent Water-parsnip. Pl. decumbent.

19 S. ? oppositifolium (Kit. in Schultes, fl. austr. 2. p. 495. syst. 6. p. 506.) leaves numerous, opposite, doubly pinnate; leaflets pinnate, acuminate, quite entire.—Native of Hungary, on the mountains.

Opposite-leaved Water-parsnip. Pl. ?

Cult. All the species of this genus do best in a moist soil, and most of them altogether in water. They are increased by separating the roots and stolons.


Lin. syst. Pentandria, Digynia. Margin of calyx obsolete. Petals roundish, entire, strictly involute, with a broad retuse point. Fruit compressed from the sides or somewhat didymous, crowned by the depressed stylopodium; mericarps with 5 filiform acute winged ribs, or with obsolete ones; lateral ribs margined; furrows between the ribs either furnished with vitre or without them, smooth or granular. Seed teretely convex, flatish in front.—Quite glabrous herbs or shrubs. Leaves rarely cut, but mostly quite entire in consequence of the limbs, which are supposed to be absent, and the petioles being dilated, and changed into quite entire phyllodia, as in many species of Odogia. Umbels compound. Involucres variable. Flowers yellow. A very natural genus, with a distinct habit from all other umbelliferous genera, but the fruit is variable in character.

Annual plants.

1 B. papillosum (D. C. prod. 4. p. 127.) stem erect, branched; leaves linear, acute, stiffish, umbels terminal, of 3-4 rays; involucre of 3-4 unequal leaves; umbellules 10-flowered; involucres of 5 reflexed leaves, longer than the fruit; fruit coarsely papillose all over. 0. H. Native of the Levant. Allied to B. glaucum and B. tenissimum, but the branches of the umbel are perfect; and the fruit is beset with large, obuscute, white papille.

Papillose-fruited Hare's-ear. Pl. ½ to 1 foot.


3 B. procumbens (Desf. fl. atl. 1. p. 230. t. 56.) stems procumbent, panicularly branched; lower leaves narrow-lanceolate, the rest linear-subulate; involucre of 2 leaves; involucres of 5, nearly ovate, acute, very short leaves; fruit short and maricated by tubercles. 0. H. Native about Tunis. Odontites procumbens, Spreng. in Schultes, syst. 6. p. 382. Habit
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**UMBELLIFERÆ.**

**LVI. Bupleurum.**

juncæm var. Lam. Spreng. B. filicaule, Brot. ex Steud. Isophyllum Gerardi, Hoffm. Buprestis Gerardi, Spreng.—Ger. Gallopov. t. 6. There are varieties of this plant with either erect or spreading branches, and with the involucres either shorter or longer than the flowers.

Gerard's Hare's-ear. Fl. July, Aug. Cl. 1804. Pl. 1 to 3 feet.

10 B. juncæm (Lin. spec. p. 343.) stem erect, paniced; leaves linear-lanceolate, cuspidate; umbels terminal, of 3 rays; leaves of involucre linear-lanceolate, cuspidate, shorter than the flowers, which are 3-5 in each umbel; ribs of fruit elevated, acute: having the furrows smooth, and almost without vitæ.


**Rushy Hare's-ear.** Fl. July, Aug. Cl. 1777. Pl. 2 to 4 ft.

11 B. glumaæm (Smith, prod. fl. grec. 1. p. 177.) but not of Spreng.) stem erect, very slender, paniced; leaves linear, 3-nerved; involucra and involucels of 5 lanceolate cuspidate 3-nerved leaves, which are pellucid between the nerves and veins, exceeding the umbels; furrows of fruit smooth, furnished each with one vitta, and the ribs are acute and very slender.

O. H. Native of Calabria, in barren fields; island of Sicio; about Constantinople, Cephalonia, Candia, and Cyprus. Rehb. icon. 2. p. 71. t. 179. B. flaveum, Forsk. ex ar. suppl. p. 205.? B. græcæ d'Urvill. enum. 30. p. 250. but of Bieb. Nearly allied to B. odontites, but perfectly distinct, in the leaves of the involucel being diaphanous between the nerves, not reticulatæ.

**Glumaceæ Hare's-ear.** Pl. 1 foot.

12 B. odontites (Lin. spec. p. 342. exclusive of the syn. of Haller.) stem erect, paniced; leaves linear, 3-nerved; leaves of involucel 5, linear-lanceolate, cuspidate, 3-nerved, reticulately veined from the middle nerve being pinnate; fruit having the furrows smooth, and furnished with one vitta each, and the ribs acute and very slender.

O. H. Native of Italy, Sicilia, Greece, Smyrna, Montpelier, and Mauritania. Jacq. hort. vind. 3. t. 91. Rehb. Icon. 2. t. 68. t. 177. B. Fontanesii, Guss. ind. sem. hort. bocc. 1825. ex indic. sem. 1826. pl. rar. 112. and prod. 1. p. 312.


13 B. aristaum (Barth. in Rehb. icon. 2. p. 70. t. 178.) stem erect, paniced; leaves lanceolate, linear, 3-nerved; leaves of involucel 5, elliptic, aristately cuspidate, reticulately veined, from the middle nerve being pinnate, exceeding the umbelles; fruit with smooth furrows, furnished with one vitta each, and acute very slender ribs.

O. H. Native of England, France, Balearic Islands, Corsica, Sardinia, Sicilia, Liguria, Dalmatia, &c. in dry fields and on hills. In England on a marble rock in Devonshire, unquestionably wild. B. discaricum, Lam. fl. fr. 3. p. 410. B. glumæcum, Spreng. umb. spec. 18. t. 3. f. 5. but not of Sibth. B. odoritites, Smith, engl. bot. t. 2468. Odontites luteus, Spreng. prod. 33. Schultz, syst. 6. p. 380. but not of Hoffm. By most authors this species has been confused with the preceding.


14 B. nodiflorum (Sibth. and Smith, fl. grec. t. 260.) stem dichotomous or trichotomous from the base; branches spreading, forked; leaves linear: radical ones distich; umbels axillary and terminal, rather capitate; leaves of involucre 5, ovate, cuspidate, transparent between the nerves, as well as the margins of the upper leaves; fruit with smooth furrows.

O. H. Native of Candia, in corn-fields; in Syria near Baruth; and Egypt. B. nanum, Foir. suppl. 1. p. 750. B. Mareoticum, Qq
Delil. ined. B. proliferum, Delil. fl. egyp. p. 61. t. 22. f. 2. B. minimum, Spreng. neue entd. 3. p. 163. Fruit striated, not warted.


15 B. heterophyllum (Link, enum. 1. p. 269.) leaves stem-clasping; lower ones lanceolate-linear; upper ones obovate-acuminate, almost perfoliate; umbels bident; involucrum none; involucels of 5 ovate acuminate leaves. Ʃ. H. Native of Egypt; and the Levant, near Aleppo. B. Ægyptiacum, Wild. B. lanceolatum, Horn. cat. hort. taur. 1812. ex herb. Furrows of fruit granular, ex Koch, umb. p. 157. This species is confounded with B. prostratum by Spreng. in Schultes, syst. 6. p. 365.


**Prostrated Hare's-ear.** Fl. May, July. Clt. 1819. Pl. ½ to ⅓ foot. 17 B. rotundifolium (Lin. spec. p. 340.) cauline leaves perfoliate, roundish-ovate; umbels of 5-6 rays; involucrum wanting; involucels of 5 mucronate leaves; furrows of fruit smooth, and destitute of vittae; ribs very slender. Ʃ. H. Native of Europe, in fields, especially in Caucasus, south of Siberia, and Persia; in England in corn-fields, especially on a chalky soil. Smith, engl. bot. t. 99. Sturm, deutschl. fl. with a figure. Hayn. arz. gew. 7. t. 1. B. perfoliatum, Lam. fl. fr. 3. p. 405. B. rotundifolium ♂, Spreng. in Schultes, syst. 6. p. 364.—Moris, hist. 3. p. 299. sect. 9. t. 12. f. 1. This plant has been reckoned among the vulnerary herbs; but its virtues, whether ever experienced or not, are recorded in old herbas only.


* * Perennial plants.*

18 B. auræum (Fisch. in Schultes, syst. 6. p. 366.) leaves coriaceous; radical ones ovate, ovate-oblong, obovate, attenuated into the petioles at the base: cauline ones ovate, acute, stem-clasping; leaves of involucrum 3-5, elliptic, or nearly orbicular, mucronate; of the involucels 5, conforming to those of the involucrum, coloured, longer than the flowering umbels. Ʃ. H. Native of Siberia, on mountains beyond the Baikal; and of Altaia. B. longifolium var. Spreng. umb. spec. p. 119. Very nearly allied to B. longifolium, but differs in the involucels being yellow, obtuse with a mucrone, not acuminate.

**Golden-umbelled Hare's-ear.** Fl. May, June. Clt. 1820. Pl. 1 to 2 feet.

19 B. longifolium (Lin. spec. p. 341.) leaves ovate-oblong; radical ones petiolate: cauline ones stem-clasping; leaves of involucrum 3-5, ovate, somewhat acuminate; of the involucels 5. Ʃ. H. Native of France, Germany, Transylvania, Switzerland, Savoy, &c. on the mountains.—J. Bauh. hist. 3. p. 199. f. 1. Cam. hort. t. 38. Umbellules 7-14 flowering. Fruit with upward, sharp, rather winged ribs: and with the furrows between the ribs smooth, and furnished with 3 vittae each, which are full of pellucid dots, ex Koch, umb. p. 117.

**Long-leaved Hare's-ear.** Fl. May, July. Clt. 1813. Pl. 1 to 2 feet.

20 B. Pyrenææ (Gouan. ill. p. 8. t. 4.) radical leaves lanceolate, elongated: cauline ones cordate-lanceolate, half stem-clasping, acuminate; umbels of 5, very rarely of 3 rays; involucrum of 3 broadly ovate leaves; involucels of 5 obovate distinct leaves, which are almost twice the length of the umbel-ules. Ʃ. H. Native of the Pyrenees; in rocky meadows, in the places called Llaurenti, Eresilds, Entre de Luz, Port d'Ozo; and in the Eastern Pyrenees. D. C. fl. fr. 4. p. 346. B. Pyrenæum, Wild. spec. 1. p. 1371. B. angulosum var. a, Lin. spec. p. 341. Leaves of involucrum rarely lobed at the base. Ribs of fruit broadly winged; wings sharply and membranously keeled; furrows smooth, furnished each with 3 vittae, which are full of pellucid dots. Koch, umb. p. 116.

**Pyrenean Hare's-ear.** Fl. May, July. Clt. 1814. Pl. 1 ft. 21 B. stellatum (Link. spec. p. 340.) radical leaves linear-lanceolate, elongated: cauline ones almost wanting; involucrum of 3 ovate-lanceolate leaves; involucels of 8 leaves, which are joined together into an 8-cleft disk, longer than the umbelles. Ʃ. H. Native of the Alps of Switzerland, Piedmont, Dauphiny, and Savoy, in stony meadows; and of Corsica, on the mountains, and probably of the Pyrenees. D. C. fl. fr. 4. p. 346.—Hall. helv. hist. vol. 177. t. 18. Ribs of fruit broadly winged; wings sharply and membranously keeled; furrows smooth, each furnished with one vitta.

**Stellate-involucellate Hare's-ear.** Fl. May, July. Clt. 1775. Pl. 1 to 1½ foot.

22 B. tríradia (Adams, ex Fisch. in l. c. p. 130.) radical leaves linear-oblong: cauline ones 3, stem-clasping, oblong or ovate, hardly acute; umbels of 3 rays; involucrum of 3 obovate leaves; involucel of 7-8 obovate leaves, which are scarcely longer than the umbelle. Ʃ. H. Native of Altaia, or the mountains, and at Lake Baikal. Allied to B. Pyrenæum, but differs in the leaves being much less acute, in the umbels being of 3 rays, in the involucels being hardly longer than the flowers, and in the young fruit not being glaucous.

**Three-rayed-umbellled Hare's-ear.** Pl. 1 foot.

23 B. sultineæ (D. C. mem. soc. gen. vol. 4.) radical leaves oblong-linear, attenuated at both ends: cauline ones stem-clasping, ovate, acuminate, with many parallel nerves; involucera of 5 unequal leaves, having many parallel nerves; leaves of involucel 5, ovate, acuminated, coloured, hardly longer than the umbelle. Ʃ. H. Native of Altaia, on the mountains. Allied on the one hand to B. àureum and B. longifolium, and on the other to B. granfinolium.

**Var. ß. angustius** (D. C. prod. 4. p. 130.) cauline leaves narrower, more glaucous; involucel of 2 leaves. Ʃ. H. Native of Dahuria.

**Var. γ. minus** (D. C. l. c.) involucel of 3-4 leaves; stem nearly simple; leaves narrow. Ʃ. H. Native of Altaia, on the mountains.

24 B. granfinolium (Vahl. symb. 3. p. 48.) stem nearly naked; leaves radical, linear; involucel of 3-5 elongated leaves, about one-half shorter than the rays of the umbel; leaves of involucel 5-8, oblong, mucronate. Ʃ. H. Native of the Alps of Europe and the Pyrenees. Rœm. fl. taur. p. 7. with a figure. D. C. fl. fr. 4. p. 367. Spreng. in Schultes, syst. 6. p. 368. B. petraum, Vill. dauph. 2. p. 576. t. 14. Jacq. icon. rar. 1. t. 56. This species differs from B. ranunculoides, in the leaves being all nearly radical, in the involucels being often 7-8-leaved, in the leaves of the involucel being more elongated. B. incirrum, Bell. app. 77. t. 11. is hardly a variety of this species, unless that the leaves of the involucel are more elongated. B. caricifolium and B. petraum of many authors are identical with this.

**Var. β. bicalyculæ (D. C. prod. 4. p. 131.) leaves of in-
volucrum 10, disposed in two series. \(2^1/2\) H. Native of Piedmont, on the mountains about Limone. B. bialycylatum, Bell. st. nov. p. 4. t. 2. in mem. acad. taur. vol. 7.

Grass-leaved Hare's-ear. Fl. May, July. Cirt. 1768. Pl. \(1/3\) ft. 25. B. Ranunculoideis (Lin. spec. p. 345.) radical leaves linear-lanceolate, attenuated towards the base; cauline ones stem-clasping, oblong-cordate, or ovate-cordate, striate; involucrum of 3 unequal leaves; involucres of 5 ovate or oblong nerves divided mucronate leaves. \(2^1/2\) H. Native of the Alps, Pyrenees, Jura, Apennines, Siberia, in rough exposed places; and of North America, at Cape Mulgrave, in Behring's Straits. Lam. dict. 1. p. 518. D. C. fl. fr. 4. p. 348. B. angulosum, Spreng. in Schultes, syst. 6. p. 366.—Park. theat. 581. no. 7.—Baum. hist. 3. p. 199. f. 2. Ribs of fruit elevated and sharp; and the furrows between the ribs smooth, and furnished with one vitta each, ex Koch, umb. p. 116. Habit of herb very variable, from a finger to a foot in height, simple or branched, bearing one or many umbels. Involucre of from 1 to 3 leaves, very variable in length, either broader or narrower than the leaves. The limits between the varieties are hardly perceptible, and to these may be referred the B. angulosum, ranunculoideis, repens, obtusatum, and graminifolium, Lapeyr. abr. and suppl. as well as B. graminum and Vapincense, Vill. B. caricifolium and Burserianum, Willd.


Var. \(\beta\), caricinum (D. C. prod. 4. p. 131.) leaves radical rather convolute, linear-subulate; cauline ones hardly divided at the base. \(2^1/2\) H. Native of the Apennines and the Pyrenees, in exposed rocky places. B. caricifolium of many herbaria. B. petraeum, Lin. spec. 340.? but the leaves of the involucres are distinct, not joined.

Var. \(\gamma\), oblongijfolium (Led. fl. alt. 1. p. 348.) stem very simple; radical leaves 2, linear-oblong, \(1\frac{1}{4}\) to 2 inches long, and 2 to 3 lines broad, acute; cauline leaves sessile, broader than the radical ones, of different shapes: the uppermost ones cordate-ovate, rounded at the apex, and mucronulate; involucrum of 3-8 unequal leaves; umbels of 4 unequal rays; involucres of 5-7 obovate mucronate leaves. \(2^1/2\) H. Native of Siberia.


26. B. Baldesche (Host, syn. 141.) stem branched; leaves stem-clasping, nearly linear, acute, nerved; radical ones tapering into the petioles; leaves of involucel oblong-linear, about equal in length to the fructiferous pedicels; ribs of fruit sharp; vittae 3 in each furrow. \(2^1/2\) H. Native of Mount Baldo; and of Altaia, at the rivers Tscharsky, Kerlyk, Bucktorfminsk; and near Schulbinsk. B. bicatul., Helm. in act. mosq. 2. p. 106. t. 8.—Gmel. sib. 1. p. 209. no. 24. Stems numerous, erect or ascending, simple at the base, and branched at the apex. Radical leaves 2-6 inches long. Involucrum of 4-7 lanceolate-linear leaves, but sometimes only of one elongated deciduous leaf. Umbels of 5-13 rays. Involucres of 5-9 oblong acute 5-nerved leaves; umbellules of 10-20 flowers.

Var. \(\beta\), multifolium (Led. fl. alt. 1. p. 530.) plant tufted; leaves rather fleshy. \(2^1/2\) H. Native of Altaia, in saltish deserts at the river Tschuja.

Baldo Hare's-ear. Fl. June, July. Pl. \(1/2\) to 1 foot.

27. B. Longicaule (Wall. cat. no. 557.) stems erect, sparingly branched; leaves linear, acute, 5-7-nerved, rather membranous; umbels 3-5-rayed; involucra of 1-3 ovate acute leaves; umbellules 15-rayed; leaves of involucel 5, ovate, mucronate, longer than the flowers, but shorter than the fruit; fruit 3 times longer than the pedicels, acutely ribbed; vitta 3 in each furrow. \(2^1/2\) H. Native of Nipaul, at Gossingasthan, Emoldi, and Kamnon. Herb 1\(\frac{1}{2}\) to 2 feet high, dividing into many stems at the neck. Leaves 3-6 inches long. Mature fruit 2 lines long.

Long-stemmed Hare's-ear. Pl. 1 to 2 feet. 28. B. Candollei (Wall. cat. no. 552.) stems rising from horizontal surculi, erect, sparingly branched; leaves lanceolate, acute, membranous, obliquely many nerved on both surfaces; umbels 12-18-rayed; involucrum of 2-3 ovate, acute, many nerved leaves; umbellules 12-15-rayed; involucres of 5 oval acute leaves, which exceed the fruit. \(2^1/2\) H. Native of Nipaul, at Gossingasthan and Emodi. Herb 2 feet high. Immature fruit hardly longer than the pedicels, oblong, ribbed, with the furrows smooth.

De Candolle's Hare's-ear. Pl. 2 feet. 29. B. Paniculatum (Brot. fl. lus. 1. p. 455.) leaves linear-narrow, many nerved: radical ones very long; stem erect, paniclited; umbels 2-3-rayed; involucrum of 2-3 small leaves; involucres of 4-5 subulate leaves, which are 3 or 4 times shorter than the umbellules; fruit oblong. \(2^1/2\) H. Native of Portugal, on calcareous hills. Fruit with 3 ribs on each side, usually of one mericarp and abort. Habit of B. frutescens, but the stems are annual.

Panicled Hare's-ear. Fl. June, Aug. Cirt. 1824. Pl. 1 to 3 ft. 30. B. exaltatum (Ten. app. 1st cat. hort. neap. ex D. C. prod. 4. p. 191.) stems erect, simple; leaves linear, acute, narrowed at the base so much as to form petioles, many nerved; umbels 5-9-rayed; involucra of 2-4 leaves; involucres of 5-7 spatulate leaves; furrows of fruit smooth. \(2^1/2\) H. Native of the kingdom of Naples, on calcareous rocks. B. obtusifolium, Ten. prod. p. 18. Leaves acute. A very distinct species, although it has been joined by Sprengel with B. semipossum. Very nearly allied to B. Paniculatum.

Drooping Hare's-ear. Pl. 1 foot. 31. B. exaltatum (Bieb. tabl. casp. p. 166.) leaves all linear, many nerved: lower ones elongated; stem erect, leafy, paniculately branched; umbels 5-10-rayed; involucra and involucres of 3-5 subulate unequal, small leaves; fruit ovate. \(2^1/2\) Bieb. 3. Stev. H. Native of Tauria and Caucasus, in maritime meadows, and on hills. B. Baldesche, Willd. spec. 1. p. 1375. exclusive of the syn. Bieb. fl. cauc. no. 513., but not of Turr. nor Host. Allied to B. falcatum, but differs in the fruit being shorter, and in the ribs being less acute.

Exalted Hare's-ear. Fl. July. Cirt. 1807. Pl. 2 feet. 32. B. Lineari-folium (D. C. prod. 4. p. 151.) stem erect, paniculately branched; leaves linear, very long, hardly acute, many nerved; umbels of 5-6 rays: involucra and involucres of 5-6 small acuminate leaves; fruit linear-oblong, with rather prominent ribs. \(2^1/2\) H. Native of Persia, on mountains about Badala, in the district of Khoi in the province of Aderbeijian, where it was collected by Szovits. Very like B. exaltatum, but differs in the fruit being longer. It is perhaps, however, only a variety of it.

Linear-leaved Hare's-ear. Pl. 1 foot. 33. B. Scorzonera-folium (Willd. enum. suppl. p. 80.) radical leaves lanceolate: cauline ones linear, all striated with 9-11 parallel nerves; stem paniculately branched; umbels 8-10-rayed; involucrum of 1-2 leaves; involucres of 4-5 lanceolate apiculate leaves, which are shorter than the umbellules. \(2^1/2\) H. Native of Siberia, at Lake Baikal. Allied to B. falcatum, but differs in the leaves being narrower, and in the nerves being parallel and more crowded.


34. B. Lanceolatum (Wall. cat. no. 551.) stem erect, sparingly branched; leaves lanceolate, much acuminate, glabrous, membranous, furnished with 2 oblique nerves on each side; umbels 5-6-rayed; involucrum of one small leaf; umbellules 5-8-rayed; involucres of 1-2 small leaves, rarely wanting; fruit ovate-oblong, with the ribs hardly elevated, and the furrows smooth.
**UMBELLIFERÆ.**

Long. B. *sulcātum* β Africānum, Berg. cap. 76. 7. but the umbels are said to be 5-rayed, and the involucres of 5 leaves.

*Murādi* Hare's-ear. Shrub 1 to 2 feet.

41 B. *Sīthorpi*cum (Smith, fl. grec. t. 264. prod. 1. p. 179.) plant suffrutescent; leaves linear, rather falcate, with smooth margins; involucra usually of 3 leaves; leaves of involucre linear-lanceolate, cuspitate, shorter than the umbelles. 2. H. Native of the Morea. A specimen collected near Theban agrees very well with the character given to this; and is probably the same. Plant only frutescent at the base.

*Sīthorpi*p* Hare's-ear. Shrub 1 foot.

42 B. *spinōsum* (Lin. fl. suppl. p. 178.) shrubby, erect, floriferous branches divaricate; stiff; the deflowered ones spinose; leaves linear-subulate, many veined, quite entire; involucra of 3-5 small subulate leaves. 2. H. Native of Spain and Mauritania. Gouan. ill. p. 8. t. 2. f. 3. Desf. atl. 1. p. 232.

Tenōriā spinōsā, Spreng. Ribs of fruit obtuse.


43 B. *frūtīcescens* (Lin. aman. 4. p. 269.) suffrutescous, erect; branches slender, elongated, erect; leaves linear-subulate, stiff, striated, 5-7-rayed; involucra of 3-5 very short subulate leaves. 2. H. Native of Mauritania, Spain, and between Perpignan and Narbonne. Cav. icon. t. 2. t. 106. Tenōriā frūtīcescens, Spreng. in Schultes, syst. 6. p. 376.—Burr. icon. t. 1256. Umbels small, 3-5-rayed. Ribs of fruit obtuse.


44 B. *foliolūsum* (Salzm. pl. exsic. ex D. C. prod. 4. p. 133.) suffrutescent, erect, nearly simple; leaves sessile, half stem-clasping, linear-lanceolate, acuminate, undulated, crowded, 1-nerved, quite entire; leaves of involucra ovate. 2. H. Native of Mauritania, about the Angiers. Stems a foot high. Leaves broad and half stem-clasping at the base. *Involucra* of 3 leaves; involucres of 4-5 leaves. Fruit ovate, with obtuse ribs.

*Leafe* Hare's-ear. Shrub 1 foot.

45 B. *ella*tum (Guss. prod. fl. sic. 1. p. 316.) plant suffrutescent at the base; branches elongated; leaves membranous, many veined: radical ones oblong-lanceolate, tapering into the petioles; cauline ones sessile, linear-lanceolate; umbels 8-12-cleft, involucra of 4-5 short leaves; leaves of involucres oblong, acuminate, longer than the umbelles. 2. F. Native of Sicily, on calcareous rocks. Allied to *B. plantaginēnum*, but the plant is frutescent at the base, and the leaves are acute. Ribs of fruit smooth.

*Tall* Hare's-ear. Shrub 3 to 5 feet.

46 B. *cane*scens (Schousb. mar. beob. p. 113.) shrubby, erect, branched; leaves oblong, membranous, very blunt, quite entire, sessile, with many parallel nerves; umbels 8-10-rayed; leaves of involucra oblong, obtuse, short. 2. F. Native of Mogador. Branches of a greyish white-colour. Plant glabrous.

Fruit like that of *B. frūtīcēs*. Leaves much thinner, and one-half smaller than those of *B. plantaginēnum*.


47 B. *plantaginēnum* (Desf. atl. 1. p. 233. t. 57.) shrubby, erect, branched; leaves lanceolate, mucronate, stiff, coriaceous, sessile, quite entire, many nerved; umbels 4-10-rayed; leaves of involucra elongated, subulate, acute. 2. F. Native of Mount Atlas, near Bougie. Tenōriā plantaginē, Spreng. in Schultes, syst. 6. p. 376. Nerves almost diverging from the base of the leaves, not parallel.


48 B. *Gibral*trica (Lam. dict. (1784.) 1. p. 520.) shrubby, erect, branched; leaves lanceolate, attenuated at both ends, 1-nerved, coriaceous, glaucous, oblique, quite entire, sessile; leaves of involucra lanceolate. 2. F. Native of Gibraltar, on the


Cult. Any common soil will answer this shrub; and cuttings are easily rooted.

### Tribe V.

SESEL'NEÉ (plants agreeing with Séseli in important characters) or Orthospermæ, pauefugiate terticulæ, Koch, umb. 102. D. C. prod. 4. p. 135. Transverse sections of fruit terete, or nearly so. Mericarps with 5 equal filiform or winged ribs: lateral ribs marginating, and often a little broader than the rest. Seed somewhat teretely convex on the back, and flat-tish in front. Raphe marginal or submarginal.


LIN. syst. Pentandria, Digynia. Margin of calyx 5-toothed. Petals elliptic, drawn out into a long acumén, which is bent in nearly to the base. Fruit nearly terete, variable in length, crowned by the teeth of the calyx in the immature state, and by the stylopodium and short spreading styles. Mericarps smooth, with 5 filiform ribs, lateral ones marginating; vitæ large, solitary under each rib, but none in the commissure nor furrows.—Perennial herbs, natives of the Cape of Good Hope, yielding an aromatic juice. Radical leaves cut. Stems erect, fistular, naked, branched, furnished with sheathing scales or abortive leaves. Terminal umbels compound, fertile: lateral ones often sterile. Involucra and involucles of many short marcescent leaves. Flowers yellow. This genus from the situation of the vitæ agrees almost alone with Melanoselum, but the form of the fruit is very different.


Jagged-leaved Lichtensteinia. Pl. 3 to 4 feet.

2 L. trífida (Cham. et Schlecht. l. c. p. 39.) leaves glabrous, ternate, rarely 2-4 cleft; leaflets lanceolate, entire or toothed; fruit elliptic. 2. G. Native of the Cape of Good Hope, at Schurfieldberg. Óenanthæ obscura, Spreng. syst. 1. p. 890. Umbels 10-20-rayed.

Trifid Lichtensteinia. Pl. 1 to 2 feet.

3 L. PYRÆTHRÓGIA (Cham. et Schlecht. l. c. p. 397.) leaves glabrous, pinnaled: lobes ovate, cut, serrated; fruit elliptic. 2. G. Native of the Cape of Good Hope, in the woods of Ruyterbosch. Sieb. pl. excis. no. 211. and 222. Bébon proliferum, Bum. fl. cap. p. 8. Óenanthæ inébrians, Thunb.
UMBELLIFERÆ. LVIII. LICHTENSTEINIA. LIX. OTTOA. LX. CÉNANTHE.

1 CE. fistulosa (Lin. spec. 365.) roots fasciculate, intermixed with oblong tubers; neck of root throwing out stout or stems; and leaves fustilar; leaves radical leaves bipinnate: leaves cuneate, lobed; calyx leaves pinnate: leaves filiform; umbels 3-5-rayed, without any involucrum; fruit turbinate, much crowded, ribbed. 2. H. Native of Europe and Caucasus, in ditches, ponds, and other watery places; plentiful in Britain. Drev. et Heyne. pl. europ. 5. t. 98. Fl. dan. t. 846. Smith, engl. bot. t. 365. O. aquatica, Bauh. pin. 162.—Bauh. hist. 3. p. 192. f. 1.—Petiv. herb. brit. t. 25. f. 5. and 6. There is a variety of this whose roots are composed of whorls of fibres. The plant has an unpleasant smell, and a hot nauseous taste, like many other umbelliferous plants. The roots and whole herbage are said to be poisonous. Flowers pale red.

Var. β, Tabernaemontàni (Koch, ex D. C. prod. 4. p. 136.) radical leaves divided into many linear segments. 2. H. Native of Altasat, in inundated places. O. Tabernaemontani, Gmel. fl. bad. 1. p. 676. exclusive of the syn. Poll.

Var. γ l lanceolata (Spreng. ex D. C. prod. 4. p. 136.) radical leaves pinnate or bipinnate: leaves or segments linear-lanceolate; and umbels bifid. 2. H. Native of Mauritania, in humid places on the sea shore near LaCalée. CE. lanceolata, Poir. suppl. 4. p. 135. CE. fistulosa, Poir. voy. 2. p. 137.

FisGeVular or Common Water-dropwort. Fl. June, Aug. Britain. Fl. 1 to 2 feet.


Var. γ involucrata (D. C. l. c.) involucrum of many leaves. 2. H. CE. peucedanifolia, Schlecht. et exsic. CE. Renhâna, Morivand, fl. ven. p. 149. In some specimens the involucre is absent. Fruit ovate, striated, pedicels not thickened after flowering.


3 CE. PEUCEDANIFOLIA (Poll. pall. 1. p. 289. f. 3.) tubers of roots sessile, elliptic, ending in a fibre each at the apex; radical leaves bipinnate: calyx ones pinnate; lobes or leaflets all linear; umbels 5-8-rayed, involucrum wanting, or of 1 leaf; fruit oblong, attenuated at the base, nearly sessile, coarctate beneath the calyx. 2. H. Native of middle Europe, in meadows, ditches, and bogs; as in France, Switzerland, &c. In England, near Bury; about Bedford; on the banks of the Isis, beyond Isley; and in peat bogs, under Headington Wick Coope, Oxfordshire. Umbeluliles dense, many-flowered, surrounded by the many leaves of the involucres, which are of equal length. Smith, engl. bot. t. 348. CE. filipendulifolia, Thüll. fl. par. 146. CE. Pollichii, Gmel. fl. bad. 1. p. 679. CE. peucedanifolii, Roth. CE. patens, Mench.-Lob. icon. 729. f. 2.—Dalech. hist. 773. f. 1. Flowers often reddish. The roots taste like the garden parsnip, but are probably dangerous food; yet they are not reckoned poisonous, though the roots of other species are virulent.

UMBELLIFERÆ.  

LX. ÓENANTHE.  

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4. **E. silaefolia** (Bieb. suppl. p. 232.) knobs of roots of an oblong-fusiform shape, or cylindrical, fasciculate; leaves pinnate; leaflets of the lower leaves lanceolate: of the upper ones linear; involucre almost wanting; fruit ovate, crowded, sessile, hardly longer than the involucel.  

5. **E. pimpinelloides** (Lin. spec. 365.) roots of several slender, fleshy, cylindrical fibres, which are dilated into ovate-globose tubers at the apex; radical leaves bipinnate; leaflets cut; cauleine leaves pinnate; leaflets of the cauleine leaves elongated, linear, and entire; involucre of many linear leaves; fruit cylindrical, striated, callous at the base, longer than the pedicels, which are thick and short.  


7. **E. apifolia** (D. C. prod. 4. p. 137.) roots unknown; stem branched, striated; lower leaves bipinnate; leaves ovate, deeply serrated; upper leaves pinnate; leaflets lanceolate-linear, acuminate; umbels of many rays; involucre almost wanting; fruit cylindrical-oblong, callous, almost at the base and apex, longer than the pedicels, which are thick.  

8. **E. crocata** (Lin. spec. 365.) knobs of roots oblong or elliptic, sessile; stem branched, furrowed; leaves bipinnate; leaflets wedge-shaped, deeply toothed; umbels of many rays; involucre and involucels of many leaves; fruit linear-oblong, with slender intermediate ribs, longer than the pedicels.  

9. **E. cavernifolia**; the whole plant being rather glaucous. Perhaps truly distinct from **E. pinnatifida**.  


**Var. a.** charophylla (D. C. prod. 4. p. 137.) tubers hanging by long fibres.  

**Var. b.** pimpinelloides (Lin. spec. 365.) tubers on short peduncles, intermixed with fibres.  

**Var. c.** apiatifolia (D. C. prod. 4. p. 137.) roots unknown; stem branched, striated; lower leaves bipinnate; leaves ovate, deeply serrated; upper leaves pinnate; leaflets lanceolate-linear, acuminate; umbels of many rays; involucre almost wanting; fruit cylindrical-oblong, callous, almost at the base and apex, longer than the pedicels, which are thick.  

**Callous-rooted Water-dropwort.** Pl. 2 to 4 feet.  

**Callous-rooted Water-dropwort.** Pl. 2 to 4 feet.
UMBELLIFERÆ. LX. ÓNANTHE. LXI. ANNESORHIZA.

p. 304. with a figure and p. 305. with a description.—Mor. ox. sect. 9. t. 7. f. 5.

12 CE. PHELLA'NDRIUM (Lam. fl. fr. 3. p. 432.) root fusiform, with many whorled fibres; stem furrowed, fiddle-shaped, leaves stalked, repeatedly pinnate, with innumerable, fine, expanded, dark green, narrow, wedge-shaped, cut, shining, acute, divaricate leaflets; umbels opposite the leaves, on short thick peduncles, without involucre; involucres of many narrow, taper-pointed leaves; fruit ovate, with 5 broad ribs, and narrow intermediate furrows, rather shorter than the pedicels. G. H. Native of Europe, Tauria, and Siberia, in rivers, ditches, and lakes; plentiful in some parts of Britain, as in ditches in Battersea-fields, near London; and near Edinburgh. Phellandrium aquaticum, Lin. spec. 366. Fl. dan. t. 1154. Smith, engl. bot. t. 689. Schkuhr, handb. t. 71. Hoffm. umbh. 1. p. 71. descript. and icon. t. 1. f. 17. Hayne, arz. gew. 1. t. 40. Nees. off. pl. 14. t. 6. Woody. med. bot. suppl. 266. Bull. fr. t. 147. Erh. pl. off. 24. CE. aquatica, Lam. dict. 4. p. 380. Ligústícum phellándrium, Crantz. hort. fasic. 3. p. 384. Cicutária palúdística, Ger. emac. 1063. f. 1. Lob. icon. 755. f. 1. Phellandrium, Dode, pempt. 591. f. 1. Roth always writes the old name phellándrium, which agrees with a cymology hazarded by Sir James Smith, in Rees' cycl. vol. 27. from φίλω, to be treacherous, alluding to the poisonous nature of the plant; φιλής αὐξήσων, as Linnaeus has it, κοράν of man, is not at all satisfactory. Linnaeus informs us that the horses in Sweden are seized with a kind of palsy by eating this plant; hence Withering and Sibthorp have named it horse-bane. This effect, however, is not to be ascribed to the plant, but to a coleopterean insect breeding in the stalks, which he therefore names Curculió paraparícetecus. The leaves are sometimes applied to discutent cataplasms, and for this reason Boerhaave speaks highly of it. The seeds are recommended in intermitentens, and are said to be diuretic, antiseptic, and expectorant. The efficacy of this plant rests chiefly on the testimony of Ernstein and Lange, by whom various cases of its successful use are published, especially in wounds and invertebrate ulcers, and even in cancers; also in phthisis, pulmonary, asthma, dyspepsia, and intermitent fevers. Dr. Woodville rightly observes, that though the disorders here noticed are so dissimilar as to afford no satisfactory evidence of the medicinal qualities of these seeds, yet they appear to well deserving of farther investigation.

Phellandrium or Fine-leaved Water-dropwort. Britain. Pl. 2 to 3 feet.

18 CE. STOLONIFERA (Wall. cat. no. 585.) stems creeping at the base, ascending, fiddle-shaped; leaves pinnate; upper ones pinnate; leaflets lanceolate, acuminate at the base and apex, with a few coarse serratures; umbels opposite the leaves, exuvolucrate; fruit obovate-oblung, much shorter than the pedicels. G.? H. Native of Silhet, in the east of Bengal, in rice grounds. Phellandrium stoloniferum, Roxb. hort. beng. p. 81. Teeth of calyx 3, subulate. Styles permanent.

Stoloniferous Water-dropwort. Pl. creeping.

14 CE. LINEÁRIS (Wall. cat. no. 556.) stems throwing out roots from the nodi at the base, erect, fiddle-straight; leaves pinnate; leaflets of the lower leaves oval, toothed; of the upper linear, elongated, toothed, or univalved; umbels opposite the leaves, without involucra; rays compressed. G. H. Native of Nipaul, in rice grounds. Fruit unknown.

Linear-leaved Water-dropwort. Pl. 1½ foot.

15 CE. JÁVÁNEC (D. C. prod. 4. p. 138.) stems terete, fiddle-straight; leaves divided into 3 parts above the sheaths of the pedioles, which are bipinnate; leaflets ovate-oblong, cuneated at the base, deeply toothed at the apex; umbels opposite the leaves, pedunculate; involucrum of a few small leaves; leaves of involucral setaceous; fruit ovate. G. S. Native of Java. Sium Javanicum, Blum?

Jaca Water-dropwort. Pl. ?

§ 2. Species, natives of the Cape of Good Hope, the greater part of which are hardly known, and all of them, most probably, belong to different genera from the present.


Filiform Water-dropwort. Pl. 1 foot.

18 CE. TENUIFÓLIA (Thunb. prod. 49. fl. cap. p. 253.) stem simple, striated; leaves bipinnate; leaflets linear-setaceous, deeply pinnatifid; upper leaves undivided, filiform; leaves of involucram and involucres very short; ribs of fruit rather winged. G. Native of the Cape of Good Hope. Spreng. umb. spec. p. 109.


19 CE. FERULÁCEA (Thunb. prod. 50. fl. cap. p. 252.) root unknown; stem branched, pinnate; leaves compound; leaflets lanceolate, acute, furrowed on both sides; involucra of few leaves. G. Native of the Cape of Good Hope. Spreng. umb. spec. p. 109.

Ferulate Water Drop-wort. Pl. 1 to 2 feet.

20 CE. INTERRUPTA (Thunb. prod. 50. fl. cap. p. 252.) root unknown; stem simple, terete, nearly leafless; leaves radical, petiolate, divided into 3 parts, and these parts are decomposed; leaflets oblong, sinuately pinnatifid, mucronately toothed; lower ones reflexed; involucrum of 5 leaves. G. Native of the Cape of Good Hope. Spreng. umb. spec. p. 107. Stem said by Thunberg to be villous at the base, but by Sprengel it is said to be smooth. Perhaps the same as Annesorhiza Canadensis.

Interrupted Water-dropwort. Fl. Ju. Jul. Cult. 1818. Pl. 1 ft. Cult. Although all the species grow naturally in ditches, rivers, and watery places, they grow well in any kind of soil, whether dry or wet. Increased by dividing at the root, or by seeds.

LXI. ANNESORHIZA (from ἀγγες, ἀγεσ, chaste, and πίτις, rhiza, a root; smell of root). Cham. et Schlecht. in Linnaea. 1. p. 398. t. 5. f. 4. D. C. prod. 4. p. 139.

LIN. SYST. - Peniändria, Digynia. Margin of calyx 5-toothed, permanent. Petals elliptic, acuminated, more or less emarginate, with an inflexed point. Fruit 5-angled, prismatic, crowned by the reflexed calyx and styles; mericarps convex on the back, unequal: one of them 8-winged, in consequence of the carinal and marginal ribs being winged, but the intermediate ribs are filiform: the other 4-winged, in consequence of the carinal...
umbelliferæ. lxii. sclerosciadium. lxiii.

rib being filiform, and the intermediate 2 and marginal 2 being winged; vitæ 1 in each furrow, and 2 in the commissure, which is flat. Carpophore bipartite.—An herb, native of the Cape of Good Hope. Root fusiform. Stem erect. Cauline leaves scale-formed. Umbels of 12-15 rays. Involucra and involucelles of many leaves, having hyaline margins.

1 A. Cape'nis (Cham. et Schlecht. l. c.). Y. G. Native of the Cape of Good Hope, on the sides of mountains. The root smells of anise, hence the name of the herb at the Cape, Anysonontel.

Cape Anise-root. Pl. 1 to 2 feet?

Cult. Any soil will suit this plant; and it will be easily increased by cuttings or by seeds.

lxii. sclerosciadium (from σκληρός, skleros, hard, and σκιάδων, skiadion, an umbel; in reference to the solid fruit). Koch, diss. inéd. in litt. 1823. D. C. coll. mem. 5. p. 43. t. 2. f. F. prod. 4. p. 140.

lin. syst. Pentândria, Digynia. Teeth of calyx 5, conjunct, permanent. Petals obsolete, with an inflexed point, which is bidentate or tridentate at the apex. Stylodium conjunct, styles filiform, at length diverging. Fruit ovate-globose, solid; mericarp with 5 thick, elevated, blunt, equal ribs; vitæ 1 in each furrow, which are narrow, and 2 in the commissure. Carpophore distinct, undivided. Seed terete, flattish on inside.—Herb glabrous. Root fibrile. Leaves divided into linear-oblong lobes or leaflets. Umbels axillary, sessile, almost without any involucrum; rays very unequal, that is, some of the umbellules are sessile, and some are on long peduncles in the same umbel. Involucræ of 5-7 leaves, having membranous margins. This genus is allied to Óenânthæ, from which it differs in the carpophore being free, in the stylodium being conical, and in the ribs of the fruit being prominent, t. (f. 56. F.)

1 S. nîmîle (Koch, l. c. D. C. l. c.). O. H. Native of fields, about Mogodor, and probably of Teneriffe. Óenânthæ nolîfôra, Schouw. mar. p. 120. Cônium rigiûdis, Mert. herb. and perhaps the same as Bûnium rigens, Spreng. but neither the description nor the country agrees with the present plant.


Cult. The seeds only require to be sown in the open ground in a warm sheltered situation.

lxiii. dasyloma (from δασις, dasyς, thick, and λομο, loma, a fringe; in reference to the ribs of the fruit). D. C. prod. 4. p. 140.

lin. syst. Pentândria, Digynia. Margin of calyx obsolete. Petals unknown. Stylodium depressed; styles short. Fruit ovate, with the transverse section terete; mericarps semi-ovate, not separating at maturity, with 5 corky, cellular ribs: the 3 dorsal ones small, and the 2 lateral ones large and blunt; vitæ 1 in each furrow, which are narrow, and 2 in the middle of the commissure, which is flat. Carpophore indistinct. Seed triangular, that is, convex on the back and angular at the commissure.—Herbs with the habit of Óenânthæ. Stems fustulose. Leaves bipinnate; leaflets cuneated, few-toothed at the apex. Umbels opposite the leaves, 5-6-rayed. Umbellules crowded, many-flowered. Involucra and involucelles none.


Bengal Dasyloma. Pl. 1 foot.

2 D. glâuca (D. C. l. c.) umbels pedunculate. O. H. Native of Bengal. Biforis? glâca, Wall. Differs from the preceding in the umbels being distinctly pedunculate, in the leaves

being larger and glaucous, in the dorsal ribs of the fruit being more acute, and the lateral ones smaller.

Glaucous Dasyloma. Pl. 1 foot?

Cult. The seeds only require to be sown in the open ground.

lxiv. cynosciadium (from κυκος, kykos, kykos, a dog, and σκιάδων, skiadion, an umbel). D. C. coll. mem. 5. p. 44. t. 11. prod. 4. p. 140.

lin. syst. Pentândria, Digynia. Teeth of calyx 5, subulate, permanent (f. 68. c). Petals ovate, nearly elliptic, obtuse, entire, flat, with an inflexed point. Stylodium conjunct, permanent; styles very short, reflexed. Fruit oval-oblong or ovate (f. 68. b.), attenuated at the apex; mericarps with 5 thick, corky ribs (f. 68. a.), 2 lateral ribs marginating; vitæ nearly straight, 1 in each furrow, and 2 in the commissure. Seed sub-semieterete. Carpophore bipartite.—American glabrous herbs. Stems angular, filiform, branched a foot high and more, with very few leaves. Leaves pinnate or palmate; leaflets linear, elongated, entire, articulated near the base, at which places the leaflets fall off; lower and upper ones undivided, linear, and elongated. Involucra and involucelles of many leaves. Flowers white.—This is an intermediate genus between Óenânthæ and Æthusa, but it differs from both, and from all its allies in the petals being flat and entire; it differs particularly from Æthusa in the calyx being 5-toothed, in the vitæ of the commissure being straight, and in the involucra and involucelles being of many leaves; from Sësëli in the stylodium being conical, and from Óenânthæ in the carpophore being distinct.

1 C. digita tum (D. C. l. c. t. 11. f. A.) leaves palmate; leaflets 3, linear, quite entire; fruit ovate at the base, but attenuated at the neck.—Native of North America, on plains of the Arkansas River. Óenânthæ digitâta, Nutt. mss. Umbels few-flowered. Involucrum of a few unequal leaves: leaves of involucrum subulate, very short. Rays of umbel very long.

Digitate-leaved Cynosciadium. Pl. 1 to 1½ foot.

2 C. pinna tum (D. C. l. c. t. 11. f. B.) leaves pinnate; leaflets distant, few pairs, linear, quite entire: terminal one very long; fruit oval-oblong.—Native of North America, along with the preceding species. Æthusa pinnâta, Nutt. mss. Pedicels a little longer than the leaves of the involucrum. Leaves of involucrum 7-8, nearly equal, linear-subulate.

Pinnate-leaveded Cynosciadium. Pl. 1 foot.

Cult. Sow the seeds in the open ground, and the plants will rise and flower and seed freely.


lin. syst. Pentândria, Digynia. Margin of calyx obsolete. Petals ovate, marginate, with an inflexed point: outer ones radiating. Fruit ovate-globose; mericarps with 5 elevated, thick, acutely keeled ribs: lateral ribs marginal, and a little broader than the rest, girded by a somewhat winged keel; vitæ 1 in each furrow, and with 2 arched ones in the commissure. Seed semi-globose. Carpophore bipartite.—Erect, annual, poisonous herbs. Leaves uniform, multifid. Involucrum wanting R r

FIG. 63.
or of 1 leaf; involucels of 3 or 5 spreading, or pendulous, setaceous leaves, situated on the outside of the umbellules, that is, unilateral. Flowers white. This species of this genus is admitted, but they are probably only varieties of one.

1 Æ. cynoÆtium (Lin. spec. p. 367.) leaflets wedge-shaped, decurrent, with lanceolate segments; rays of umbel nearly equal; involucrum wanting; involucels of 3 leaves, which are longer than the umbellules. O. H. Native throughout the whole of Europe, in cultivated grounds: a common weed. Smith, engl. bot. 1192. Curt. lond. fisc. c. t. 18. Bull. herb. t. 91. Hayn. arz. gew. 1. t. 35. Hoffm. umb. p. 97. Coriánium cynoÆtium, Crantz, fl. aust. p. 221. Cicuta cynoÆtium, Targ. ist. bot. CynoÆtium, Riv. pentap. irr. t. 76. Cicatária tenuifolia, Raîi, syn. 215. C. fátua, Lob. icon. 2 p. 280. f. 1. Herb erect, lurid green, fetid, and reckoned dangerous. Great carelessness can alone cause this weed to be mistaken for garden parsley; yet such an accident sometimes happens. The 3 long pendulous bracteas under each umbellule distinguish it from all its tribe. Dr. Bigelow, of Boston in New England, observed this Anëthos to be without scent in America, but seeds transmitted by him produced plants with the same nauseous garlic-like flavour as those of Great Britain. Some curious facts of a similar nature have been observed. The flowers of Hësperis matronâlis are said to lose their scent in America, after the first generation.


2 Æ. cynoÆtioûtes (Bieb. fl. taur. p. 227. suppl. p. 283.) segments of the leaves oblong, acute; rays of umbel nearly equal; involucrum wanting; involucels of 3 leaves, which are shorter than the umbellules; vittae in the commissure contiguous at the base. O. H. Native of the Ukraine, in shady places. Hoffm. ed. 2 p. 98. and 205. and tit. f. 9. Very nearly allied to the first species, but differs in being more branched, and 3 feet in height, or more.


3 Æ. elâ’ta (Friedlander, ex Fisch. cat. hort. gor. 1813. p. 45.) segments of the leaves bluish; involucrum usually of 1 leaf; involucels of 1-3 leaves, which are longer than the umbellules; outer rays of umbel longest; pedicels twice the length of the fruit. O. H. Native of Podolia. Hoffm. ed. 2 p. 98. Besser. enum. p. 54. Horn. cat. 4. hort. hafl. suppl. p. 34. Petals white, not as in Æ. cynoÆtium, greenish at the base. Styles purple after flowering. The plant is said to be edible, and not poisonous as the others.


Linn. sys. Pentândria, Digînà. Margin of calyx tumid, obsolete, toothless. Petals roundish, entire, involute, with a rather square retuse point. Transverse section of fruit nearly terete; mericarps with 5 prominent, bluntly keeled ribs: lateral ribs marginal, and a little broader than the rest; vittae 1 in each furrow, and 2 in the commissure. Seed somewhat semi-terete.

—Biennial or perennial herbs. Roots fusiform. Stems terete, striated, branched. Leaves triply pinnate, decomposed: with linear, pinnate leaves. Involucra and involucels almost wanting. Flowers yellow.—This genus differs from Anëthos with which it was formerly combined, by the mericarps being more turgid: having the margin rather more compressed than the back; and the transverse section of the fruit is therefore nearly terete, or with the margin rather compressed.

1 F. vulgâre (Ray, syn. 217. Gaertn. fruct. 1. p. 105.) stem terete at the base; leaves bipinnate, distich; leaflets awl-shaped, drooping; umbels 13-20-rayed; involucra and involucels wanting. 2 H. Native of Europe, in exposed, uncultivated places; in Britain, on chalky cliffs, very plentiful; and of Caucasus, near Baku, and in the plains between Sallian and Lenkeron. Anëthos Fœnîculum, Lin. spec. 722. Smith, engl. bot. t. 1298. Mill. fig. t. 15. Hayne, arz. gew. 7. t. 18. Fœnîculum officinale, All. pedem. no. 1359. Mûrum Fœnîculum, var. a, Spreng. prod. p. 32. and in Schultes, syst. 6. p. 433. Ligûsticum Fœnîculum, Roth. germ. 1 p. 124. Fœnîculum, Math. valgr. 2 p. 135. f. 1. Cam. epit. p. 534. f. 1. The taste and aromatic flavour of this our garden fennel are well known, and has long been an inmate of our gardens. The tender stalks are used in salads; the leaves boiled enter into many fish sauces. The sweet and warm seeds are a common carminative medicine for infants. The blanched stalks of the next species, F. dulce, called finocchio, are eaten with oil, vinegar, and pepper, as a cold salad, and they are likewise sometimes put into soups. This thickened part is blanched by earthing up, and is then very tender. “Owing to the peculiar nature of this species,” Mr. Neill observes, “it is more tender than the common fennel, and often perishes in the course of the winter. Misled by this circumstance, several horticultural writers describe it as an annual plant, under the name of Anëthos sêgëtum.” All are raised from seed, of which half an ounce is sufficient for a seed-bed 4 feet by 6 feet. Sometimes they are raised from offsets from the old plants, where only a few are wanted. Sow in the spring in light earth, either in drills from 6-12 inches apart, or in broad cast and raked in. When the plants are 3 or 4 inches high, thin or transplant a quantity 15 inches asunder. As the roots of old plants divide into offsets, these may be slipped off in spring, summer, or autumn, and planted a foot apart. They will produce immediate leaves for present supply and in continuance; or for immediate larger supply of leaves, you may procure some established full roots, and plant as above; let them be well watered. The same plants remain several years by the root; but as fennel sends up strong stems for seed in summer, these, or a part of them, should be cut down, to encourage a production of young leaves below in succession. It is apt to spread more than is desirable, if suffered to seed. The swelling stems of the Finocchio or F. dulce, when of some tolerable substance, should be earthed up on each side 5 or 6 inches to plant them white and tender. This will be effected in 10 days or a fortnight; and by successive sowings or cutting down plants during summer, successive crops of blanched stalks may be had from June to December. In procuring seed, permit some of the best flower-stems to shoot; and they will produce large umbels of seeds in autumn.


2 F. dulce (C. Bauh. pin. p. 147.) stem rather compressed at the base; radical leaves rather distich: leaves all tripinnate; with capillary elongated leaflets; umbels 6-8-rayed. O. H. Native of Italy, and Portugal, where it is cultivated for the sake of the blanched stalks, under the name of Finocchio. Finocchio dulce, Targ. cors. agr. 2 p. 52. Anëthos dulce, D. C. cat. hort. monsp. p. 78. Fœnîculum dulce, &c. J. Bauh. hist. 3 p. 4 with a figure. It differs from the preceding species in being hardly a foot high, in the earlier florescence, in the darker hue, in the stalks being edible, and in the characters given above. The use of this kind of fennel is given above with the common fennel.

Sweet Fennel or Finocchio. Fl. May, June. Clt. Pl. 1 ft.
3 F. pipér'tum (D. C. prod. 4. p. 142.) stem terete; leaflets subulate, very short, stiff, thick; umbels 8-10-rayed. Ψ. H. Native of the south of Europe, especially in Sicily, Sardinia, Portugal, &c. Anéthum Féniciulum β, pipér'tum, D. C. cat. hort. monsp. p. 79. Möeum pipér'tum, Schultes, syst. 6. p. 435. Guss. prod. fl. sic. 1. p. 345. Féniciulum asinus, Cup. hort. cath. 79. ex Bert. The plant is called Finocchio d'asino, or Assèf finocchio, by the Sicilians; it has a hot biting taste, hence the specific name.

Pepper Fennel. Fl. June, July. Cht. 1824. Pl. 4 to 6 ft. 4 F. Pan'mó'rium (D. C. prod. 4. p. 142.) stem erect, branched; leaves supra-decompound; umbels of 10-12 unequal rays; fruit oblong, deeply furrowed, destitute of wings. O. H. Native of the East Indies, where it is cultivated under the name of Painmuhooree or Madhuorrika. Anéthum Panmórium, Roxb. hort. beng. p. 22. journ. bot. 1814. vol. 2. p. 188. Said to be very like common fennel.

Painmuhooree. Fl. 2 to 3 feet.


Cape Fennel. Pl. 2 to 3 feet?

Cult. See the first species for the culture and propagation of the rest.


Lin. syst. Pentândria, Digínyia. Margin of calyx 5-toothed, increased a little after flowering. Petals roundish, entire, involu-

with a broad resuse segment: stylopodium conical; styles short, somewhat reflexed. Fruit terete, 10-furrowed; mericarps with 5 filiform, obtuse, equal ribs; lateral ribs marginal; vitae many, both in the furrows and commissure. Carphophore undi-

vided. A glabrous perennial herb. Root fusiform. Radical leaves rarely undivided, but usually pinnate, or bipinnate; leaf-

lets ovate or lanceolate, serrated; upper leaves ternate, and jagged. Umbels compound, terminal, of many rays. Involuta and involu-

cles of many filiform reflexed leaves. Flowers yellow. This genus is very nearly allied to Féniciulum, but differs in the calyx being 5-toothed and permanent.


ta Sicula Ucria, hort. paranorm. p. 137. p. 542. Sium Grae'cum, Lin. hort. cliff. 98? Sieb. et. exsic. Schultes, syst. 6. p. 542. Zan. hist. ed. Mont. 171. t. 128. There are varieties of this plant, having the leaves of the involucres either the length of the umbellules, or one half shorter than them.


Cult.—The plant will grow in any soil, and is easily increased by dividing at the root, or by seed.

LVIII. DEV'ERRA (a goddess worshipped by the ancients for encouraging housewifery, or rather the goddess of brooms; the plant having much the appearance of a broom,) D. C. coll. mem. 5. p. 45. prod. 4. p. 143. Bûbon species of authors.

Lin. syst. Pentândria, Digínyia. Margin of calyx obsolete. Petals ovate, acuminated, with an inflexed point. Styles short, at length divaricate. Fruit ovate, or roundish, rather compressed from the sides, rough from scales or spreading pili; meri-
carps semi-terete, with obsolete ribs; vitae 1 in each furrow, and 4 in the commissure. Carphophore bipartite.—Aromatic, leafless, glaucous, stiff, broom-like subshrub, natives of Africa. Pe-
tioles sheathing, permanent; limbs of leaves wanting in the adult plants, or nearly so; but in young plants they are small and many-terted, with setaceous linear leaves. Umbels of few rays. Involuta of 4-6 small deciduous leaves; involucels of 4-6 ovate-lanceolate, deciduous leaves, with membranous margins. Flowers white.

Sect. I. Div'erbraia (an alteration from the generic name).

D. C. prod. 4. p. 143. Fruit villous or hispid.


Var. β, Burckel'lii (D. C. prod. 4. p. 143.) young fruit beset with short, tubercular villi. Ψ. G. Native of the Cape of Good Hope. Very like the species, but the fruit is much less villous, and is therefore perhaps distinct.

Leafless Diverra. Shrub.

2 D. tortu'osa (D. C. prod. 4. p. 143.) stem much branched, twisted, divaricate; lower sheaths furnished with divided limbs, bearing subulate leaflets; fruit sparingly villous. Ψ. F. Native of the north of Africa.

Var. a, virgîa (D. C. prod. 4. p. 143.) stem twigg, bent a little. Ψ. F. Native of the kingdom of Tunis, near Kerouan. Bûbon tortuosus, Desf. fl. atl. 1. p. 357. t. 73. Poir. suppl. 1. p. 733.

Var. β, rigidîdor (D. C. prod. 4. p. 144.) stem much branched, stiff. Ψ. F. Native of Egypt, at the Pyramids. Bûbon tortu-


Sect. II. Pitú'rânthos (from πυτωρ, pituron, scurf, and ἄνθος, anthos, a flower; in allusion to the fruit bearing scurflike scales). D. C. prod. 4. p. 144. Fruit covered with scales.

3 D. Pitú'rânthos (D. C. l. c.) stem twigg; branches elongated, leafless, but furnished with sheaths; involucra, involucels, and fruit covered with scurf-like scales. Ψ. F. Native of Ly-


Scurfy-flowered Diverra. Shrub 1 to 2 feet.

Cult. A mixture of loam, peat, and sand will suit the species of Diverra; and they can only be increased by seeds.

LXIX. SORÀ'NTHUS (from σωρος, soros, a heap, and ἄνθος, anthos, a flower; in reference to the close capitate umbels of flowers). Led. fl. ross. alt. ill. t. 82. fl. alt. 1. p. 344. D. C. prod. 4. p. 669.

Lin. syst. Pentândria, Digínyia. Margin of calyx obsolete toothed. Petals broad-oval, permanent, with an inflexed point. Fruit a little compressed from the back, crowned by the divaricate styles: the transverse section elliptic; mericarps with 5 hardly prominent, equal ribs: lateral ribs marginating; vitae 1 in each furrow, and 4 in the commissure. Carphophore bipar-

tite.—An erect herb, with a habit between Sēsēli and Ėnāthe, but differs from the first in the teeth of the calyx being obsolete, in the petals being broad-ovate, not obovate, and in the ribs of the fruit being less prominent; and from the last in the shape of the petals, in the styles and in the carpophore being present.

1 S. Meye'ni (Led. l.c.). 2 H. Native of Siberia, at the river Irtysh, not far from the lake called Noor-Saisan; and at the river Bekin, in sandy places. Root fusiform. Stem erect, striated, simple at the base, and usually bearing 3-4 verticillate branches at the apex; branches leafless, or furnished with membranous scales in the middle. Radical leaves 3-4, tripinnate: leaflets linear; cauline leaves 1-2. Umbels of 10-15 rays, of these 4 longer than the rest. Involucra wanting, rarely of 1 leaf; involucels of 6-8 leaves, which are ovate-lanceolate, pilose on the outside, and ciliated, shorter than the umbellules. Flowers sessile in the umbellules: outer ones female; intermediate ones hermaphrodite: central ones male.

Meyer's Sorantius. Pl. 1 ½ to 3 feet.

Cult. This plant will grow in any soil, and is easily increased by seed.

LXX. SÉSÈLI (Seeycelyous is the Arabic name of an umbelliferous plant, but to what plant it is given is now unknown). Lin. gen. no. 560. Lag. am. nat. 2. p. 103. D. C. coll. mem. 5. p. 46. t. 3. f. R. prod. 4. p. 144.—Sēsēli and Bōbon species, Spreng.—Sēsēli species, Koch.

Lin. syst. Pentándria, Digýnia. Margin of calyx 5-toothed; teeth short, thickish, and sometimes oblateral. Petals obovate, coarctate into an inflexed point at the apex, emarginate or nearly entire. Fruit oval or oblong (t. 55. D. a. E. a.), with the transverse section nearly round, and crowned by the styles, which are reflexed (t. 55. D. b. E. b.). Mericarps with 5 prominent filiform or elevated thick corky ribs; lateral ribs marginal, and a little broader than the rest; vitex one in each furrow, but there are sometimes 2 in the outer furrows, and always 2 in the commissure, but very rarely 4. Seed somewhat semi-terete.—Usually glaucous biennial or perennial herbs. Leaves pinnate or ternately decompound. Involucrum wanting or almost so; involucels of many leaves. Flowers white, very rarely yellow.

Sect. I. Hippomârâthrum (from ἱππο, hippo, a horse, and μαραθα, marath, fennel; horse fennel). Rivin, Roehl, but not of Link, D. C. prod. 4. p. 144. Involucra wanting. Leaves of involucels joined nearly to the apex into a bowl-shaped cup, having a toothed margin.

1 S. Hippomârâthrum (Lin. spec. 373.) stem terete, usually branched at the apex, and nearly naked; leaves glaucous, bipinnate; leaflets linear, trifid, acutish; petioles dilated and sheathing; fruit smoothish; involucel cup-shaped. 2 H. Native of Altai, Piedmont, and Germany, on chalky hills and rocks. Jacq. fl. austr. 2. t. 143. Sium Hippomârâthrum, Roth, fl. germ. 1. p. 128. Sēsēli articulâtum, Ėrantz, fl. austr. p. 205. t. 5. f. 1-2. Hippomârâthrum pelviforme, fl. wett. st. Hipp. vulgâre, Roehl. Hippomârâthrum, Riv. pent. irreg. t. 67. Flowers white. Umbels smoothish, not tomentose as in S. leucosâprum. Fruit pubescent while young, but glabrous or nearly so when mature. The wild plant is nearly simple, but the plant branches when cultivated in a garden.

Var. β. hebecâryum (D. C. prod. 4. p. 144.) fruit beset with down, even in the mature state. 2 H. Native of Siberia. Nearly allied to S. tomentosum, but the habit is more that of S. Hippomârâthrum, and the umbel is downy, not tomentose. Horse-fennel. Fl. July. Clt. 1656. Pl. 1 to 2 feet.

2 S. tomentosum (Vis. dalm. spec. 6. t. 3. f. 1.) stem simple, terete; leaves biternate or trinerved: leaflets filiform, chan-
pinnate; leaflets broad, cuneiform, forked; superior ones oblong, entire; leaves of involucels very short, joined together at the base; fruit villous. 2. H. Native of Eastern Caucasus, in subalpine situations. Búbon cuneifolius, Spreng. syst. 1. p. 900.

_Wedge-leaved Meadow-saxifrage._ Fl. 1 foot?


9 S. _leucofýrum_ (Waldst. et Kt. pl. rar. hung. 1. p. 92. t. 89.) stem terete, flexuous, branched at the apex; leaves glaucous, decumbent; leaflets setaceous, linear; petioles dilated, and sheathing; involucre usually of one leaf; leaves of involucels subulate, joined together at the base, and are as well as the fruit puberulous. 2. or 3. H. Native of the Caucasus, about Buda on chalky hills. Athamántha leucuspérma, Poir. suppl. 1. p. 534. Very nearly allied to _S. Hippométrarthrum_, but differs in the leaves of the involucel being joined only at the base, not to the apex. Umbelhus dense. Fruit with elevated corky ribs and narrow furrows, ex Koch, umb. p. 110.


**Flowers yellow.**

10 S. _gracile_ (Waldst. et Kt. hung. 2. p. 122. t. 117.) stem terete; leaves trinervate; leaflets triangularly setaceous, very thin and rather flaccid; rays of umbel elongated; involucre wanting or nearly so, very short. 2. H. Native of Pannonia and Transylvania, on calcareous rocks. Baumg. fl. trans. 1. p. 298. Flowers yellow; petals oval-oblong, incurved at the apex. Caulux ascending. Flowering stems erect. Sheaths of leaves entire. Fruit elliptic and smooth, like the rest of the plant. Umbels opposite the leaves, drooping before expansion.

_Slender Meadow-saxifrage._ Fl. June, July. Clt. 1805. Fl. 1 to 2 feet.

11 S. _trinervátum_ (Pursh, fl. amer. sept. 1. p. 197.) root fusiform; leaves sheathing a long way along, ternate, binate, or trinervate; leaflets or segments elongated, linear or linear-lanceolate, quite entire, petiolulate; stem leafy at the base; umbels compound, with nearly equal rays; umbelules capitate; flowers dioecious or polygamous; immature fruit oblong, somewhat cylindrical; mericarps with 5 elevated acute ribs; involucrum and involucels wanting. 2. H. Native of North America, about the Columbia river; common on the dry gravelly soils near Fort Vancouver. Hook. fl. bor. amer. 1. p. 264. t. 94. This has much the habit of _S. leiocarpum_. Petals involucrate entire. Teeth of calyx obsolete. Flowers yellow.


12 S. _divinícatum_ (Pursh, fl. amer. sept. p. 739.) stem dichotomous, leafy; leaves petiolate, with short sheaths, bipinnate or tripinnatifid; segments linear-oblong, acute, short; peduncles lateral and terminal; rays of umbels equal; leaves of involucels linear-subulate; fruit roundish-ovate, crowned by the calcine teeth; mericarps rough, with 5 elevated ribs and many vitice. 2. H. Native of North America, on the banks of the Missouri; and about Carlton House upon the Saskatchewan. Sims, bot. mag. 1742. Nutt. gen. amer. 1. p. 194. S. leícidum, Fras. cat. 1813. Marathrum, Rafin. journ. phys. 1820. Flowers yellow. The vitice are numerous, and abound in powerfully aromatic oil.


13 S. _leíocarpum_ (Hook. in fl. bor. amer. 1. p. 265. t. 93.) leaves with long sheaths, trinervate or trinervately pinnate; leaflets petiolate, oblong, entire, attenuated or trifid, glaucous; stem nearly naked; umbels compound, with the rays very unequal; umbelules capitate; flowers dioecious or polygamous; immure fruit very smooth; involucre and involucels wanting. 2. H. Native of the north-west coast of Americ; on gravelly soils near Fort Vancouver, in the Columbia. Flowers yellowish. Styles reflexed.

_Smooth-fruitled Meadow-saxifrage._ Fl. 1/2 foot.

14 S. _defoliátum_ (Led. fl. ross. alt. 1. p. 343.) radical leaves early, caducous; stem furnished with leafless sheaths; involucre and involucels of few leaves. 2. H. Native of Siberia, in the Kirghisean Steppe, in sandy wet salt situations. Plant with the habit of _Férida sális_. Root pendunculate. Petals solitary, simple at the base, divided into floriferous branches from the middle, which are branched again. Flowers yellow, polygamous. Carpels with 5 prominent equal filiform ribs; vitice one in each furrow, and 2 in the commissure.

_Defoliate Meadow-saxifrage._ Fl. 1 foot.

**Flowers white.**

15 S. _elátum_ (Gouan, ill. 16. t. 8.) stem rather dichotomous, terete, few-leaved; leaves bipinnate; leaflets linear-filiform, stiffish; involucre almost wanting; fruit ovate, tubercular while young, but glabrous in the adult state, crowned by the calyx. 2. H. Native of the south of France, Italy, &c. in open situations. Gmel. syst. p. 489. D. C. fl. fr. 5. p. 284. Spreng. umb. spec. 118. exclusive of the first and perhaps of the second synonyme. S. elatium, Lin. spec. p. 375. is very probably a distinct plant.—Lob. icon. t. 727. f. 2. Plant glaucous.

_Var. β, ligálāre_ (D. C. prod. 4. p. 146.) superior caluce leaves long-linear, quite entire. Native country unknown, but is usually to be found in gardens, under the name of _S. gláucum_.


16 S. _varium_ (Trev. ind. sem. wratis. 1808. nov. act. bonn. 13. p. 168.) stem terete; branches few, erect; petioles furrowed, as well as the leaves, which are tripinnate; leaflets linear, glabrous, glaucous; involucrum almost wanting; leaves of involucels short, subulate; fruit oblong, glabrous, not crowned. 2. H. Native of Caucasus and Austria. S. várium, Koch, umb. p. 110. S. Тауричicum, Link, in Spreng. syst. 1. p. 884. but not of Koch. S. gláucum, Beib. fl. taur. 1. p. 234. suppl. p. 241. ex Trev. Differs from _S. montánunum_ and _S. Pallásii_, in the fruit not being crowned by the teeth of the calyx.

_Var. β, bráchycárpum_ (Bess. in litt. 1823.) fruit shorter. 2. H. S. choralphaloides, Hortul. not of Thunb. Perhaps a proper species.


17 S. _juvéceum_ (Sibth. et Smith, fl. grec. prod. 1. p. 200.) stem much branched, divaricate, stiff, glabrous; leaves rather glaucous; radical ones trinervate; leaflets keeled, trifurcate; cauline petioles very short, spreading; umbels solitary, few-

Rushy Meadow-saxifrage. Pl. 1 foot.

18 S. montanum (D. C. fl. fr. 4. p. 285, and suppl. p. 505.) stem striated; leaves glaucous, bipinnate, with entire sheaths, and narrow-linear mucronulate leaflets; involucre of 1-3 leaves, and the involucels of many linear-subulate leaves; fruit elliptic, glaucous, glabrous, or clothed with fine pubescence. 2. H. Native from France to Tauria, in open mountainous places.


Var. γ, multicaule (D. C. prod. 4. p. 147.) stem multiple at the base; leaves strictly adpressed. 2. H. S. multicaule, Rezn. obs. S. p. 27. Jacq. hort. vind. 2. t. 129.


19 S. Palla'sii (Bes. cat. hort. crem. 1816. p. 130.) stem terete, branched at the top; leaves bipinnate or tripinnate; leaflets trifid; segments linear, flat, acutish, glabrous, glaucous; upper leaves trifid or undivided; involucre wanting; leaves of involucels subulate, very short; fruit ovate, glabrous, crowned by the short 5-toothed calyx. 2. H. Native of Russia. D. C. mem. soc. gen. vol. 4. S. crassifolium, Schrad. and Hort. Umbels 10-15. Fruit elegantly striated with fuscous vitrea. Petiole sheaths narrow, elongated. Allied to S. elatum, but the fruit is not tubercled when young; to S. leucopsporum, but the fruit is glabrous. According to Koch, it is a variety of S. glaucescens.


20 S. tenuifolium (Lede. fl. ross. alt. ill. t. 97. fl. alt. 1. p. 333.) stem branched, flexuous; leaves bipinnate; leaflets linear, stiffish; involucre almost wanting; involucels short; fruit prismatic, tuberculately warped, rather shorter than the pedicels; receptacle with a membranaceous margin. 2. H. Native of Altai, in dry open sterile places near Ustakmenegorsk, and in the Kirghisean steppe, between the first mentioned place and Alakait. Plant glaucous. Stems many. Leaves with 5 opposite pinnas, and each pinna bearing 3 or 5, usually entire leaflets. Umbels 6-8-rayed. Involucrum usually wanting, rarely of one setaceous leaf; involucels of 7-8 small lanceolate membranaceous acuminated reflexed leaves. Styles and teeth of calyx reflexed on the fruit.

Fine-leaved Meadow-saxifrage. Pl. 1 foot.

21 S. corona'tum (Lede. fl. ross. alt. ill. 169. fl. alt. 1. p. 336.) stem branched; leaves bipinnate; leaflets linear-oblong, decurrent, entire or tripartite; involucre of 2 deciduous leaves; involucels of many lanceolate acute membranaceous reflexed leaves; fruit at length rather prismatic, wrinkled, crowned by the conical stypodium. 2. H. Native of Siberia, in the Soongarian desert. Plant glaucous. Radical leaves 8-10 inches long. Petioles dilated, and rather violaceous at the base, with white membranaceous margins. Umbels 6-8-rayed. Leaves of involucels inflexed at the points. Calyx obsoletely 5-toothed. Styles reflexed.


22 S. vagins'atum (Lede. fl. ross. alt. ill. t. 171. fl. alt. 1. p. 336.) plant glaucous; stem very simple; radical leaves pin-

nate; leaflets entire or trifid, nearly linear, acuminate; involucels and involucels of many broad linear leaves, with membranaceous margins; one of the leaves of the involucre larger than the rest; those of the involucels equal in length to the umbellules. 2. H. Native of Dahuria, near Nertschinsk. Stem nearly leafless, beset with sheaths, which have membranaceous margins, and truncate at the apex. Umbels 10-12-rayed, equal in length. Flowers rather large. Fruit with prominent ribs.

Sheathed Meadow-saxifrage. Pl. 1 to 1¼ foot.

23 S. Gillies'i (Hook. et Arn. in bot. misc. 3. p. 554.) plant clothed with hoary pubescence; stem angular; branches few, erect; leaves pinnate; leaflets of the lower leaves cuneated, and deeply toothed; of the superior ones linear and entire, or bipartite; involucra of few leaves or wanting; leaves of involucels linear, exceeding the pedicels; young fruit ovate, pubescent; styles elongated; stigmas globose, capitulate. 2. H. Native of Chili, in Valle de la Punta des Vacas, Andres of Mendoza. Petroselimum sativum, Hook. et Gill. l. c. p. 335. Flowers white. The ribs of the young fruit are hardly visible.

Gillies's Meadow-saxifrage. Pl. 1 foot.

24 S. polychyrum (Ten. ind. sem. 1825. p. 12. append. 5. fl. neap. p. 10.) stems clinate, tufted, having a few short branches; leaves supra-decompounded; leaflets trifid, linear, nearly terete, fleshy, rather mucronate; upper leaves reduced to the sheaths; umbels 13-20-rayed; leaves of involucels setaceous, shorter than the umbellules; fruit glabrous. 2. H. Native of Goat's Island and elsewhere, in the kingdom of Naples. Perhaps sufficiently distinct from S. montanum.

Many-leaved Meadow-saxifrage. Pl. 1 foot.

25 S. caspi'tum (Sibth. et Smith. fl. gracc. prod. l. p. 200.) stem simple, nearly naked; radical leaves tufted, flat, pinnate; leaflets deeply trifid; ultimate ones decurrent; involucrum of 3-5 very short leaves; fruit cylindrical, smooth, obscurely striated. 2. H. Native of the top of Mount Olympus. Smith, in Rees's cyclo. vol. 52. Spreng. umb. spec. 12. Radical leaves 3 lines long.

Tufted Meadow-saxifrage. Pl. 1 foot.

26 S. colora'tum (Ehrh. herb. p. 113.) stem striated, nearly simple; petioles straight, sheathing; leaves decompound, erect; leaflets or segments crowded, linear-cupulate, having the margins and keel, as well as the rays of the umbel, rather puberulous; involucrum almost wanting; leaves of involucels with membranaceous edges, about equal in length to the umbellules; fruit glabrous, acutely ribbed. 2. or 2. H. Native of France, Germany, Tauria, and Siberia, on mountains and hills. S. annuum, Lin. spec. p. 375. Schultes, syst. 6. p. 398. Jacq. fl. austr. t. 55. Hort. vind. t. 225. S. bienn. Crantz. auct. p. 204. Sium annuum, Roth, fl. germ. 1. p. 128. Sellarnum dimidiatum, D. C. fl. fr. no. 3492, and suppl. p. 503. S. carvifolium, Vill. dauph. 2. p. 586. Caurus simplex, Willd. spec. l. p. 1410—Vaill. par. p. 54, t. 9, f. 4. S. alpinum, Bieb. fl. taur. 1. p. 236. but which is perhaps referrible to Caudium venosum. Flowers white, but often reddish when young. The plant not being annual, the name given by Linnaeus is therefore not admissible. It differs from all the other species in the leaves of the involucre being equal in length or exceeding the umbellules.

Var. b, minus (Wallr. sched. crit. p. 124.) stem very humble.

In dry situations.

Var. γ, ferulaceum (D. C. prod. 4. p. 147.) leaves of involucels exceeding the flowers, usually reflexed.


27 S. striat'um (Led. fl. ross. alt. ill. t. 174. fl. alt. 1. p. 338.) stem branched, straight; leaves tripinnate; leaflets linear, elongated, straight; petioles sheathing; involucra wanting; involucels of many setaceous leaves, which are shorter than the
umbellules; fruit prismatic, glabrous. H. Native at the bottoms of the Altai mountains, frequent; as near Sogra, Lokteew, Smejow, and elsewhere. Root fusiform. Rays of umbels 15-30, angular, roughish at the angles. Umbellules with 20-20 flowers. Mericarps with 5 prominent ribs. Stylopodium pulvinate. It differs from S. coloratum, in the leaflets of the leaves not being roughish on the margins, in the rays of the umbel not being pubescent, and in the leaves of the involucre.

Var. B. simplex; stem simple; leaves bipinnate: leaflets 2-3 inches long, very narrow.


28 S. Pube'sculum (D. C. prod. 4. p. 147.) stem striated; petioles dilated at the base; sheaths with membranous margins; leaves decempound: leaflets few, linear, acute, glabrous; involucrum of one leaf; rays of umbels and fruit puberulous; involucels shorter than the umbellules. 2. H. Native about Constantinople. Sheaths and bracteoles coloured at the margins. Petals and styles purple. Allied to S. coloratum.

Var. B. Pálidulcum (D. C. prod. 4. p. 147.) sheaths less dilated, with pale margins; petals and styles white, or hardly reddish. 2. H. Perhaps Sélènum carvifolium. Vill. is referable to this variety.

Puberulous Meadow-saxifrage. Pl. 1 foot.


Var. B. T. Stratióicum (D. C. prod. 4. p. 148.) leaves bipinnate or tripinnate; leaflets trifid: segments linear, elongated, hardly glaucous. 2. H. Native of Tauria, about Odessa; and of Galicia. S. tortureōrum, Bieb. fl. taur. 1. p. 255. suppl. 1. p. 242. Bess. fl. gal. 1. p. 221. Intermediate from habit between S. tortureōrum and S. campéstre, but is referred to the first, from the involucre being absent, and from the leaves of the involucels being equal in length to the umbellules, &c.


32 S. Boconnici (Guss. cat. pl. 1821. p. 80.) stem terete, subfusiform at the base; leaves ternately decempound: leaflets stiff, lanceolate-cuneated, acute, rather trifid; upper sheaths leafless, long; involucra wanting; involucles of many setaceous leaves, which are about equal in length to the pedicels; fruit glabrous, ovate-oblong. 2. H. Native of Sicily on the mountains among chalky rocks by the sea-side, near Palermo; and of Corsica, on rocks about Sagona. Spreng. nuee endt. 2. p. 146. syst. 1. p. 885. Bühon Siculus, Spreng, in Schultes. syst. 6. p. 499. exclusive of the syn. of Bib. Crithum Dumiculum, Bocc. sicc. 53. t. 27, 28.—Cop. cupani. ed. 1. t. 105. ed. 2. t. 162. but in this last table it is delineated with the stem drooping at the apex, which is not the case.


† Species not sufficiently known.

33 S. S. striátum (Thunb. prod. p. 51. fl. cap. 259.) stem terete, striated, nearly simple; leaves tripinnate: leaflets linear-subulate, furrowed; involucrum of 4 leaves; umbel contracted; peduncles unequal; involucelles reflexed. 2. G. Native of the Cape of Good Hope. Stem purplish, a foot high or more. Branches few, divaricate. Leaves of involucel ovate-lanceolate, concave. Leaves glabrous.


34 S. C. cerephyllo'idēs (Thunb. prod. p. 51. fl. cap. 254.) stem terete, striated, dichotomous at the apex; leaves ternately decmpound: leaflets ovate, cut: segments linear, obtuse; involucræ and involucelles of 4 very short leaves. 2. G. Native of the Cape of Good Hope. Sheaths of cauline leaves membraneous, verticose, entire. Stem 2 feet high and more. Leaves glabrous, pale beneath. Leaves of involucel ovate, obtuse.


35 S. F. frāgile (Gouan. ill. p. 15.) stem unknown; leaves tripinnate; leaflets ternate, brittle, articulated: segments linear; sheaths large, 2-lobed at the apex; involucra none; umbels 15-rayed; involucelles of 7-9 leaves, which are 3 times shorter than the umbellules. 2. H. Native country unknown, as well as the flowers and fruit. Gouan cites under this plant the figures in J. Bauh. hist. 3. p. 18. f. 2. Clus. hist. 2. p. 196. f. 1. Tabern. icon. t. 97. f. 2. but these figures are very different from each other, and therefore the plant is very doubtful.

Brittle Meadow-saxifrage. Pl. 1 1/2 foot.

Cult. The plants of this genus are of easy culture; they require sandy or chalky soil, and are easily increased by seeds. Those species marked perennial prove seldom more than biennial when cultivated in gardens.

LXXI. L. Lībanotís (from ἱβάνος, ἱβανάσ, incense, and not from Mount Libanon, as the name would imply; L. vulgaris is supposed to exhale an odour like incense). Crantz. austr. p. 222. Garrn. fruct. 1. t. 21. D. C. coll. mem. 5. p. 17. t. 3. f. 5. prod. 4. p. 149. but not of Scop.—Athamānta, Scop. carn. no. 309. Lag. am. nat. 2. p. 103.—Sélesi section, Koch, umb. 111.—Athamānta species of Lin.

Lin. Syst. Pentádria, Digynía. All as in Sélesi but differs in the lobes of the calyx being slender (f. 55. F. c. a.), subulate, elongated, coloured, and deciduous, with the base hardly remaining; and in the involucra and involucelles being both usually composed of many leaves. Leaves pinnate or bipinnate: leaflets ovate, cut or multifid: lower ones usually decussate.
Sect. I. *Eríótis* (from ἔριον, wool, and οὖς *osos, ote*; an ear; in allusion to the petals being covered with short down). D. C. coll. mem. 5. p. 17. t. 3. f. 5. prod. 4. p. 149. Petals canescent from fascicles of short down (f. 55. F. g.).

1 L. *Buchtorfënsis* (D. C. coll. mem. 5. t. 3. f. 5. mem. soc. gen. vol. 4.) stem angular, branched; leaves pinnate; bipinnate, shining; leaflets broad-ovate or oblong, serrated at the top, with the serratures mucronate; peduncles stiff; involucrum almost wanting; involucels of many leaves, which are shorter than the umbelles; fruit villous from fascicles of hairs. getPath. H. Native of Siberia, very common in dry sterile places, especially about Buchtorfënsk. Bëbon Buchtorfënskës, Fisch, in Spreng. pug. 2. p. 55. Schlütes, syst. 6. p. 496. Athamânta rigidâs, Horn. hort. hafn. 2. p. 960. Athamânta cavarziefoliâs, Schrad. ined. Séseli Buchtorfënskës, Koch, umb. 111. Habit almost of *Libanâtës vulgârës*. Rays of umbel unequal in length. Leaves of involucels clothed with white down. Involucrum wanting, or of 2 or 3 entire or trifid or pinnatifid leaves.


2 L. *graveolëns*, plant clothed with hoary pubescence; stem branched; leaves pinnate; leaflets in fascicles, unequal, 2-3 times plicately pinnate; segments 2 or 3-parted; lobes linear, cuspidate; involucrum variable; involucels of many distinct leaves; fruit villously pubescent. 2. *H*. Native of Altaia, on rocks, but rare near the Fort called Ukstakenogorsck, but frequent beyond the river Irtysh. Séseli graveolëns, Led. fl. ross. alt. ill. t. 184. fl. alt. 1. p. 340. Involucrum wanting or of one bipinnate leaf; or of many lanceolate-linear reflexed hoary leaves. Leaves of involucel hoary, length of the umbelles. Petals pilose on the outside. The plant has a strong aromatic smell, and exudes a resinous gummy juice.

**Strong-scented** Stone-parsley. Fl. June, July. Pl. 1 to 2 ft.

3 L. *Patrinnâna* (D. C. prod. 4. p. 150.) stem terete, branched; leaves pinnate, canescent; leaflets multifid; lobes short, linear-subulate; umbelles 30-flowered; fruit rather compressed. 2. *H*. Native of Altaia, on a schistous arid hill at the river Irtysh, and at Ukstakenogorsck. The plant excludes a yellow aromatic juice. Mercarcips of fruit much compressed from the back, as in other species of *Séseli* and *Libanâtës*. Involucrum of a few multifid leaves. Leaves of involucels linear, connected together a little way at the base. Perhaps the same as *L. graveolëns*.

Pârin*’s* Stone-parsley. Pl. 1 to 2 feet.

Sect. II. *Eulibanâtës* (this section is supposed to contain the genuine species of the genus). D. C. l. c. Petals glabrous (f. 55. F. f.).

4 L. *vezuâres* (D. C. prod. 4. p. 150.) stem furrowed; leaves pinnate; leaflets deeply pinnatifid; lower ones decussate; segments lanceolate; fruit ovate-oblong, villous. 2. *H*. Native of the temperate parts of Europe and Asia, on mountains and in fields. In England on elevated chalky pastures, but rare; as on Gogmagog hills, Cambridgeshire; and between Albany and Stony Stratford. Athamânta Libanâtës, Lin. spec. p. 331. Schlütes, syst. 6. p. 488. Jacq. fl. austr. 4. t. 392. fl. dan. 754. Smith, engl. bot. 138. Séséli Libanâtës, Koch, umb. 111. L. daceoidès, Scop. carn. no. 317. L. montâna, All. pedem. 1368. t. 72. L. Diviniâna, Scop. carn. no. 316. Athamânta oreceseurnium, Huds. engl. 115. Ligústicum ferulaceum, Lapeyr. abr. p. 155. Libanâtës, Riv. pentap. irr. t. 37.—Bauh. hist. 3. p. 105. f. 1.—Plak. phyt. t. 173. f. 1. Radical leaves pinnate or tripinnate; leaflets opposite, deeply and sharply cut, smooth: the lowermost ones crowded, and often crossing each other. Flowers crowded, white or reddish. There are varieties of this plant with the fruit either pilose or nearly glabrous. The following varieties are probably so many species.


Var. ε, inciçâna (D. C. prod. 4. p. 150.) plant hoary from pubescence; leaves supra-decomposâ. leaflets very minute, wedge-shaped, 4-toothed; leaves of involucrum and involucels linear; umbels of many rays. 2. *H*. Native of Siberia.


5 L. *Sibiriça* (Meyer, verz. pfl. p. 123.) leaves pinnate; leaflets pinnatifid or bipinnatifid; segments lanceolate or oblong, cuspidate; involucra of many leaves or wanting; leaves of involucels shorter than the umbelles; fruit pubescent, having the furrows furnished with 2 vitre each. 2. *H*. Native of Siberia, very common; and of Caucasus, in the plains adjoining the mountains of Tauluseh. Athamânta Sibiërica, Lin. mant. p. 55. Atham. Libanâtës γ Sibiriça, Schlütes, syst. 6. p. 489. Séséli Libanâtës ĝ, Koch, et Mertens in deutsch. fl. 2. p. 412. Libanâtës vulgârës ĝ, Sibiriça, D. C. prod. 4. p. 150. Séséli athamânthoïdes, Led. fl. alt. 1. p. 342.—Gmel. sib. t. 186. t. 40. f. 2. exclusive of the synonyms. It differs from *L. vulgârës* not only in the leaves being simply pinnate, but in the involucra being usually wanting, in the involucels being shorter than the umbelles, and in the furrows of the fruit being furnished with 2 vitre, and the commissure with 4. Var. β, acëvâle (Led. fl. alt. 1. p. 342. under *Séséli*) leaves and umbels simple, rising in fascicles from the root.


6 L. *athamâنتهoïdes* (D. C. prod. 4. p. 150.) stem furrowed, angular, sparingly branched; leaves pinnate; radical ones petiolate: upper ones sessile, nearly opposite; leaflets pinnatifid; lobes simple or trifid, linear, short, acute; leaves of involucra many, linear, ciliated, rarely cut. 2. *H*. Native country unknown. Ligústicum athamânthoïdes, Spreng. umb. 126. exclusive of the synonyms. Fruit glabrous. It agrees in habit with Athamânta Pyrënaëcica, Jacq. hort. vindi. t. 197., the *Libanâtës vulgârës* var. γ daceifólia, but differs in the fruit being glabrous.


7 L. *verciëllëta* (D. C. prod. 4. p. 151.) stem terete, furrowed, naked at the apex; leaves pinnate; leaflets pinnate-partial, cut; lower ones decussate; involucra of few leaves; adult fruit naked. 2. *H*. Native of Mount Pannaruss. There is a plant very similar to this grows about Bayonne, at a place called Chambre d'Amour. Athamânta verticillâta, Smith, fl. græc. t. 275. prod. 1. p. 188. The plant is very different from *Pichôtës verticillâta*, to which it has been joined by Sprengel.

Whorled-leaved Stone-parsley. Pl. 1 to 2 feet.
3 L. tenuefölia (D. C. prod. 4. p. 151.) plant glabrous; stem terete; leaves supra-decompound; leaflets linear, divaricate; sheaths dilated; leaves of involucrum 5, about equal in length to the middle of the rays of the umbel; leaves of involucels with membranous ciliated edges, length of the umbellites; fruit glabrous. 2. H. Native of Altaia. Athamanta tenuefölia, Pall. ex Schultes, syst. 6. p. 495. Umbels lateral. Involucrum of few leaves; the outer leaf the largest. Calyxes glabrous. Mature fruit unknown.

Fine-leaved Stone-parsley. Pl. 1 to 2 feet.

9 L. Stephani naïa (D. C. prod. 4. p. 151.) stem simple, fleshy, glabrous, striated; leaves glabrous, pinnate; leaflets oblong or ovate, sessile, cut: uppermost leaflets rather trifid; petioles ending in a sheath at the base; lower cauline leaves larger than the radical ones, and on longer petioles; umbels dense, sheathed, sheathed, as well as the involucre and involucres, are membranous and villous; involucrum of many obovate-cuneated leaves; involucels of many linear leaves. 2. H. Native of Altaia, in the more humid parts of the Alps, especially at the springs of the river Tscharysch, and elsewhere. Athamanta compacta, Led. fl. Ross. alt. ill. t. 81. fl. alt. 1. p. 327. Athamanta cervaria? Pall. in. 2. p. 560. Athamanta monstrosea, Steph. ex Willd. rel. in Schultes, syst. 6. p. 495. Ligusticum athamanticum, Adans, miss. Petals erect, ovate-oblong, with an inflexed point. Styles equal in length or longer than the mericarps. Fruit nearly cylindrically, a little compressed from the sides, puffed, crowned by the permanent calyx and styles; mericarps with 5 filiform ribs: lateral ones margined; vitte 2 in each furrow, and 4 in the commissure. Var. β, pinnatifida; leaves pinnate; leaflets pinnatifid; segments linear, a little cut.

Stephan’s Stone-parsley. Pl. 1 to 1 ½ foot.

10 L. cachrayoide (D. C. prod. 4. p. 151.) plant glabrous, glaucous, stem terete; leaves pinnate; leaflets multifid; lobes linear, entire; superior petioles dilated; involucra and involucres of many elongated acuminate leaflets. 2. H. Native of Da-buria, near Nerstinski Sawod. Cachrys Sibirica, Steph. ex Fisch. in cat. sem. 1823. Spreng. syst. 1. p. 692. Trev. act. soc. nat. cur. 13. p. 168. This species will probably form a proper genus, from the fruit being very much compressed from the back, in the dorsal ribs being prominent, and in the marginating ones being dilated into narrow wings. Vitte 2 in the commissure, covered, and one in each furrow. Seed flat, not involute, as in Cachrys. Leaves of Sæsli; calyx involucral, and petals of Libanotis; fruit nearly of Peucedanum. Ovarium sometimes Villous when young. Fruit glabrous. Petals glabrous. Perhaps this, with Sæsli Patrinianæa, will form a new genus, nearly related to Agasæolis in tribe Selineæa.


LXII. CEENOLOPHUM (from κενος, kenos, empty, and λωφός, lophos, a crest; the ridges or ribs of the fruit are hollow inside). Koeh, umb. p. 103 in add. no. 34. b. diss. ined. in litt. 1828. D. C. coll. mem. 5. p. 48 t. 3. f. T. prod. 4. p. 151. —Cinthium species of Bebb.

Lin. syst. Pentandria, Digynia. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point (f. 55 G. l. b. f.). Transverse section of fruit nearly terete; mericarps with 5 equal sharp rather winged ribs, which are hollow inside: lateral ones marginating; vitte one in each furrow, and 2 in the commissure. Seed semi-terete, inclosed in a dry pericarp, which is adnate to it when young (f. 55 G.).—Glabrous perennial herbs. Leaves bipinate or many times ternate; leaflets divate, rather flat; segments lanceolate, cuspidate, quite entire, nervled. Involucrum wanting or of one leaf; involucels of many leaves (f. 56 G. c.). Flowers white. This genus is nearly allied to Cnidium, but differs in the seed being inclosed in a dry loose pericarp when mature.


Fischer’s Cenolephum. Fl. June, Aug. Cult. 1820. Pl. 2 ft. Cult. This plant will grow in any common garden soil; and is easily increased by seeds.


Lin. syst. Pentandria, Digynia. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point. Transverse section of fruit nearly terete; mericarps with 5 equal winged ribs; wings rather membranous; lateral ribs marginal; vitte one in each furrow, and 2 in the commissure. Seed semi-terete. Albumen flat on one side.—Herbs perennial, rarely suffruticosae. Leaves pinnate or ternate; leaflets multifid; lobes linear. Involucra variable; involucres of many leaves. Flowers white or rose-coloured. This genus is very nearly allied to Sèchil, but differs in the ribs of the fruit being winged, and in the margin of the calyx being obsolete.


UMBELLIFERÆ. LXXIII. Cnidium. LXXIV. Petitia.

Parsley-like Cnidium. Pl. 2 feet.
4 C. venosum (Koch, umb. p. 109.) stem terete, smooth, straight, hardy branched above; leaves pinnate; leaflets pinnatifid or bipinnatifid: segments linear, or oblong-linear, acutish, quite entire or trifid; involucra wanting or of few leaves; leaves of involucra setaceous, about equal in length to the umbellules.


5 C. anomaum (Led. fl. Ross. alt. t. 311. fl. alt. 1. p. 330.) stem furrowed, glabrous, twiggy; leaves pinnate; leaflets bipinnately cut: segments cut or nearly entire, acute; leaves of involucra oblong-linear, entire, pinnatifid, or bipinnatifid. H. Native of Altai, in fertile humid meadows, in the valleys of the rivers Tscheryshch and Kotsun, near Aleksandrovsk. Genet. fl. sib. 1. p. 190. t. 45. and 43. There is also a stemless variety found at the fountains of the river Tschegan. Root fusiform. Leaves pale green, glabrous. Involuta and involucres of many leaves; those of the involucro oblong, entire, and ciliated, and about equal in length to the umbellules. Petals white. Fruit beset with glaucous stones. Vitae in each furrow, and 2 in the commissure. Stylodium pusillius. Calyx 5-cleft.

Anomalous Cnidium. Pl. 1½ to 2 feet or more.
6 C. cuneatum (Led. fl. Ross. alt. t. 312. fl. alt. 1. p. 321.) stem furrowed, glabrous, branched; superior branches verticillate or opposite; leaves bipinnate: lower leaflets ternate: upper ones 2-5-parted, or cut, cuneated; leaves of involucro oblong-elliptic, a little toothed at the apex; leaves of involucres broad, elliptic, entire, mucronate. H. Native of Siberia, in meadows at the river Kerlyk, but rare. Root fusiform. Leaves pale green, glabrous. Rays of umbel 12-20. Calyx with 5 minute teeth.

7 C. fontanesii (Spreng. umb. spec. p. 41.) stem straited, dichotomous at the apex; leaves ternately compound; leaflets rather trifid: segments linear, blunthist; leaves of involucra and involucres many, linear, acuminate. H. Native of Algiers, in fields near Shibra. Laserpitium piceosancte, Desf. fl. alt. 1. p. 254. t. 71. Laserpitium Fontanesii, Pers. ene. 1. p. 313. Laserpitium Atlanticum, Poir. suppl. 3. p. 504. Ligusticum Fontanesii, Spreng. in Schultes, syst. 6. p. 565. Perhaps the furrows of the fruit are furnished with 1 or many vitae, and therefore may be either a species of Ligusticum or Cnidium; but the habit is that of Cnidium.

Desfontaines Cnidium. Pl. 1 to 2 feet.
8 C. suffruticosum (Cham. et Schlecht. in Linnaea. 1. p. 387.) stem shrubby, naked, decumbent; branches erect; leafy; leaves ternately compound; leaflets short, rather trifid; sheathes of leaves permanent. G. Native of the Cape of Good Hope, in sand by the sea-side. Cniatom suffruticosum, Berg. cap. p. 77. The habit of this plant is very different from all the other species.

Suffruticoso Cnidium. Shrub decumbent.

Diffuse Cnidium. Pl. 1 foot.

11 C. meliolium (Bieb. suppl. p. 212.) stem unknown; leaves pinnate; leaflets profundly pinnatifid: segments linear-subulate; involucra and involucres of many subulate, reflexed leaves. H. Native of the Alps of Caucasian. Involutum of 6-8 leaves. Involutare longer than the flowers. Flowers of a beautiful rose colour.

Meum-leaved Cnidium. Pl. 1 to 2 feet?
12 C. canadense (Spreng. in Schultes, syst. 6. p. 415. exclusive of many of the synonyms) stem angular, flexuous; leaves bipinnate, shining; leaflets many-parted: segments lanceolate; involucra and involucres of few leaves. H. Native of North America, at the mouths of large rivers from Canada to Carolina; at the mouth of the St. Lawrence, in Canada. Selinum canadense, Michx. fl. bor. amerc. 1. p. 153. A Cynium bipinnatum, Walt. carolin. p. 15. The fruit is unknown, and therefore it is a doubtful species of Cnidium. Flowers white.

Cult. See Sessilis, p. 311. for culture and propagation.


Lin. syst. Pentândria, Digynia. Calyx toothless. Petals lanceolate, entire, with an involute point. Fruit oblong, crowned by the reflexed styles; transverse section roundish-elliptic, furrowed on both sides, from the raphe being nearly central, not marginal; mericarps rather convex on the back, with 5 contiguous, thick, elevated, wingless, bluntly keeled ribs, therefore the transverse section is triangular, spongy inside; lateral ribs not broader than the rest, nor marginal. Vitae solitary in the furrows, which are narrow, and twin in the commissure. Seed adhering to the tegument, compressed, not angular.—A glabrous, green, biennial herb: with a very long, branched, thick root, which is spongy inside, and intercepted by transverse, membranous dissepiments. Stem short, nearly simple, thick, fissilare, leafy at the base, straited above, and scabrous at the stria. Leaves tripinnate; sheaths large; rachis smoothish; lobes linear, scabrous on the margins, and on the dorsal nerve, mucronate at the apex. Umbels terminal, of many rays: rays 14-20, very rough, and very unequal: central ones much the shortest. Involuta wanting, rarely of 2 leaves; involucres of from 4-12 linear-subulate, quite entire leaves, which are much shorter than the umbels. Flowers greenish. Stylodium large.
1 P. scabra (Gay. l. c.). H. Native of the Eastern Pyrenees, in the valley called d’Eynes, at a place called La Cueillette de Nouri, among the debris of schistous rocks, at the elevation of 7200 feet, a little below the limits of perpetual snow. Selinum scabrum, Lapeyr. abr. 1813. p. 147. Spreng.

Scabrous Petitia. Pl. ½ to 3½ foot.

Cult. Sow the seeds in a dry situation in spring, in light earth.


Lin. syst. Pentandria, Digynia. Teeth of calyx at first obscure, but increase in length as the fruit comes to maturity; they are at last erect and subulate, and longer than the stylodium. Petals without claws, quite entire, ovate-lanceolate, acuminate, and very acute, with an involute point. Fruit compressed a little from the sides, oblong-elliptic, crowned by the reflexed styles. Mericarps convex on the back; with 5 distant, equal, filiform ribs: lateral ribs marginating; funnels of fruit very broad; vitae 6 in the commissure, 4 in the lateral funnels, and 3 in the dorsal ones, all distinct. Seed adhering.—A perennial, smooth herb; with an oblique root, which is naked at the neck. Stem slender, quite simple, angularly striated, smooth, unless just under the umbel, where it is scabrous, a foot high, bearing 2 or 3 leaves. Leaves pinnate; leaflets sessile, decussate, palmately 3-parted; segments palmately 5-5-cleft; lobelets linear, cuspidate. Umbels terminal, small, dense, when in fruit nearly globose; with short, stiff, smooth rays. Involucrum wanting, very rarely of 3-4 leaves; involucres of 1-5 linear-subsulate leaves, which are about equal in length to umbellules, and sometimes much shorter. Petals white. Stylodium small. Carrophore bipartite.


Cult. See Cenolophium, p. 513. for culture and propagation.

LXXVI. THASP'UM (from the Isle of Thaspsia, which gave the name to the Thapsia of the ancients; in allusion to its affinity with that genus). Nutt. gen. amer. 1. p. 196. exclusive of some species. D. C. prod. 4. p. 153.

Lin. syst. Pentandria, Digynia. Margin of calyx 5-toothed. Petals elliptic, tapering into a long, inflexed point. Fruit not contracted from the sides, somewhat elliptic; mericarps convex, with 5 winged, nearly equal ribs; funnels striated, each furnished with 1 vitta: and the commissure with 2. Seed terete.—Perennial herbs, natives of North America. Involucra wanting; involucres unilateral, of 3 leaves. This is a very distinct genus from Smyrnis and Zizia; but it is evidently allied to Cnidium, from the fruit, but is distinguished from that genus in the calyx being 5-toothed, in the petals not being emarginate, in the involucres being 3-leaved, and in habit.

§ 1. Umbels opposite the leaves. Flowers dark purple.


§ 2. Umbels terminal. Flowers yellow.


3 T. acte'folium (Nutt. l. c.) leaves binate; leaflets oval, equally toothed; umbels somewhat verticillate; lateral ones sterile. 2. H. Native of Canada, on the banks of the St. Lawrence, near Tadoussac; and of Vîrginia. Ligústicum acte'folium, Michx. fl. bor. amer. 1. p. 166. Herb 3 feet high. Leaves of involucres setaceous. Fruit oblong-oval, with 10 rather winged ribs.

Actea-leaved Thaspium. Fl. Ju. Jul. Clt. 1810. Pl. 3 ft. Cult. The species of this genus will grow in any common garden soil, but best in peat; and are easily increased by dividing at the root, or by seed.


Lin. syst. Pentandria, Digynia. Margin of calyx 5-toothed. Petals on long claws, spathulate obovate, with a triangular inflexed point. Fruit a little compressed from the sides; mericarps with 5 sharp, rather winged, equal ribs: lateral ribs marginating; vitæ 3-4 in the funnels, which are broad, and 8 in the commissure. Carrophore bipartite. Seed rather semi-terete.—Glabrous, perennial herbs. Radical leaf binate; leaflets large, ovate-lanceolate, unequally serrated. Stem much branched, naked at the apex. Involucrum wanting, or of 1 leaf; involucres of 2-5 leaves. Flowers white, those in the disk of the umbel sterile.


Cult. See Thaspium above for culture and propagation.


Lin. syst. Pentandria, Digynia. Margin of calyx 5-toothed. Petals obovate, emarginate, or entire, with a very short unguliflexed point. Fruit attenuated at the neck; transverse section nearly terete, or a little compressed from the sides; mericarps with 5 filiform, wingless, equal ribs: lateral ribs marginating; vitae 2 or 3 in each funnel. Seed somewhat semi-terete. Carrophore unknown.—Perennial or biennial herbs, usually velvety from villi on the stem, leaves, and fruit.
Leaves trinerved or pinnate; leaflets cut or multifid. Involucra of 1 or few leaves; involucels of many leaves. Flowers white.


2 A. *Macedónia* (Spreng. in Schultes, syst. 6. p. 491.) stem panicked, clothed with soft, velvety villi; leaves almost glabrous; petioles twice trifid, decompound; leaflets ovate, somewhat 3-lobed, mucronate toothed; umbels very numerous, velvety. ʒ. F. Native of Macedonia, Atlas, and according to Allioni about Nice. *Bubon Macedonicum*, Linn. spec. p. 304. Desf. atl. 1. p. 256. Blackw. icon. 382. Plench. icon. t. 194. Daucus Macedonicus, Riv. pent. irrig. t. 48. A'pium Macedonicum, Moris. hist. sect. 9. t. 9. — Lob. icon. 706. Fruit bottle-shaped, hispid, covered by 10-12 vitiae, having the ribs very slender.—In some parts of the East they use this plant to scent their clothes; the smell is very strong, and rather disagreeable to Europeans. The plant, but especially the seed, is esteemed to be diuretic, emmenagogue, and carminative; the seeds are an ingredient in theriac.

*Macedonian Parsley, or Spigél.* Fl. June, Aug. Cit. 1596. Pl. 1 to 2 feet.

3 A. *Ramosissima* (Port. in Schultes, syst. 6. p. 496.) stem erect, scabrous, much branched; radical leaves and lower cauline ones supra-decompound; leaflets filiform, mucronulate, stellate, glabrous; upper ones ternate; involucrum of many leaves; petals hairy on the outside as well as the fruit. ʒ. H. Native of Dalmatia. Host fist. auct. 1. p. 364. Allied to *A. Cretensis*. Fruit ovate, not bottle-shaped, very hairy. Petals emarginate, very hairy on the outside. Involucra of 8-10 linear leaves. *Much-branched Spigél.* Pl. 1 foot.

4 A. *Cretensis* (Lin. spec. p. 352.) stem rather villous; leaves bipinnate; leaflets divided into linear, trifid lobes; lower ones hardly exceeding the rest; involucra of 1 or few leaves; petals hairy on the back. ʒ. H. Native of the south and midparts of Europe, in exposed situations. The leaves are said to be trinerved by many authors. The seeds have been occasionally employed as carminatives, and were supposed likewise to be diuretic and emmenagogue; lately they have been little used, except as ingredients in theriac and mithridate. Haller, however, judges it to be much superior to the common carrot in medicinal efficacy. It was celebrated anciantly as a specific in the stone.


*Cretan Spigél or Candy Carrot.* Fl. June, Jul. Cit. 1596. Pl. 1 foot.

5 A. *Mathioli* (Wulf. in Jacq. coll. 1. p. 211. icon. rar. 1. t. 57.) stems glabrous, flexuous; leaves glabrous; leaves 3-4 times ternate; leaflets linear-filiform, elongated, divaricate; involucra of 1 or few leaves; petals glabrous. ʒ. H. Native of the Alps of Carinthia, Camiola, and in fields about Nice. *Libanótis rupéstris*, Schop. carn. no. 315. t. 9. Mèum Mathiél, Bald. fl. p. 390. f. 1. Stem glabrous, except under the origin of the leaves, where they are rather puberulous. Perhaps *Sesel* Túrbith, Lin. is referrible to this plant, and probably a *A. annua*, Lin. spec. 353. Leaves very like fennel.


*Sicilian Spigél.* Fl. June, July. Cit. 1866. Pl. 2 to 3 ft.

7 A. *Canesceens* (D. C. prod. 4. p. 155.) plant glabrous at the bottom, and canescent at the top from short crowded down; leaves ternately decompound; leaflets cut; lobes linear; petals hairy; involucra and involucels of 5 leaves; petals smoothish; fruit ovate, beset with very long, white, spreading hairs, which are rather capillate at the apex. ʒ. H. Native of the Levant, between Aleppo and Bagdad. Herb half a foot high, sparingly branched. Leaves of involucra and involucels oval-oblong, apiculate. Petals some of them cleft at the apex, and others entire. Immature fruit unknown, and therefore the genus is rather doubtful.

*Canescent Spigél.* Pl. 3/4 foot.

† Species not sufficiently known, and will perhaps, when more fully examined, be removed from the genus altogether.

8 A. *Depressa* (D. Don, prod. fl. nep. p. 184.) leaves bipinnate, pubescent; leaflets very slender, many-parted; segments linear, mucronate; stipes filiform, assurgent, velvety, exceeding the leaves; umbels simple or compound; involucrum of 5 pinnatifid leaves. ʒ. H. Native of Nipaul, in the alpine region of Gosaingathan. Plant tufted. Root long, simple, fusiform, a finger in thickness. Scapes numerous, 8 inches high.

*Depressed Spigél.* Pl. 3/4 ft.


*Giant Spigél.* Pl. 3 to 4 feet.

10 A. *Tarres* (D. Don, prod. fl. nep. p. 185.) leaves bipinnate, glabrous; leaflets pinnatifid; segments linear, acute, furrowed above; involucra of 5 short leaves; involucels of many leaves, equal in length to the rays; stem straight, terete, smooth. ʒ. H. Native of Nipaul. Stem 2 feet high, simple.

*Terete-stemmed Spigél.* Pl. 2 feet.

11 A. *Carvifolia* (Steph. in Schultes, syst. 6. p. 496.) involucrum dimidiated; segments pinnatifid, linear, hoary. ʒ. H. Native of Siberia (ex Steph. in herb. Willd.). There are 3 specimens under this name in Willdenow’s herbarium, which are very distinct from each other; one of which is *Lasiopityum Daucicum*; the second is *Rúmica scelólidae*, and the third is *Rúmica athamanthóides*. The plant is therefore doubtful.

*Caraway-leaved Spigél.* Pl. 1 foot.

Cult. These plants will grow in any common garden soil; and are either increased by dividing at the root, or by seed.

L. scoticum (Linn. spec. p. 359.) stem slightly branched at the upper part, striated, smooth; leaves binate, opaque; leaflets rhomboid, broad, acute, smooth, serrated; involucra of unequal, partly leafy, entire leaves; leaves of involucral more numerous, lanceolate, rather unequal. 2. H. Native of Lapland, Norway, &c., North America, and Siberia; Kotzebue's Sound, and Kamtschatka; Scotland on the sea-coast about the Frith of Forth; also on the western coast; very abundant in rocky places; about Dunstanburgh Castle in Northumberland. Smith, engl. bot. t. 1207. Fl. dan. t. 297. Torrey, fl. un. st. 1. p. 313. Cham. et Schlecht. in Linnaea. 1. p. 390. Angelica scoticum, Lam. dict. 1. p. 173. Sesiellum Scoticum, Riv. pent. 1853. p. 59. A pium ternatum, Willd., herb. in Röm. et Schultes, syst. 6. p. 491. Flowers white, with a reddish tinge; anthers red. Fruit oblong, having the commissure furnished with 6 vittae. Root fusiform, warm, and pungent. The herb is eaten either crude or boiled by the natives of Scotland and its isles. The flavour is highly acid, and though aromatic, and perhaps not unwholesome, is very nauseous to those who are unaccustomed to such food. L. Scoticum, Lour. coch. p. 183. cultivated in China, belongs probably to a distinct genus, from the circumstance of the petals being entire.


2 l. carniolicum (Host, fl. aust. 1. p. 378.) stem erect, branched, striated; radical leaves trinate; leaflets deciduous, pinnae-pinnatifid, mucronate; involucra of many leaves, which are toothed at the apex. 2. H. Native of Carniola, on a mountain called Grosskahlenberg; and of Silesia. Fruit large, nearly 3 lines long, ovate-oblong, having the ribs short and a little winged, and with the furrows broad and furnished with 3 vittae each. Teeth of calyx very small.

Carniolian Lovage. Pl. 2 to 3 feet?

3 l. alatum (Spr cling, umb. spec. p. 125.) stem furrowed and winged; leaves supra-decompound; leaflets petiolate, ovate, dentant, pinnate-pinnatifid; segments deeply serrated, oblong; involucri of few leaves; leaves of involucres setaceous, about equal in length to the umbellules. 2. H. Native of Caucasus, in grassy places. Röm. et Schultes, syst. 6. p. 551. Athamantia alata, Biebr. fl. taur. 1. p. 214. Cnidium myrrhifolium, Biebr. suppl. p. 212. Flowers rose-coloured when young, but at length becoming white; anthers red. Margin of calyx short, 5-toothed. The commissure, according to Koch, is furnished with 4-6 vittae, and the furrows with as many, from which it differs from the genus Cnidium and especially from C. apifolium, which is very like.


4 l. fulvum (All. pedem. no. 1319. t. 60. f. 1.) stem branched, striated; leaves supra-decompound; segments rather remote, linear, cuspidate; leaves of involucrum pinnatifid at the apex. 2. H. Native of Dauphiny, Piedmont, and Jura, on the lower alps, in open places; and of Dauria, but not of the Pyrenees, because L. fulvum of Lapeyr. is Sesseli Libanotis, Laserpitium Daucicum, Jacq. hort. vind. 3. t. 58. Ligusticum Seguieri, Vill. dauph. 2. p. 615. exclusive of the synonyms. Furrows of fruit furnished with 3-4 vittae each, and the commissure with 8 vittae. ex Koch, umb. p. 105. Stems usually spotted.


5 l. cynapiifolium (Viv. in litt. 1820. ex D. C. prod. 4. p. 158.) stem terete, branched; leaves decumbent from the petiole being much branched; leaflets multifid: segments linear, acute; involucra and involucres of many leaves; umbel of many rays; umbellules nearly globose, many-flowered. 2. H. Native of Corsica, in the fissures of rocks. Habit almost of Cnidium apioideum or Ligusticum Seguieri, but is easily distinguished from them in the involucrum of many leaves; and from L. fulvum it is distinguished by the stem being hardly striated, in the leaves of involucres being undivided, and in the umbellules being more crowded with flowers. Mature fruit not seen.

Poodle's-parsley-leaved Lovage. Pl. 3 to 4 feet.

6 l. conifolium (D. C. prod. 4. p. 158.) stem terete, branched; leaves supra-decompound, glabrous; leaflets pinnatifid: lobes acutely toothed; involucra and involucres of many leaves, which are as well as the rays of the umbel and upper part of the stem pubeulent. 2. H. Native of Nipaul, on high mountains. Laserpitium conifolium, Wall. miss. Plant tall and very showy. Radical leaves 2 feet long, with trifid petioles. Mericarps with 5 wings, and having many vittae in the furrows.

Hemlock-leaved Lovage. Pl. 4 to 6 feet.

7 l. striatum (D. C. prod. 4. p. 158.) stem terete, branched; leaves binomial; lobes or leaflets entire, acute, rarely cut; involucra and involucres of 5-6 linear, spreadingly-deflexed leaves, which are glabrous as well as the stems and rays of the umbel. 2. H. Native of Nipaul, in the Great Valley, in rice-fields. Laserpitium striatum, Wall. miss., but is referable to the genus Ligusticum from the mericarps being furnished with 5 wings, and in the furrows being furnished with many vittae, &c.

Striated Lovage. Pl. 3 to 4 feet.

8 l. cuneifolium (Guss. pl. rar. p. 130. t. 26.) stem striated, branched; leaves having 3 leaflets; leaflets pinnatifid; segments short, cuneiform, trifid, obtuse, awned, approximate; involucra permanent, of many leaves; fruit ovate, glabrous. 2. H. Native of the kingdom of Naples, in Abbruzzo, in open places of valleys. Allied to L. Pyreneicum.

Wedge-leaffletted Lovage. Pl. 1 to 2 feet.

9 l. discolor (Ledeb. fl. Ross. alt. ill. t. 310. fl. alt. 1. p. 321.) lower leaves ternately binomial; lower leaflets petiolate, ternate: upper ones and segments of the lower ones, oblong, pinnatifid, or cut, deciduous; involucra of many lanceolate-linear, deciduous leaves; involucres of many linear, permanent leaves. 2. H. Native of Altaia, near Ridders, Alexandrowsk, and Belaja at the river Buchtorminsk. L. Peloponnesiacum, Pall. itin. 2. p. 528. Root fusiform, supose, perhaps biennial. Stem solitary, branched, furrowed, glabrous. Leaves pale green above, and pale glaucous beneath. Petioles of radical leaves half a foot long, ternate, and the divisions binomials. Rays of umbel variable in length. Calyx with 5 minute teeth. Petals white. Mericarps with 3 rather winged ribs; having the furrows furnished with 3 vittae, and the commissure with 4-6. It differs from L. cuneifolium of Aiton, in the involucrum being of many leaves.
Two-coloured-leaved Lovage. Pl. 4 to 5 feet.

10 L. Cañidians (Ait. hort. kew. 1. p. 348. ed. 2. vol. 2. p. 714.) leaves supra-decompound; leaflets cuneiform, cut, glabrous; involucre of 2 rather foliaceous leaves; ribs of fruit membranous, glabrous. 2. H. Native country and the rest unknown.


§3. Margin of calyx obsolete. Involuca wanting, or of few leaves.—Silaus species, Koch, in litt. 1828.

11 L. Pyrenæum (Gouan. ill. 14. t. 7. f. 2. exclusive of the syn. of Seguiri) stem branched, striated; leaves supra-decompound, shining; leaflets pinnatifid: segments linear, mucronate, short, divericate; involucrum of a few caducous leaves. 2. H. Native of the Pyrenees, in open places. D. C. fl. fr. 4. p. 309. 


L. Pyrenaicum, Koch, umb. p. 105. Séalel aristatum, Ait. hort. kew. 1. p. 359. This plant is generally confused with L. f. fulvum, but it is perfectly distinct. It is hardly to be distinguished from L. Seguiri, unless in the furrows of the fruit being furnished with many vitæ, and the commissure with 6 to 8 vitæ.


13 L. Corsicum (Gay, in ann. sc. nat. 26. p. 222.) stem nearly simple, few-leaved, striated; leaves tripartite; leaflets palmate-parted; lobules small, linear, cuspidate; involuca wanting; or of 1 leaf; rays of umbel muricatæ; involucels of many linear-subulate, serrulatæ leaves, which are about equal in length to the umbellæ; teeth of calyx obsolete; ribs of fruit scabrous from denticulations. 2. H. Native of Corsica, on the mountains, at the elevation of 5000 or 6000 feet. Vitæ in the lateral furrows 3, in the dorsal 4, also 4 in the commissure. Habit of Mèum mutellinum, from which it differs in the petals being emarginate, not entire.

Corsican Lovage. Pl. ½ to 1 foot.

14 L. Pucédakofèdes (Presl, in herb. Haenke, ex D. C. prod. 4. p. 158.) stem branched, furrowed; leaves decumbent; leaflets linear; umbel opposite the leaves; rays angularly winged; involuca wanting, or of few leaves, which are multifid at the apex; involucels wanting, or of few leaves. 2. H. Native of Chili. The specimen is very like the rest, but varies in the involucels and involucelles being sometimes wanting. Calyx oblong. Petals entire.

Var. β, tunifolium (Presl. l. c.) stem and branches thicker; leaves of involucella multifid; of the involucelles linear, and longer than the umbellæ; fruit ovatæ; mericarps with 5 ribs, furnished with many vitæ.

Var. γ, longifolium (Presl. l. c.) segments of leaves very long. 2. H. Native of Peru. Fruit wanting in the specimen, and therefore it is probably a proper species.

Pucédakofèdes-like Lovage. Pl. 7.

15 L. Fânsil (Bert. herb. ex D. C. prod. 4. p. 669.) plant glabrous, erect, branched; leaves pinnate; leaflets multifid; lobes linear, acute; umbels terminal, or rising from the forks of the branches; involuca wanting, or of 1 many parted leaf; involucelles nearly wanting. 2. H. Native of Chili, in woods and hedges, at Kancagua and Valparaíso, where it is called Pansil. Limb of calyx obsolete. Petals white, emarginate, with an inflexed point. Fruit with winged ribs. Perhaps a species of Pleurospermum.

Pansil Lovage. Pl. 1 to 2 feet?

+ Species not sufficiently known.

16 L. Multifidum (Smith, in Rees’ cyclo. bot. 21. no. 8.) stem branched, filament; leaves triplicate-pinnate; leaflets linear, channelled, acute, decurrent; leaves of involucel 7-8, lanceolate, with membranous margins; fruit ovate-roundish, with winged, curled ribs. 2. H. Native of Siberia. Perhaps a species of Caudium.

Multifid-leaved Lovage. Pl. 3 to 4 feet.

17 L. Divaricatum (Led. ed. hort. dorp. 1824. p. 5.) leaves 4-times pinnate; terminal leaflets 3-parted; lateral ones simple, or bipartite; segments linear, cuspidate; involuca of 1 leaf. 2. H. Native of the Island of Cyprus. Athamánà multifólia, Smith, fl. geoc. t. 247. prod. 1. p. 188. The vitæ being unknown, the species is therefore still obscure. It is probably a species of Caudium.

Cyprus Lovage. Pl. 1 ft.

19 L. obtusifolium (Horn. hort. laf. 1. p. 270.) stem unknown; leaves bipinnate; leaflets cordate, orbicular, sharply toothed; involucra and involucelles of many leaves.—Native of Tangiers. Wildl. enum. p. 312. Fruit unknown.


20 L. Nepalese (D. Don, prod. fl. nep. 185.) stem terete, striated, glabrous, erect, very simple; leaves septicomnate; leaflets ovate, acute, deeply serrated, nerved, cuneated at the base: lower ones tripartite; involucels of many leaves, one half shorter than the umbellæ. 2. H. Native of Nepal, in Gossangistan. Umbels terminal, solitary, of many rays. Calyx 5-toothed. Petals oval-oblong, cuspidate at the apex. Fruit undescribed. Probably a species of Hymenolepis.

Nepalese Lovage. Pl. ½ to 1 foot.


Chervil Lovage. Pl. 1 to 2 feet?

22 L. Aciphylla (Spreng. in Schultes, syst. 6. p. 554.) stem sheathed; leaves fan-shaped, multifid; leaflets linear, stiff, quite entire, nerved, pungent; mericarps with 3 ribs. 2. H. Native of New Zealand. Aciphylla squarrosa, Forst. gen. p. 136. t. 68. Laserpitium aciphylla, Lin. fil. suppl. 181. Probably a species of Caudium, or a proper genus.

Pointed-leaved Lovage. Pl. 1 foot.

23 L. ? Pusíum (H. B. et Kunth, nov. gen. amer. 5. p. 19.) stem branched, terete, striated, filiform; leaflets ternately decompound, rather hairy beneath; leaflets sessile, ovate-oblong, acute, sharply crenate-serrate, cuneated at the base. 2. H. Native of New Spain, in humid places. Flowers white. Fruit un-
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known. According to Kunth, this is perhaps a species of Helicoleum.

doubtful Lovage. Pl. 1 foot.

24 L. Græcum (D. C. prod. 4. p. 159.) stem erect, branched; leaves all bipinnate. 2 H. Native of Greece. Ligusticum Græcum folio-api, Tourn. cor. p. 23. According to the fruit, which is preserved in the herbarium of the museum of Paris, it is a true species of Ligusticum. Sium Græcum, Lour, and S. Græcum, Lin. are very different plants from this.

Greek Lovage. Pl. 7.

25 L. Capeneæ (D. C. prod. 4. p. 159.) stem erect, branched; leaves bipinnate; leaflets short, thick; involucra and involucels of 3–5 leaves; fruit ovate; calyx obsolete. 2 H. Native of the Cape of Good Hope. Athamánæ Capenæis, Born. f. cap. p. 7. In Burmann's herbarium there are specimens of several plants fastened on the same sheet of paper, under the name of Athamánæ Capenæis, therefore the one which he meant to go under this name is doubtful.

Cape Lovage. Pl. 2 feet.

Cult. See Athamánæ, p. 316. for culture and propagation.


Lin. Syst. Pentádrâvia, Dígnânia. Margin of calyx obsolete. Petals obovate-oblong, narrowed into an inflexed point, entire, or rather emarginate, appendiculate at the base, or sessile and truncate. Transverse section of fruit nearly terete. Mericarps with 5 sharp, rather winged equal ribs: lateral ribs marginalizing; vitae many in each furrow, and so close together as to appear like a single broad one; and 4–6 in the commissure. Seed somewhat semi-terete.—Glabrous, perennial herbs. Leaves cut into many parts; leaflets linear. Involutâra wanting, or of few leaves; involucels of many leaves. Flowers cream-coloured or greenish. This genus is very nearly allied to Ligusticum.

I S. Frâtesis (Bess. enum. pl. vob. p. 43. no. 1367.) stem angular; leaves supra-decompound; leaflets pinnate-parted: segments rather remote, lanceolate, nerved, a little channeled, cuspidate; involucra obsolete, or of 1–2 leaves. 2 H. Native of humid meadows, from Europe to Tauria; and Siberia; in Britain, in rather moist meadows and pastures. Peucedánæs Silius, S. Linn. spec. 354. Smith, engl. bot. 2142. Mart. rust. t. 128. Jacq. auct. t. 15. Hayne, arz. gev. t. 5. t. 5. Cnidium Silius, Spreng. umb. prod. 40. Schultes, syst. 6. p. 416. Sium Silius, Roth, fl. germ. 1. p. 129. Sâseli pratânse, Riv. pent. 1. t. 58. Crantz, austr. 3. p. 209. t. 6. f. 1. Sâséli selinoïdes, Jacq. enum. vind. 227. Ligusticum Silius, Duby, in D. C. bot. gall. 1. p. 230.—Mor. hist. 3. sect. 9. t. 6. f. 10.—Lob. icon. 738. f. 5.—Petr. herb. brit. t. 28. f. 5. Root spindle-shaped. Herb smooth, dark green. Leaves bipinnate; leaflets elliptic-lanceolate, entire: either undivided or separated almost to the base into 2 or 3 segments of the same shape and magnitude. Umbels of several unequal rays. Involutâra of from 1-3 linear, white-edged leaves, but most frequently none at all. Involute of several linear leaves. Flowers yellow or greenish white. Fruit roundish-ovate. The whole plant, being fetid, when bruised, is supposed in some parts of Norfolk to give a bad flavour to milk and butter; but cattle certainly do not eat it; except accidentally, or in small quantities, sufficient perhaps to have the effect in question. Where this herb abounds in pastures, it may be found partially cropped, though generally left almost entire.


3 S. alpeâstri (Bess. enum. pl. vob. p. 43. no. 1405.) stem striated; leaves bipinnate or tripinnate, with the ramifications spreading; leaflets pinnate; lower segments 3 or 4-parted: upper ones entire: lobes all entire, linear, cuspidate; involucra almost wanting; leaves of involucels setaceous; fruit ovate-oblong. 2 H. Native of the south of Podolia, in open fields; and of Altai, near Schulbins, at the river Irtysh. Peucedánæs alpêstre, Spreng. umb. spec. p. 56. exclusive of the synonymes. Peuced. Silius, Biéb. fl. taur. 1. p. 215. Silius Besséri, D. C. prod. 4. p. 161. Flowers yellowish. Differ from S. tenueflórus in the fruit being shorter and thicker, nearly ovate, not cylindrical. Compare it with Peucedánæs alpêstre, Lin. which is not sufficiently known.

Alpine Pepper-saxifrage. Fl. Jul. Aug. Cite. 1739. Pl. 1 to 2 ft. 4 S. longiflórum (Led. fl. ross. alt. 1. p. 323.) leaves supra-decompound, with the ramifications rather divaricate; leaflets somewhat tripartite: segments lanceolate or linear, cuspidate; involucra almost wanting; leaves of involucels setaceous. 2 H. Native of Siberia, in meadows, about the rivers Irtysh and Buchtorminsk. Ligusticum longiflórum, Willd. spec. 1. p. 1428. Athamánæ denudâta, Fisch. Angélica Fischéri, Spreng. in Schultes, syst. 6. p. 605. Cithrimum Mediterâneum, Biéb. fl. taur. 3. p. 215. Ligusticum Fischéri, Link, enum. 1. p. 276. Cnidium Fischéri, Spreng. syst. 1. p. 888.—Gmel. sib. 1. p. 188. no. 4. t. 41. The Altaian plant differs from the one collected on the banks of the Volga, in the leaves being more profoundly divided, nearly ternate; in the segments being linear, not 3-5-parted; in the lobes being lanceolate; and in the involucre being usually of 1 leaf. Furrows of fruit furnished with 1 vitoe each, but sometimes the outer ones have 2.

As. ß. diâricâtum: segments of leaves longer. 2 H. Cnâdium divaricâtum, Led. ind. sem. hort. dorp.


5 S. carvâfoârus (Meyer, planz. t. 125.) root fusiform; stem furrowed and striated, branched; leaves bipinnate; leaflets of the radical leaves divaricate: of the cauline linear, divaricate; involucra and involucels composed of short setaceous leaves; rays of umbel very unequal. 2 H. Native of Caucasus, on the higher mountains. Bünium peucedanoides, Biéb. fl. taur. 1. p. 208. suppl. 211. D. C. prod. 4. p. 116. Sium peucedanoides, Spreng. umb. spec. 41. no. 5. Peucedânæs carvâfoâra, Biéb. Petals pale yellow. Vitae solitary in the furrows, according to Besser: but there are 2–3 vitae in nearly all the furrows, rarely solitary.


6 S. ? peucedânoâdes (D. C. prod. 4. p. 161.) root turripiniform; stem striated, fusiform, somewhat trichotomous at the apex; leaves nearly ternate; segments linear, acute, entire, with revolute margins; involucra of 1 leaf; involucels wanting; umbels of 4–5 rays; umbellules 8–10-flowered. ß. H. Native of South America, on temperate mountains about Popayan. Cnidiuem peucedanoides, H. B. et Kunth, nov. gen. amn. 5. p.
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15. Paeúcinum júncum, Wild. n. s. in Schultes, syst. 6. p. 576. From the yellow entire petals, it comes nearer Siláus than Cúdnám, but the involucre is wanting. Sulphur-wort-like Pepper-saxifrage. Pl. 2 feet.

Cult. See Athamánta, p. 116. for culture and propagation.


Lin. syst. Pentántida, Monogónia. Teeth of calyx 5, ovate-lanceolate, acute (f. 56. A. b.). Petals entire, elliptic, acute at the base and apex (f. 56. A. d.). Transverse section of fruit nearly terete; mericarps with 5 prominent, equal ribs: lateral ribs margining. Vitte in each furrow, and 2 in the commissure.—A smooth perennial herb. Radical leaves decompound; leaflets linear-lanceolate. Invocura of 5-6 unequal leaves; involucres of 5-6 linear-lanceolate leaves. Flowers white. This genus is intermediate between Ménum and Ligústicum; it differs from the first in the calyx being evidently 5-toothed, and from the last in the petals being entire.


Cult. See Athamánta, p. 116. for culture and propagation.


Lin. syst. Pentántida, Digýnia. Margin of calyx obsolete. Petals entire, elliptic, acute at the base and apex. Transverse section of fruit nearly terete. Mericarps with 5 prominent, acutely keeled, equal ribs: lateral ribs margining; vitte many in the furrows, and 6-8 in the commissure. Seed nearly semi-terete.—Glabrous, perennial herbs. Stems nearly simple, terete, striated. Leaves supra-decompound, or pinnate; leaflets multifid: segments slender, linear, acute. Invocura almost wanting; involucres of many leaves. Flowers white or purple. This genus is distinguished from Ligústicum in the calyx being without teeth and in the petals being entire.

1 M. Athamánticum (Jacq. fl. austr. t. 303.) leaves supra-decompound, divided into numerous, fine, setaceous leaflets or segments; stems leafy, not much branched; invocula of a few linear leaves, which are often 3-5-lobed at the apex, but often wanting altogether; involucres of more numerous, entire, or cut leaves, somewhat dimidiate. 2. H. Native of Europe, in mountain pastures; plentiful on the mountains in the north of England; and abundant in the Highlands of Scotland.

2 M. Wallróthia (Spreng. fl. fr. 4. p. 310. Crantz, auct. lsec. 3. p. 92. Hayne arz. gew. 7. t. 12. Athúsa Ménum, Lin. syst. veg. 287. Dáucus Créticus, Trag. hist. 445. f. 1.—Moris. hist. 3. p. 270. sect. 9. t. 2. f. 2. Roots tapering. Stems hollow. Petals sometimes slightly obcordate. The whole plant, but especially the root, is highly aromatic, with a hot biting flavour like lovage, which it communicates to milk and butter, from the cows feeding upon its herbage in spring. A strong infusion of this herb is said to give cheese the taste and odour of the Swiss chaszipage. The seeds, as well as the roots are recommended as carminatives and stomachics. The plant is called Spignel, Meu or Baud-money in England, and Highland-miken in Scotland.

Athamánta-like or Common Bald-money. Fl. May, June. Britain. Pl. 1 to 2 feet.


Mutellina or the Swiss Bald-money. Fl. June, Aug. Clt. 1774. Pl. 2 to 1 foot.

Cult. See Athamánta, p. 116. for culture and propagation.


Lin. syst. Pentántida, Digýnia. Margin of calyx obsolete. Petals obovate, more or less emarginate, with a broad inflexed point. Fruit oval, rather compressed; mericarps with 5-6, wing-formed ribs, which are contiguous at the base, obtuse: outer ones marginal. Vitte none. Carpophore bipartite. Seed nearly semi-terete, easily separated from the covering. —Perennial mountain herbs. Leaves all radical, pinnate; leaflets bipinnatifid: lobes linear. Stems naked, simple. Umbels compound. Invocula of few leaves. Flowers equal, fertile. This genus differs from Ménum in the petals being emarginate, not entire; in the furrows of the fruit being without vitte, and in the fruit being rather bladdery.


2 G. píreínea'ca (Gaudin, l. c. in a note) leaves of involucra 1-5, undivided. 2. H. Native of the higher Pyrenees. Pinéllína dioica, 3. Lapey. abr. p. 166. Séseli nánum, L. Dufour, in litt. Séseli montánnum, var. Benth. cat. It differs from the first in its more stiff, branched habit, in its glossy colour, in its 1-leafed stem, in the leaflets and segments being lanceolate, in the ribs of the mericarps being less elevated. Plant small, glabrous. Root thick.

Píreínea Gaya. Pl. 1. foot.

Cult. These plants should be grown in pots, in a mixture of peat and loam, and placed among other alpine plants. They are increased by seeds.
XXIV. CONIOSELENUM

(a name evidently composed of Conium and Selinum). Fisch. in Hoffm. umb. ed. 2. p. 185. 

rit. f. 5. Koch, diss. ined. D C. prod. 4, p. 163.

LIN. SYST. Pentändria. Digynia. Margin of calyx obsolete. Petals obcordate or obovate, with an inf lexed point. Styles at length diverging, reflexed. Fruit rather compressed from the back, or convex; mericarps with 5 winged ribs; the lateral ribs twice the breadth of the others, and marginal; vittae unequal, 3 in the lateral furrows, but usually 2 in the dorsal ones, and 4-8 in the commissure. Carophore bipartite. Seed flat on one side.—Glabrous, biennial herbs. Stems branched, fistular. Leaves bipinnate; leaflets pinnate-parted; segments oblong-linear. Umbels terminal, of many rays. Involuta wanting, or of few leaves. Involute and 5-7 linear-sululate leaves, which are about equal in length to the umbellules, or longer. This is an ambiguous genus, intermediate between the tribe Paeideneae and Sesiineae; with the first it agrees in the mericarps being winged, and with the last in the mericarps being convex on the back. Flowers white.

1 C. Fiscneri (Wimm. et Grab, ex fl. 1828. p. 215.). 

H. Native of Siberia, Tartary, Ingrina, Silesia, and Savoy, on the mountains: North America between the Coppermine and Mackenzie rivers; Labrador; Stratais of De Foes, on the northwest coast; Kotschubé's Sound. C. Tartaricum, Hoffm. l. c. Perhaps C. Ingricium or C. neglectum. Fischer in litt. is not distinct from this. Perhaps Ligusticum Gmelini, Cham. et Schlecht. in Linnaea, 1. p. 391. and Gmel. sb. 1. p. 195. t. 44. appertains also to this plant. Perhaps all these different names belong to different species, or probably to the same, but they are so much confused that it is impossible to extricate them.

Fischer's Conioselium. Pl. 1 to 2 feet.

Cult. This plant is only to be increased by seed, which should be sown in the open ground early in spring. A light soil suits it best.

LXXV. CRITTHUM


LIN. SYST. Pentändria. Digynia. Margin of calyx obsolete. Petals roundish, entire, involute, ending in an obovate segment. Transverse section of fruit nearly terete; mericarps with 5 elevated, sharp, rather winged ribs: lateral ribs a little broader than the rest, and marginating; pericarp spongy, with large cells. Seed semi-terete, constituting a free nucleus, which is covered with copious vitae in every part.—A suffruticose, glabrous, fleshy herb. Petioles sheathing at the base. Leaves bipinnate; leaflets oblong-linear. Umbels compound. Involuta and involucels of many leaves. Flowers white. This genus differs from all others in the present tribe as the genus Archangelica does from the rest of the genera in tribe Angelicina, in the seed being a free nucleus, covered with copious vitae.

1 C. MARITIMUM (Lin. spec. 354.). 2. H. Native of rocky sea-shores and cliffs; as along the Black Sea, in Tauria; and along the Mediterranean Sea; and of Europe along the shores of the Western Ocean from Spain to Britain; and of the Canary Islands; and in Britain, on the rocky sea-shore and cliffs. Smith, engl. bot. 819. Jacq. hort. vind. 2. t. 87. Câehrys maritima, Spreng. in Schultz, syst. 6. p. 442. Crêthamus, Cord. hist. 201. f. 1. Sâmpire, Petiv. hort. brit. t. 24. f. 8.—Lob. icon. 392. f. 1.—Bauh. hist. 3. p. 2. 194. f. 1. Moris. hist. 3. p. 289. sect. 9. t. 7. f. 1. Root branched, creeping extensively. Herb greenish-glaucous, salt, and pungently aromatic in flavour. Stems ascending. Leaves biternate; leaflets uniform, lanceolate, tapering at the base. Leaves of involucra and involucels ovate, acute, spreading, rather short. Flowers white, with yellowish anthers. Samphire is called Perce-pierre and Saint-pierre of which there English name apprises to be a corruption) in French: MeriFeue in German; and Finschh marino in Italian. The herb makes an old-fashioned English pickle, as those known who read Shakspeare's King Lear. It is sold in the London shops; but there are many plants preferred for the same purpose, as Salviaea herbaceae and Inula crithmifolius, c.e., and is a frequent addition in salads. In taste it is crisp and aromatic, and constitutes a light and wholesome condiment. It is generally gathered in places where it is found wild; and the allusion to the practice by Shakspeare, in his description of Dover Cliffs, is well known. The plant is also used medicinally.

Var. B. Canarívus (Cav. anal. scienc. nat. 1801. vol. 3. p. 569.) leaves more shewing (ex Cav.), but the difference between the Canary Island plant and the European is hardly discernible. Sea-side or Common Samphire. Fl. Aug. Brit. Pl. 1 ft. Cult. Samphire is propagated by parting the roots, or by sowing the seeds in April; but is rather difficult of cultivation. Marshall says it likes a cool situation; but yet prefers a sandy or a gravelly soil, and plenty of water. Some, he adds, have found it to do best in pots, set for the morning sun only.

J. Braddock placed it in a sheltered dry situation, screened from the morning sun, protected it by litter during winter, and in spring sprinkled the soil with a little powdered barilla. This I do, he says to furnish the plant with a supply of soda, since, in its native place of growth, it possesses the power of decomposing sea water, from which it takes the fossil alkalii, and rejects the muriatic acid. With this treatment it has continued to flourish at Thames Ditton for some years, producing an ample supply of shoots, which are cut twice in the season, for pickling or to be used in salads.

Tribe VI.

ANGELICÆÆ (this tribe contains plants agreeing in important characters with the genus Angelica) or Orthospermæ paucijugæae tetrâpetæ, Koch, umb. p. 98. D. C. prod. 4. p. 164. Fruit compressed from the back, girded by a double dilated winged margin, from the raphe being central or nearly so, hence the fruit is furnished with 2 wings on both sides. Mericarps with 5 ribs: dorsal 3 filiform or winged: lateral 2 always expanded into wings, and always broader than the dorsal ones, even if they also should be winged. Seeds rather convex on the back, and flattish in front.


odour of this plant is strong and peculiar; its taste is warm and aromatic. It abounds with a yellowish, gummy, resinous juice, very much resembling Opipanax. Its qualities are supposed to be similar to those of Angelica and Masterwort in expelling flatulences, and exciting perspiration; therefore chiefly used in hysterical disorders and uterine obstructions. The leaves, eaten as salad, are accounted as emmenagogue. The root, which is not so ungrateful as the leaves, is said to possess similar virtues, and may be employed in powder.Official or Common Lovage. Fl. June, July. Ct. 1596. Pl. 4 to 6 feet.

Cult. This plant will grow in any soil; and is easily increased by dividing at the root.


Lin. syst. Pentandra. Digynia. Calyx with 5 broad teeth. Petals unguiculate, obovate, marginate, with an inflexed point. Fruit compressed from the back, furnished with 2 wings on both sides from the raphae being central; mericarps with 5 membranous, winged ribs; wings of the lateral ribs twice the breadth of the others; vitta 1 in each furrow, but there are often 2 in the outer furrows, and always 2 in the commissure. Carphophore bipartite.—Glabrous perianal herbs. Leaves ternately decimundate or tripinnate; leaflets pinnatifid. Umbels compound. Involuta of few leaves; involucels of many leaves. Flowers white.


2 S. CANDOLLI (D. C. prod. 4. p. 165.) stem terete; rays of umbel pubescent; petals obcordate, having the middle nerve crested above. H. Native of Nipal, on the mountains at Kamaon. Angelica? Candollii, Wall. mas. Leaves ternately decimundate; leaflets slender, multifid. Umbels terminal, of many rays. Involuta of many or of few leaves, or wanting, or soon falling off. Petals nearly as in the genus Pycholéa. Fruit as in S. carvifolia, but larger, and more ovate. Seed furrowed on the back.

De Candolle's Milk-parsley. Pl. 2 feet.

3 S. terenthynnum (Hook. fl. bor. amer. 1. p. 366. t. 95.) plant glabrous in every part; leaves tripinnate, stiff, glaucous; segments pinnatifid : lobes short, linear, acute; peduncles elongated; involuca wanting; leaves of involucels linear, short; mericarps with 5 broad, undulating ribs. H. Native of the north-west coast of America, common on the sandy grounds of Wallawallah river. Root fusiform. Rays of umbel very unequal. Fruit rather large, ovate, compressed. The genus to which this plant belongs is truly doubtful. The fruit not corresponding well with any described genus. Turpentine Milk-parsley. Pl. 1ft foot.

4 S. STELLATUM (D. Don, prod. fl. nep. p. 185.) leaves pin-
UMBELLIFERÆ. LXXXIX. Angelica. XC. Archangelica.


3 A. *sylvestris* (Linn. spec. 361.) stem polished, striated, often purple, with wide spreading branches, pubescent at the apex, as well as the peduncles; leaves bipinnate or tripartite, rather glaucous; leaflets ovate or ovate-lanceolate, acute, unequally and sharply serrated, never decurrent at the base; involucre of 1-2 leaves. 2. H. Native of Europe, Siberia, and Caucasus, in watery places, alder carps, and along the banks of rivers, common; plentiful in like situations in Britain. Smith, engl. bot. t. 1128. Woodw. suppl. t. 265. Ger. encyc. 999. f. 1. Dodon. pemp. 318. f. 1. Camer. epity. 900. f. 1. Lob. icon. 699. Angelica palustris, Riv. pent. t. 17. Hayne, arz. gew. 7. t. 9. Water Angelica, Petiv. herb. brit. t. 24. t. 10. Imperatòria sylvéstris, D. C. fl. fr. 4. p. 286. Selinum sylvastre, Crantz, auct. 177. Selinum angelica, Roth. germ. 1. p. 133. Selinum pubescéns, Moench, meth. p. 80. Umbels convex, with numerous general and partial downy rays. Flowers white, but more generally flesh-coloured. Points of petals erect. Vittae in the commissure superficial. The flavour is more bitter, and less grateful than the *Archenangelica*, but the virtues of both are similar. The herb dyes a good yellow.


4 A. *lucida* (Linn. spec. 360.) stem terete, glabrous; leaves bipinnate; leaflets equal, ovate, deeply serrated; sheaths dilated; involucre and involucels of 3 leaves each. 2. H. Native of North America, from Canada to Pennsylvania, in moist shady places. Pursh, fl. amer. sept. 1. p. 193. Jaqc. hort. vind. 3. t. 24.—Moris, hist. sect. 9. t. 3. f. 8. Ang. lobata, Watt. car. p. 116. f. ex Torr. The petals are said to be elliptic, pale green, with an inflexed point. By Jaquelin the flowers are said to be whitish, or of a pale yellow-colour.


**Sect. II. Psedangélica** (this section is supposed to contain false species of the genus: hence the name). D. C. prod. 4. p. 168.—Angélica species, Spreng. Koch.—Selinum species, Guan. —Sélesi species, Lin. Petals elliptic, acuminated or mucronated. The fruit is like that of the last section, but differs in there being usually 4 vittae in the commissure. Rays of umbels very unequal, the central ones very short.


† *Species not sufficiently known.*

7 A. *integromilfolia* (Walt. car. p. 115.) leaflets entire, petiolate. 2. H. Native of Carolina. The rest unknown.

*Entire-leafflet* Angelica. Pl.? 8 A. *bracteata* ( Roxb. in Beats, trav. voy. append. p. 297.) stem fistular; leaves unequaly pinnate; leaflets rather cordate, 3-7-nerved, finely jagged, serrated; bracteas or sheaths broad, nearly orbiculate at the base of the petioles, and between the segments; involucre and involucels of 6-10 broad lanceolate leaves each. 2. H. Native of the Island of St. Helena, where it is called by the inhabitants *common angelica*. Petals white, oval-oblong, incurved. Umbelles glabrous. Fruit unknown. Perhaps a species of Archangelica.

Bracteate Angelica. Pl. 3 to 4 feet?

Cult. Any soil will suit the species of Archangelica, and they are easily increased by seeds.


**LIN. SYST. Pentândria, Digynia.** Margin of calyx with 5 short teeth. Petals elliptic, entire, acuminated, with an incurved point. Fruit rather compressed from the back, furnished with 2 wings on each side, from the raphe being nearly central. Mericarps with 5 thickish keeled ribs, the 5 dorsal ribs elevated, and the 2 lateral ones dilated into wings, which are twice the breadth of the others. Seed not adhering to its tegumen, but distinct from it, and covered by copious vittae all over. Carpophore bipartite.—Perennial or biennial herbs. Leaves pinnate; leaflets broadly ovate, acute, coarsely toothed: terminal one lobed. Petioles large, sheathing, and rather bladery, involucels wanting or nearly so; involucels dilate, of many leaves. Flowers white or greenish.

1 A. *officinalis* (Hoffm. and Koch, l. c.) stem polished, striated, a little glaucous, branched in the upper part; leaves ternate, then pinnate; leaflets ovate-lanceolate or subcordate, cut, and sharply serrated, partly decurrent: the odd one deeply 3-lobed; petioles dilated and tumid at the base; involucre of a very few linear leaves, or wanting altogether; leaves of involucre linear-lanceolate. 2. H. Native of Europe, on mountain sides, particularly in Lapland, Sweden, Norway, Germany, Carpathian mountains; and from Unalaschka to the Bay of Eschhydroz; and now cultivated everywhere for the sake of its stalks. In Britain in watery places, rare, apparently a naturalized plant: as about the Tower of London, and on the banks of ditches frequent; in marshes among reeds by the side of the
UMBELLIFERÆ. XC. ARCHANGELICA. XCI. OPOPANAX.

Thames, between Woolwich and Plumstead, very abundantly; in the county of Durham; and at Broadmere, about 7 miles north-west from Birmingham. Angélica Archangelica, Lin. spec. 360. Oed. fl. dan. t. 206. Nees, off. pl. 9. t. 14. Hayn. arz. gew. t. 8. Smith, engl. bot. 2561. Woodv. med. bot. t. 60. Angélica officinalis, Muench, mth. p. 81. Angel. sativa, Mill. dict. no. 1. Riv. pent. t. 15. Petiv. herb. brit. t. 24. f. 9. Camerae, epist. 899. f. 1.—Ger. emac. 1000. Flowers greenish. The garden angélica was formerly cultivated on account of its leaf-stalks, which were blanched, and eaten as celery; now they are used only when candied, being, when so prepared, acceptable to most people, and are not so powerfully aromatic; the young and tender stalks are for this purpose collected in May. Sometimes also the seeds and leaves are used in medicinal preparations. The root, which is the most efficacious part, is used in the aromatic tincture. Of the anti-pestential virtues of the root, those who wish to be informed will find amusement at least in old Gerarde, p. 1000.

The plant delights in moist situations, or the bank of running water; but will grow freely in any soil or exposure. The plants are raised from seed, and for a bed 4½ feet by 6, sown in drills a foot apart, to be transplanted; half an ounce of seed will be requisite. "Sow in August, or as soon as the seed is ripe, as the plants will come up earlier and stronger than from sowing in the spring. When the plants are advanced from 4 to 6 inches high, transplant them into rows 2 feet apart. They will soon strike root, and advance quickly in strong growth. In the second year these strong erect branchy stalks will be several feet high, producing large umbels of flowers and seed, ripening in autumn, which, as well as the leaves of the plant, are used in medicine. But for candying, the young shoots of the stem and stalks of the leaves are the useful parts; being cut while green and tender in May and June, they are made by the confectioners into the sweet-meat called angélica. In the second year, if seed is not wanted, cut the plants down in May, and the stock will send out side shoots; by repeating this practice every year, the same plant may be long continued."—Abercrombic.

Officinal or Garden-angelica. Fl. June, Sept. Britain. Pl. 4 to 6 feet.

2 A. ATROPURPUREA (Hoffm. umb. 169.) stem polished, purpl'e, with a glaucous bloom, branched at the top; leaves ternate, then pinnate; leaflets ovate, acute, deeply serrated, and somewhat lobed; the terminal ones confluent; petioles dilated, and tumid at the mid; branches and umbels pubescent; involucra wanting; the involucres of many narrow leaves. 3 H. Native from Canada to Virginia, in moist meadows. Angélica atropurpurea, Lin. spec. 360. Lam. dict. 1. p. 173. T orr. fl. un. st. 1. p. 316. Angélica triquinita, Bigel. fl. boust. p. 68. ex Torr. —Corn. can. 199. with a bad fig.—Moris, hist. sect. 9. t. 5. f. 9. bad. Petals rusty purplish or white. The plant may be used in the same way as the A. officinalis.


3 A. DECURRENS (Lc'd. fl. ross. alt. ill. t. 166. fl. alt. 1. p. 316.) stem striated, with a glaucous bloom, furnished with leaves and axillary branches as follows; leaves pinnate or bipinnate: lower leaflets pinnate, upper ones pinnatifid: segments oblone, or ovate-oblone, acuminated, recurved; odd one 3-lobed; involucra of many narrow leaves. 3 H. Native of Altai, everywhere on the margin of rivulets. Flowers like those of A. officinalis, but varying more to yellow. Habit of A. officinalis, but differs in the leaves being much acuminated, those on the secondary branches of the petiole running down a great way, and serrated their whole length. Fruit exhalent a heavy smell when rubbed.

Decurrent-leaved Archangelica. Fl. year. Pl. 6 to 8 ft.
awned; floriferous branches alternate; leaves of involucre and involucels ovate-lanceolate, short; fruit oblong-elliptic, with acute prominent ribs. 2. H. Native of Sicily and the kingdom of Naples, on dry calcareous hills. F. rigida, Tenore, fl. neap. append. 4. p. 15. exclusive of the synonyms. Bûbon rigidus, Ucria ex Guss.—Bocc. mus. 2. t. 76.

*Geniculate-leaved Giant-fennel.* Pl. 2 to 3 feet.

5 F. thyrsiflora (Sibth. and Smith, fl. græc. t. 280. prod. no. 664.) stem angular and furrowed at the top; floriferous branches terminal, aggregate, compound; leaves supra-decompound; leaflets linear, elongated, roughish; leaves of involucre 4-6, linear-lanceolate. 2. H. Native of Candia, on rocks. Ferulago thyrsiflora, Koch, umb. p. 98. Vitae above 30 in the commissure, according to Koch, but in a specimen examined there are only from 20 to 25.


6 F. sulcata (Desf. atl. 1. p. 352. t. 67.) stem angular and furrowed; leaves supra-decompound; leaflets pinnatifid: lobes linear, acuminate; leaves of involucre many, oblong-linear, reflexed. 2. H. Native of Naples, Sicily, Mauritania, and Portugal, on hills. F. nodiflora, Spreng. umb. spec. p. 84. but the figure of F. nodiflora in fl. græc. is destitute of involucre, and therefore does not belong to this plant; therefore the plant of Linneas is truly doubtful. F. Barrelieri, Tenore, in herb. Merat. Ferulago nodiflora, Koch, umb. p. 98. Ligusticum luteum, Poir. voy. barb. 2. p. 136. ex Poir. suppl. 3. p. 481. Peucedanum Lusitanicum and rupéstre, Wildl. herb. ex Spreng. syst. 1. p. 914. Vitae 60 in the commissure, ex Koch.


7 F. Stricata (Spreng. in Schultes, syst. 6. p. 592.) stem straight, stiff, furrowed; leaves ternately supra-decompound, straight; leaflets ternate, triquetrous, filiform, glabrous; leaves of involucre ovate-oblong. 2. G. Native of the Cape of Good Hope.


**Sect. II. Ferula KIA (an alteration from the generic name).** D. C. prod. 4. p. 172.—Ferula, Koch, umb. p. 96. Vitae 3 in each of the dorsal furrows, and 4 in the commissure. Involucre wanting. Stems terete.

* Stem leafy.

8 F. Communis (Lin. spec. p. 355.) stem terete, branched; leaves supra-decompound, green; leaflets linear-setaceous, filcid; central umbel nearly sessile; lateral ones male, pedunculate; involucre wanting; sheaths of upper leaves very large. 2. H. Native on hills in the region of the Mediterranean, from Portugal to Greece, and of Mauritania. D. C. fl. fr. 3. p. 343. F. nodiflora, Lin. spec. 356? Smith, fl. græc. t. 279.—Dodon. pempt. p. 321. f. 1. Lob. icon. t. 778. f. 2.—F. fémina, Plum. Tourn. Moris. umb. 35. t. 2. hist. 3. p. 309. sect. 9. t. 15. f. 3. Lateral umbels usually opposite, rising from the axils of the sheathing petioles under the central umbel. Fruit 5 lines long, and 3 lines broad. There issues from the stem when cut a yellowish fetid juice, which hardens on the surface of the wound. The dry dead stem is full of white pith, which easily takes fire, and the Sicilians use it for tinder. Hence the fable of Prometheus. In Apulia, where the plant grows in great plenty, it is grateful to buffaloes, which form the chief part of the subsistence of many farmers there.

*Common Giant-fennel.* Fl. June, July. Clt. 1597. Pl. 8 to 12 feet.
9 F. glauca (Lin. spec. p. 588.) stem terete, branched; leaves supra-decompound, glaucous beneath; leaflets linear, elongated, flat; involucro wanting; pétioles of upper leaves dilated; central umbel pedunculate; lateral ones male only, on longer peduncles. \( \frac{3}{2} \). H. Native of the south of France, at Merival, near Montpelier in the spot mentioned by Lobel; also of Provence, Italy, Sicily, Greece, &c. F. foliis glauco, Bauh. hist. 3. p. 2. p. 45. with a figure. 

\[ \text{Férula et Ferulágo}, \] 

Lob. adv. p. 348. F. communis, Goun. hort. monsp. p. 140. F. glauca, D. C. fl. fr. suppl. p. 514. Schultes, syst. 6. p. 588. Leaves of involucro many, linear-setaceous, caducous, ex Spreng. but in the plants examined there has been no involucro seen; therefore Sprengel's plant is probably distinct from this.

\[ \text{Glaucous Giant-fennel. Fl. June, July.} \] 

\[ \text{Clit. 15 to 16. P. 6 to 8 feet.} \]

10 F. rigidula (D. C. prod. 4. p. 172.) stem terete, branchged, and is, as well as the petioles, quite glabrous; leaves pinnate; leaflets pinnatifid: lobes short, few, acute, channelled, stiffish, hardly puberulous; umbels rather panicled, without any involucro. \( \frac{3}{2} \). H. Native of Persia, on rocks among the mountains about Seidkhodz. Very like F. Clapiace in the in- florescence and fruit, but differs in the primary pairs of leaves being an inch and a half distance from each other, and the secondary pairs are more elongate; leaflets fewer; lobes fewer, stiffer, and rather fleshy. Sheaths larger, and rather glaucous.

\[ \text{Stiffish Giant-fennel. Fl. 3 feet.} \]

11 F. Caßnica (Bieb. fl. taur. suppl. no. 551.) stem terete, branched; leaves triplicate pinnate; leaflets pinnatifid, soft, approximate; segments very short; umbels somewhat panicled; the peduncles of the lateral umbels furnish each with a subulate ligula at the base; involucro none. \( \frac{3}{2} \). H. Native of arid fields from Odessa to Sarepta; and of Caucasus, near Kislian. Spreng. umb. spec. p. 81. F. carchroides, Pisch. in litt. 1822. There are varieties of this with either glabrous or pubescent leaves, according to Bieb. The habit is like that of Cacchodes Odontálgaica. Sheaths cuscullate; upper ones almost destitute of leaves. Fruit oval, glabrous, 3 lines long, \( \frac{1}{2} \) line broad. Commissure furnished with 4 vitae. Umbel-bearing branches alternate; lower ones often opposite, and upper ones in whorles.

Perhaps a species of Pheuedanum, according to Besser.

\[ \text{Caspián Giant-fennel. Fl. June, July.} \] 

\[ \text{Clit. 1819. P. 2 to 3 feet.} \]

12 F. orientalis (Lin. spec. p. 356.) stem terete, branched; leaves 5 times pinnate; leaflets multifid, setaceous, apparently puberulous when examined by a lens; sheaths large, cucurbit: involucro wanting. \( \frac{3}{2} \). H. Native of Asia Minor, Greece, Caucasus on Mount Beschbrakm, and perhaps of Numidia. Lam. dict. 2. p. 455. Spreng. umb. spec. p. 89. Tourn. trav. 2. t. 379. Branches of root thick. Leaves a foot and a half long. Upper sheaths 3 inches long, and an inch broad. Sprengel refers to this the Fashook of Jackson's account of Morocco, t. 7. Stevens says it is the same as F. puecedanifólia, Willd. herb., but Pallas's figure, which is cited for it, is very different from our plant.

\[ \text{Eastern Giant-fennel. Fl. July, Aug.} \] 

\[ \text{Clit. 1759. P. 3 to 4 feet.} \]

13 F. Persica (Willd. spec. 1. p. 1413.) stem terete, glauco; leaves ternately supra-decompound; leaflets rather remote or decurrently pinnate; segments linear-lanceolate, dilated, and cut at the apex; stipular umbel sessile; involucro and involucres wanting. \( \frac{3}{2} \). H. Native of Persia; and of Caucasus, on hills near Baku. Andr. bot. reg. 528. Sims. bot. mag. 2096. F. assafoetida, Mart. in Mill. dict. no. 9. exclusive of the synonymy of Kørsø. Wood. med. bot. 22. t. 8. Planch. icon. t. 203. Assafetida, Hoppe, in phil. trans. 1785. p. 36. t. 3. and 4. The plant smells very strong of assafetida, and there is a yellow gummy juice very like the flows from the plant, which in all probability has the same virtues as that of the true assafetida, F. asafoetida. Plant of a yellowish hue.

\[ \text{Persian Assafetida. Fl. June, July.} \] 

\[ \text{Clit. 1783. P. 3 to 6 ft.} \]

14 F. Tingtona (Lin. spec. p. 355.) stem terete, branched; leaves supra-decompound, shining; leaflets or segments oblangeolate, deeply toothed; upper leaflets large, sheathing; terminal umbels on short peduncles: lateral umbels few, male, on longer peduncles; involucro none. \( \frac{3}{2} \). H. Native of Spain and Barbary, and in fields about Tangiers. Rivin. pentap. 3. t. 10. Herm. par. t. 165. Moris. ov. sect. 9. t. 15. last figure. 

\[ \text{Desf. fl. atl. 1. p. 251. Fruit 6 lines long, and 3 lines broad. This plant is easily distinguished from the rest, in the leaflets being broader, and shining.} \]

\[ \text{Tangier Giant-fennel. Fl. June, July.} \] 

\[ \text{Clit. 1680. P. 6 to 8 feet.} \]

15 F. nud'a (Spreng. umb. spec. 81. t. 7 f. 15.) stem terete, striated, branched; leaves ternately bipinnatifid, glaucous; segments obtuse, rather tridentate; involucro and involucres none. \( \frac{3}{2} \). H. Native of Siberia. Petioles sheathing at the base, glaucous. Branches spreading. Stem about the thickness of a goose quill, girded by fibres at the base, just at the neck.

\[ \text{Naked Giant-fennel. Fl. Ju. July.} \] 

\[ \text{Clit. 1821. P. 1 to 2 ft.} \]

16 F. Tessekocpete (H. B. et Kunt. nov. spec. 5. p. 12. t. 418.) stem terete, fistular; leaves quadrifidipinnate; leaflets or segments linear, acute, flat; involucrum of one leaf; involucres of 3-7 linear leaves, which exceed the fruit. \( \frac{3}{2} \). F. Native of Mexico, in cold places near the town of Tolucco. Herb glabrous, a foot high, a little more. Rays of umbel unequal. Leaf of involucrum linear, shorter than the rays of the umbels.

Leaves of involucres 5-6, very unequal, the longer ones exceeding the umbelles. Flowers many, abortive. Vitae 4 in the commissure, and 3 in the furrows.

\[ \text{Tolucco Giant-fennel. Fl. 1/4 ft.} \]

17 F. Petiolaris (D. C. prod. 4. p. 173.) plant quite glabrous; stems terete, branched, leafy at the base; petioles biterate, having the ultimate divisions very long, and cylindrically conical, acute, bearing no foliaceous segments; upper sheaths small, undivided, acuminate; involucro and involucres none. \( \frac{3}{2} \). H. Native of Persia, among stones on the tops of the mountains about Seidkhodz, where it was collected by Szwowits. The species is very remarkable in the absence of foliaceous leaflets, and therefore the leaves are reduced to the naked petioles.

\[ \text{Petiolar Giant-fennel. Fl. 2 to 4 feet.} \]

18 F. Seseloderes (Meyer, plannz. p. 126.) glabrous, glaucous- cent; stem rather angular, leafy, branched; lower leaves bipinnate: leaflets pinnatifid: lobes linear; sheaths narrow: upper sheaths leafless, acuminate; umbels all fertile, pedunculate; involucro almost wanting; leaves of involucro setaceous: vitae 1-3 in the furrows. \( \frac{3}{2} \). H. Native of Caucasus, on Mount Beschbrakm. Leaves of Seselí montanum; but the petals are yellow like other species of Pérula. Margin of calyx obsolete. 

Fruit nearly like Pheuedanum.

\[ \text{Seseli-like Giant-fennel. Fl. 2 to 3 feet.} \]

** Stems almost naked.**

19 F. A'ssa-fœ'tida (Lin. mat. med. 79.) stem terete, simple, furnished with leafless sheaths; radical leaves pinnate, having 1 or 2 pinnatifidly sinuated leaflets on each side; lobes oblong, obtuse; involucro wanting. \( \frac{3}{2} \). H. Native of Persia, in the provinces of Khorassan, Laq, and Fars. A'ssa-fœ'tida, Kømpf. amén. p. 333. and p. 336. with a figure. Stem
3-6 feet high. According to the testimony of Kämpfer, this is the plant from which the real assafetida is obtained. It is the concrete juice of the root, and is procured by the peasants who live in the neighbourhood of the mountains in the provinces of Khorassan and Laar in Persia. When the leaves begin to decay the oldest plants are selected, not less than 4 years' standing. The earth is partly cleared away, so as to expose the upper part of the root. The leaves and stem are twisted off, and used as a covering to screen it from the sun. In this state the root is left 40 days, when the covering being removed, the top of the root is cut off transversely. It is then screened again 48 hours, when the juice is scraped off, and exposed to the sun to harden. This done, a second section is made; the screen again employed, and the juice obtained a second time as before. Thus the assa-foetida is 8 times repeatedly collected from the same root; but after a third section it remains 8 days to recover a sufficient stock of juice.

Assafoetida is well known by its peculiar nauseous fetid smell, the strength of which is the surest test of its goodness. This odour is extremely volatile, and of course the drug loses much of its efficacy in keeping. It comes in large irregular masses, composed of various shining little lumps or grains, partly whitish, partly brownish or reddish, and partly of a violet hue; those are accounted the best which are clear, of a pale reddish-colour, and variegated with many fine white tears. It is a gummy resin, but has the gum in largest quantity. It is the most efficacious of the fettid gums, and is commonly used in hysteria hypochondriasis, some symptoms of dyspepsia, amenorrhoea and chlorosis, flatulent cholices, and most diseases termed nervous; it is thought to be the most powerful remedy we possess for those peculiar convulsive and spasmodic affections, which often recur in hysteresis. It is recommended as an emmenagogue, anesthetic, expectorant, antiasthmatic, and anodyne. Its action is quick and penetrating.

Assa-foetida. Fl. July, Aug. Pl. 6 to 7 feet.

20 F. Szowits'a (D. C. prod. 4. p. 173.) stem terete, nearly naked, branched, glabrous; leaves tripinnate, clothed with velvety pubescence; leaflets deeply toothed, obtuse; umbels somewhat panicked, without involucra; fruit ovate-obovate, flat, longer than the pedicels. 2. H. Native of Persia, at Seid-khodzi, in gravely and stony places, where it was collected by Szowits. Neck of root appearing hairy from numerous erect fibres. Petioles of leaves trifid. Umbels terminal, on short peduncles. Fruit the size of F. comminís.

Szowits’s Giant-fennel. Pl. 5 to 6 feet.

21 F. Pube'scens (Pall. ex Willd. rel. in Schultes, syst. 6. p. 598.) stem pubescent, pannicled, nearly leafless; radical leaves clothed with hoary pubescence, ternately tripinnate; leaflets jagged: lobes linear, tripartite, obtuse; sheaths opposite, small; involucra and involucules minute and caducous. 2. H. Native of Siberia.


22 F. Fúmi'la (Pall. ex Willd. rel. in Schultes, syst. 6. p. 598.) stem smooth, pannicled, leafless; radical leaves pinnate, ternately tripinnate; leaflets pinnatifid; lobes dentate, bluntns. 2. H. Native of Siberia.

Dwarf Giant-fennel. Pl. 1 foot.

23 F. Ar'me'n (D. C. prod. 4. p. 174.) glabrous; petioles ternate at the base, having the divisions bipinnate; leaflets short, divided into thick, oblong, obtuse, aggregate, somewhat whorled lobes; stem naked, terete; leaves of involucra and involucules short, oblong; fruit elliptic. 2. H. Native of Armenia.

Oroserineum Armènium Scelesos Massilisiensis folio, Tourn. herb. Upper leaves reduced to short leafless sheaths.

Armenian Giant-fennel. Pl. 2.

† Little known species.

24 F. Breviföllia (Link, in Schultes, syst. 6. p. 592.) stem terete, glabrous; leaves supra-decompound; leaflets linear, channelled, divaricate, flaccid, cupulidate, elongated; involucra wanting; primordial umbels sessile. 2. H. Native of Portugal.

Short-leaved Giant-fennel. Pl.

25 F. Capilla'res (Link, in Spreng, umb. spec. 85.) stem terete, glabrous; leaves trinervate; leaflets filiform, capillary, loose; sheaths of petals almost wanting; umbels axillary; involucre of a few sessate leaves. 2. H. Native of Portugal.

Narthécium. Dalech. ludp. p. 754. Fèrula tenuii-fòlió, Mor. ox. sect. 9. t. 15.


26 F. Peccadani'fölia (Willd. herb. in Schultes, syst. 6. p. 592.) stem knobbed, branched, leafy; leaves tri-nervate, stiff; leaflets trifidly pinnatifid, linear-subulate, elongated; involucra wanting; umbellules rather capitata. 2. H. Native of Siberia, at the Volga. F. nodifòra, Pall. itin. app. p. 39. t. N. ed. gall. t. 56. F. Sibírica, Willd. spec. 1. p. 1411. Leaflets very long, nearly terete. Fruit unknown. The herbarium of Wildenow is said not to contain this plant.

Sulphur-wort-leaved Giant-fennel. Pl. 5 to 6 feet.

27 F. Nudicau'lis (Spreng. neu endt. 2. p. 149. but not of Nutt.) stem naked, furrowed, glabrous; radical leaves bipinnate; leaflets deeply serrated, mucronate; sheaths of upper leaves abortive; leaves of involucrum linear-lanceolate. 2. H. Native of Sicily, on the Nebrodes, in the higher pastures.


Naked-stemmed Giant-fennel. Pl. 2 to 3 feet.

28 F. Fenicula'ce (Nutt. gen. amer. 1. p. 183.) plant pubescent; stem short, naked, furrowed, glabrous; radical leaves pubescent, supra-decompound; leaflets linear, very narrow, acute, short; ultimate ones trifid; involucra wanting; involucules unilateral, digitate, with linear segments. 2. H. Native of North America, on the plains of the Missouri; and on the northwest coast near Fort Vancouver, and barren sandy grounds on the Columbia river; low hills near the source of the Wallawalla river, and on the Saskatchewan at Carlton House. Pastinacum feniculae, Spreng. in Schultes, syst. 6. p. 587. Flowers yellow. Herb smelling of fennel. Fruit furnished with 5 stripes, 3 of which are conspicuous. Umbel solitary, terminal. Sprengel refers to this Lomárium villum, Rafin, in journ. phys. 1819. aug. 1. p. 101. and the flowers are said to be white by the author, but according to Nuttall they are yellow; and therefor also the Cogswellia villosa, Schultes, syst. 6. p. 588.


29 F. Cana'ensis (Lin. spec. p. 356.) segments of leaves branched, shining, linear.—Native of Canada. Lin. hort. ups. p. 61. Gron. vird. p. 147. This is a very obscure plant, and probably the same as Angelica lacida.

Canadian Giant-fennel. Pl. 2 feet.

30 F. Nutta'li (D. C. prod. 4. p. 174.) plant small, almost stemless, glabrous; leaves supra-decompound; leaflets linear, short, acute; sepalas red; rays of umbel elongated; involucra wanting; involucules unilateral, digitate, with short segments. 2. H. Native of North America, on the plains of the Columbia; banks of streams among stones at the Great Falls of the same river. F. nudiculátis, Nutt. gen. amer. 1. p. 183. but not of Spreng. Smýrium nudicaule, Pursh, fl. bor. amer. 1. p. 196.
Pasinica nudicaule, Spreng. in Schultes, syst. 6. p. 587. Root fusiform. Plant having the colour of fennel, but more aromatic. This plant differs from the genera Ferula, Pastinaca, and Smyrnium, in the flowers being white, not yellow, as in those genera.


31 F. Palmeilla (Hook. in fl. amer. bor. amer. 1. p. 268.) Plant glabrous, nearly stalkless; leaves bipinnatifid, on longish petioles, glaucous; leaflets linear, bluish; lower ones often again pinnatifid; peduncles rather shorter than the leaves; involucrum none; involucre unilabiate, dimidiate, palmate, with the disk florescent. 2. H. Native of North America, about Carlton House on the Saskatchewan. Root large, thick, rather fusiform. The involucres are very remarkable, truly palmate, gradually tapering into the broad petiole or ray, and bearing a small umbelule of white flowers on the disk.

Palmeilla Giant-fennel. Pl. ½ foot.

32 F. Affinis (Bess. cat. hort. crem. 1816. p. 57.) Native near Odessa. This species is not described.

Allied Giant-fennel. Pl. 2 to 3 feet.

Cult. Any common garden soil answers the species of Ferula; and they are only to be increased by seeds.

XCH. DOREMA (from ὁρμα, dorema, a gift or benefit; not that the plant is considered pre-eminentiely deserving that title, but that the name is also agreeable to the ear). D. Don, in Lin. trans. vol. 16. p. 601.

Lin. syst. Pentàndria, Digynia. Flowers sessile, immersed in wool. Margin of calyx 5-toothed. Petals ovate, with an inrolled point. Disk epigynous, cup-shaped, fleshy: with a pli- cate, rather lobulate margin. Style complanate, recurved at the apex. Stigmas truncate; Fruit elliptic, much compressed from the back, girded by a complanate broadish margin; raphe very narrow, usually closed. Mericarps 5-ribbed; the 3 intermediate ribs distinct, filiform, at equal distances: lateral 2 confluent with the margins; vitreous prominent, one in each furrow, and 4 in the commissure, which is flat. Carpophore bipartite, filiform. Seed flat.—A robust, greenish, glaucous, Persian herb, with a perennial root, and clothed with glandular down, almost with the habit of Opothetia Chironion. Leaves large, petiolate, somewhat bipinnate, 2 feet long; pinnae usually 3 pairs, each pair rather remote: lower leaflets distinct; superior ones confluent, deeply pinnatifid: segments oblong, mucronate, quite entire, or rarely a little lobed, coriaceous, veined beneath, 1-5 inches long, and half an inch to 2 inches broad. Petioles and rachis terete, ribbed, pubescent, very much dilated at the base, and sheathing a little, with the upper margin winged and stipulate. Umbels proliferous, racemose; umbellules globose, on short peduncles, usually disposed in a spicate manner. Peduncles terete, woody. Involucra and involucres wanting. Petals white. Stamens and styles yellow. Ovarium densely woolly. Fruit naked.

1. D. Ammoniacum (D. Don, l.c.) 2. H. Native of the south of Persia, in the vicinity of Jerzid Khat, a town of Irak El Ajam, the ancient Parthia, about 42 miles south of Isphahan. To discriminate and characterize those plants which more immediately administer to the wants and comforts of man, is one of the chief objects of practical botany; but it is a task replete with difficulties; the countries whence many of the substances are derived, particularly those belonging to the Materia Medica, being generally remote, and often inaccessible to travellers. Although the gum Ammoniacum has held a place in the Materia Medica from a very early period, yet the plant from which it is obtained has hitherto remained almost totally unknown; and the same may be said of the analogous gum Galbanum, and many other articles derived from the vegetable kingdom, enumerated in the Pharmacopoeia. It is true Dioscorides and Pliny mention the plant which yields the gum Ammoniacum, the former under the appellation of Agasylis, and the latter under that of Metopium, and give Libya as its native country; but if the gum was anciently imported thence, it must have been the produce of a different plant than ours; and probably identical with the species of Ferula, represented by Jackson in his account of Morocco, as the gum now comes to Europe by way of the Levant and India. Dioscorides, whose opinion is adopted by all subsequent writers, derives the name Ammoniacum from Ammon or Hammon, the Jupiter of the Lybians, whose temple was situated in the desert of Cyrene, near to which the plant was said to grow. But it appears that Dioscorides was altogether mistaken as to its native country; and that the name Ammoniacum or Ammoniacum, as it is indifferently written, is really a corruption of Armeniacum; for it is now ascertained beyond all doubt, that the plant is a native of Persia, and that the gum must have been anciently brought to Europe by way of Armenia; and we sometimes find the name of the apricot written Malum Arminiacum. Wildenow, having sown some seeds picked from the gum-Ammoniacum, a species of Heracleum came up, which he called Heracleum ammoniacum, but this appears to be identical with Heracleum Pyrenicum; but as the plant possesses no smell analogous to Ammoniacum, and affords no gummy substance whatever, it is probable it was only an accidental weed.

The materials from which the description was drawn were procured by Lieut.-Colonel Wright, of the royal engineers, in the district where the gum Ammoniacum was collected, which is given above, and presented by him along with other dried plants to the Linnean Society. Every part of the specimen is covered with drops of a gum possessing all the properties of Ammoniacum, and this circumstance alone, independent of any other evidence, would seem sufficient to remove all doubt on the subject; besides the specimen has been compared with the portions of inflorescence and fruit, which are found abundantly intermixed with the gum in the shops, and they are found to agree in every particular. The name applied to the plant by Dioscorides is already pre-occupied by another genus of Umbelliferae, and that of Pliny is scarcely unexceptionable, as originating in a mistake, Metopium having been used by some ancient authors to denote the Galbanum, and by others the gum-Arabic tree; but most writers seem to agree in considering it the appellation of an ointment, or some ologelous substance, rather than a plant. The name Dorema has been given to avoid confusion.

The first volume of the Dictionnaire Universel de Matière Médicale, by Merat and De Lens, published at Paris in 1829, contains some valuable notices on the Ammoniacum plant, from which it appears that the plant was already known to Mr. Brown, and had been determined by him to constitute a new genus. We also learn from the same work that M. Fantonier, a geologist sent into the Levant by the French government, had visited the district where the plant grows spontaneously, and transmitted a drawing, together with specimens of the herb and gum, to the museum of natural history at Paris. M. Fantonier was informed that the plant grows likewise in Khorsan.

In the appendix to the first volume of the transactions of the Medical Society of Calcutta, p. 369, is an extract of a letter addressed to Dr. Wallich by Lieut.-Colonel Kennett, accompanied by a rude figure of the plant, which yields the gum Ammoniacum, of which the following is a copy: “I have the pleasure to forward you a drawing and description of Oshae, a Persian plant that produces the gum Ammoniac. It was procured by Capt. Hart, of the 5th battalion Bombay native regiment, whilst on sick certificate in Persia; and understanding it was a desideratum in botany, he has requested me to send it to you in his name. It is to be regretted that Capt. Hart did not know enough of botany to give a particular description of the plant,
flower, and seed; but he brought away a root, with a piece of the stem, and some dry leaves attached; and which I have forwarded in a box to your address. You will observe the account of the plant is dated in July, 1822, though I only received it a short time ago.

"Description of the Oshac or gum-Ammoniac plant, by Capt. Hart.

"It having been intimate to me while at Bushire by the Resident, Capt. Bruce, that the plant which produces the gum-Ammoniac, called by the Persians Oshak, would be acceptable to botanists, as it was but imperfectly known, I procured the accompanying piece of stem, leaf, and flower, and took a drawing of one of the finest plants. Its height was 7 feet 2 inches, and the circumference of the lower part of the stem 4 inches. It grows principally on the plains between Yerdekaua and Kuminsha, in the province of Irak, without cultivation. The gum is so abundant, that upon the slightest puncture being made, it instantly oozes forth, even at the ends of the leaves. When the plant has attained perfection, innumerable beetles, armed with an anterior and posterior probe of half an inch in length, pierce it in all directions; it soon becomes dry, and is then picked off, and sent via Bushire to India and various parts of the world; and is of considerable export. I am of opinion it might be cultivated with success in many parts of Kattiywar, and the experiment might be worth the consideration of government. The gum might easily be procured by artificial means, which would answer the purpose equally well.

"From the part of the stem attached to the roots of the specimen I sent you, a considerable portion of the gum will be seen exuded, in which respect it resembles the Assafetida plant, which abounds in the mountains in the south of Persia, particularly in the province of Fars."

The gum is collected about the middle of June; a tenth is remitted as tribute to the government; the rest is sent to Bushire on the Persian Gulf. Part of that imported to this country comes from the Levant; but the largest quantity and the best comes by way of India.

According to Major Willock, who has visited the districts where the plant grows wild, the Ooshak or gum-Ammoniac plant grows in great abundance over the arid plains in the vicinity of the town of Zand Khast, on the borders of the provinces of Fars and Irak, a district appertaining to the government of Ispahan. The white juice which forms the gum pervades the whole plant, but exudes chiefly from the principal stems. It either remains on them in lumps, or, falling to the ground, is gathered by the villagers in the autumn, and is sold by them. The Ooshak plant is to be met with nowhere but in the province of Irak, growing in very dry plains, gravelly soils, and exposed to an ardent sun.

Ammoniac has a nauseous taste, followed by a bitter one; and a peculiar smell, somewhat like that of Galbanum, but more grateful; it softens in the mouth, and acquires a white colour upon being chewed. It softens by heat, but is not fusible; when thrown upon live coals it burns away in flame. Such tears as are large, dry, free from small stones, seeds or other impurities, should be picked out, and preferred for internal use; the coarser kind is purified in solution, colature, and careful insipitation; but unless this be artfully managed, the gum will lose a considerable deal of its more volatile parts. These are often vended in the shops under the name of stained gum-Ammoniacum, a composition of ingredients much inferior in virtue.

The general action of gum-Ammoniac is stimulant. On many occasions, in doses from 10-30 grains, it proves a valuable antispasmodic, deobstructive or expectorant. In large doses it purges gently, excites perspiration, and increases the flow of urine. It is used with advantage to promote expectoration in some pulmonary diseases, especially asthma and chronic catarrh; in dyspepsic affection to augment the flow of urine, and to support the salivation in small pox. In long and obstinate cholics, proceeding from viscid matter lodged in the intestines, this gummy resin has produced good effects, after purges and the common carminatives had been used in vain. Externally it is supposed to soften and ripen hard tumours, is often applied as discutient in white swellings of the knee, and other indolent tumours. A solution of it in vinegar has been recommended by some for resolving even ichorous swellings. It is exhibited internally combined with vinegar, vinegar of squills, assafoetida, &c. and in pills, with bitter extracts, myrrh, assafoetida; externally, dissolved in vinegar, combined with turpentine, common plaster, &c.


XCV. ERIOSYNAPHE (from ερός, erion, wool, and συνάψω, synaphé, connection; in reference to the commissure, which is the connection of the two mericarps that compose the fruit, and which is clothed with wool-like down in the hollows between the nerves). D. C. Coll. Mem. 5. p. 50. t. 1. f. 9. prod. 4. p. 175.—Férla species, Fisch.

Lin. syst. Pentandria, Dígyinia. Limb of calyx with 5 short blunt teeth. Petals ovate, entire, acuminated; points short, incurved. Fruit compressed from the back, girded by a thickish margin. Mericarps with 9 dorsal filiform ribs, but the 2 lateral ones are lost in the thickish margin, which is spongy inside; furrows between the ribs broad, and furnished with 2-3 striae, and bearing 2-3 small vitre; commissure without vitre, marked by a middle nerve and 2 marginal ones, tomentose, and rather concave between the nerves. Seed complanate.—A perennial glabrous herb, with the habit of Férla. Leaves decompound: leaflets long, linear. Involucra and involucels none. Flowers yellow. This genus is very nearly allied to Férla, but the singularity of the commissure of the fruit distinguishes it from all other umbelliferous genera.


Lin. syst. Pentandria, Dígyinia. Margin of calyx obsolete. Petals elliptic, with an inflapsed acute point. Fruit oblong or oval: the transverse section elliptic. Mericarps compressed from the back, having 5 filiform bluntish ribs: the 2 marginal ones rather the broadest; furrows between the ribs furnished with 3 vitre each; commissure bearing 2 broad marks. Seed oblong, with many stripes, free from the pericarp.—Glabrous perennial herbs. Leaves tripinnate; leaflets multifid. Stem terete, branched. Involucra of few leaves or wanting. Flowers cream-coloured. This genus differs from Peucédanum, in the furrows of the fruit being furnished with 3 vitre each, instead of one.

1 P. sal’a (Bess. enum. pl. vohl. 55. no. 1484.) stem terete, branched, naked; radical leaves tripinnate; leaflets many-

Salt-field Palumbia. Fl. June, July. Clt. 1804. Pl. 1 foot. 2 P. RAMOSISSIMA (D. C. prod. 4. p. 176.) stem terete, much branched, sparingly leafy; leaves alternate: leaflets few, oblong, acutely cut; involucrum wanting; involucels of few leaves; fruit oblong. 2. F. Native of the East Indies, on the Panduan mountains on the confines of the province of Silhet. Selimum? ramosissimum, Wall. mss. Root long, cylindrical, simple. Stem 2 feet high. Upper leaves reduced to the petioles. Fruit much flattened from the back; furrows furnished each with 2-3 obscure vittae; commissure covered with a pelticle, and therefore appearing without vittae at first sight.

Much-branched Palumbia. Pl. 2 to 3 feet?


XCVI. PEUCE/DANUM (pevee/danum) of Theophrastus and Dioscorides; said to be from πεύκη, peuje, a pine, and δανός, dannos, parched; the plant was so called on account of its small smell, which resembles resin). Koch, umb. 92. f. 28. and f. 29. D. C. prod. 4. p. 176.—Peucedanum, Selimum, and Férola, &c. of authors.—Oreo-selimnum and Thysselium, Hoffm. umb. p. 153. and 154.—Oreo-selimnum and Peucedanum, Lag. am. nat. 2. p. 90.

Lin. Syst. Pentandria, Diggynia. Margin of calyx 5-toothed. Petals obovate, emarginate or entire, with an inflexed point. Fruit flattened from the back or lenticularly compressed, girded by a dilated complanate margin. Mericarps having the ribs at equal distances, the 3 intermediate ones filiform, but the 2 lateral ones are more obsolete, and contiguous to the dilated margin, or lost in it. Vitiae one in each furrow, but sometimes 2, and usually 2 in the commissure. Carphophore bipartite. Seed flat in front.—Usually glabrous perennial herbs. Leaves simply pinnate, or many times pinnate, or ternately divided. Umbels compound, terminal. Involucra variable; involucels of many leaves. Flowers white or yellow or greenish yellow. According to Besser, the species with obcordate petals narrows at the base are distinguished from the species with ovate petals, which are broadest at the base, and entire or a little margined at the apex. The first constitutes Oreoselinum, and the second the true species of Peucedanum.

Sect. I. Eufue/cedanum (from eu, well, and Peucedanum; this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 176.—Peucedanna legitima, Koch. 1. c.—Peucedanum, Gaertn. fr. 1. t. 21. Spreng. syst. 1. p. 1082. Margin of mericarps narrow. Vitiae 2-4 in the commissure. Dorsal ribs of mericarps 3, the outer 2 more remote than the rest. Involucra usually wanting or of few leaves, rarely of 5-8 leaves.

* Flowers yellow.

1 P. paniculatum (Lois. fl. gall. p. 722.) stem terete, striated, branched at the top; leaves 5 times ternate or trichotomous: segments linear; leaves of involucra 1-2, sectaeous, caducous; involucels of many leaves. 2. H. Native of Corsica. D. C. fl. fr. 5. p. 513. Schulth. syst. 6. p. 565. Umbels numerous, disposed in a panicle. Flowers yellow. Fruit unknown. This is a different plant from the Selimum paniculatum of Spreng.


2 P. officinalis (Lin. spec. p. 353.) stem terete, branched; leaves 5 times tripartite: segments linear, acute, flaccid; involucels of 3 sectaeous leaves, deciduous; pedicels much longer than the fruit. 2. H. Native of Europe, in humid meadows and shady places. In Britain in salt marshes, very rare; as in ditches near Shoreham, Sussex; and at Walton near Harwich, Essex. About a quarter of a mile below Faversham, by the river side. Smith, engl. bot. t. 1767. Hayne, arz. gew. 7. t. 4. P. altissimum, Desf. cat. hort. par. p. 119. P. Alsaticum, Poir. dict. 5. p. 227. Selimum Peucedanum, Sowerby, engl. bot. t. 1767. P. majus Italicum, Bauh. p. 149. Moris, oxon. sect. 9. t. 15. f. 1.—Bauh. hist. 3. p. 32. f. 1. Trag. hist. p. 889. p. 881. Hog's-fennel, Petiv. herb. brit. t. 24. f. 7. Herb smooth, with a resinous juice, and a strong sulphureous smell. In England, Gerard says, it is called Horestrang (or Horestrang (or Horestrang (or Horesrăng), from the German Harstrang), Sulfur-fennel or Hog's-fennel, Sulphur-wort, and Brimstone-wort. The root wounded in spring yields a considerable quantity of a yellow juice, which dries into a gummy resin, and retains the strong scent of the root. Many stimulating qualities have been attributed to the root, but it should seem to be rather dangerous for internal use.

Var. β, Italicum (Mill. dict. no. 2.) segments of leaves or leaflets very narrow, filiform. 2. H. Native of the south of Europe. Lob. icon. t. 781. Leaves of involucre 3-4, as in the species. Leaves almost like those of P. longifolium. Perhaps a proper species or a variety of P. longifolium or P. Morisoni, but very distinct from P. Parisiense. It grows on low mountains, and also in valleys by the sides of rivers in Italy. It is altogether a larger plant than the species.


3 P. ledeneou'ri; stem terete, branched; leaves 5 times tripartite; segments linear, with roughish cartilaginous serrated margins; involuca of few leaves, caducous; pedicels exceeding the fruit. 2. H. Native of Siberia, every where in open situ-
331 segments pedicels and P. leaflets pinnulae leaves in involucrem Native primordial involucrum pinnulae Vittae leaflets leaflets 105. H. p. leaves in leaves leaves leaves in involucels margins secondary triternately cars, to Rutlienica, 1 as 4 the the Var.fi; 567. Fl. 5 feet. 9. Var. Koch, unknown feet. fruit. 8 Var. Koch, Willd. 366. Fl. 5 feet. 11 P. dissem'tum (Led. fl. ross. alt. ill. t. 181. fl. alt. 1. p. 306.) stem terete, leafy; superior branches in whorles; sheaths spreading; leaves pubescent, 4 times pinnate; pinnulae opposite, petiolate, pinnate; leaflets pinnatifid or entire; segments oblong, rather bifid; primordial umbels nearly sessile; involucra and involucels very minute. 2. H. Native of Altaia, on hills at the river Talskowa, near Buchtorminsk. Involucrum of one or few minute setaceous leaves. Petals golden yellow, ovate, acute, inflexed. Ribs of fruit filiform. Vitta 1 in each furrow, and 2 in the commissure.

Dissected-leaved Sulphur-wort. Fl. June. Pl. 4 feet. 12 P. canesc'ens (Led. fl. ross. alt. ill. t. 105. fl. alt. 1. p. 307.) stem terete, leafy; intermediate branches opposite and tern; sheaths closely adpressed; leaves clothed with hoary pubescence, 3 times pinnate; pinnulae opposite, petiolate, pinnate; lower segments pinnatifid; upper ones confluent; lobes broad-ovate, tridentate or entire, acute; involucrum wanting or of one leaf; involucels of many short leaves. 2. H. Native of Alita, on rocks on Mount Arkauia. Leaves of involucels many, lanceolate, acute, with a yellow keel, and white margins. Flowers deep yellow. Petals ovate, acuminate, inflexed. Fruit not seen.

Canescint Sulphur-wort. Fl. May, June. Pl. 1 to 2 feet. 13 P. gracille (Ledeb. fl. ross. alt. ill. t. 306. fl. alt. 1. p. 308.) stem leafless, branched; branches scattered; radical leaves clothed with hoary pubescence, but at length becoming glabrous, bipinnate; pinnulae opposite, pinnate; leaflets nearly opposite, rather trifid; sheaths leafless, stem-clasping, chartaceous, permanent. 2. H. Native of Alita, in dry saltish open places in the Kirghisian-steppe, between Buchtorminsk and the lake called Noor-Saisan. Root thick. Involucra and involucels wanting, or of one or two leaves, which are formed from the pedicels becoming abortive and leaf-like. Flowers polygamous, those in the terminal umbels hermaphrodite and fertile; and those in the lateral umbels male. Vitta 1 in each furrow, and 4 in the commissure. Petals golden yellow, obovate, acute, inflexed. Habit of a species of Ferula, and probably the same as Ferula pinuma, Fall. ex Schultes, syst. 6. p. 598.

Var. β, microcarpum (D. C. prod. 4. p. 309.) seed one-half smaller than in the species.
**Slender Sulphur-wort.** Fl. May. Pl. 1 to 2 feet.
14 P. _debrum_ (Led. fl. alt. 1. p. 310.) stem leafless, branch- ed; branches scattered; upper branches nearly opposite; leaves unknown; sheaths leafless, stem-clasping, chartaceous, permanent; fruit orbicularly elliptic. _H._ Native of Altaiia, in exposed dry sterile places, at the river Tchuva. Habit more robust than that of the preceding species, and the stems more branched and more flexuous. Umbels polygamous. involucra and involucels wanting, unless they are caducous. Vitae 1 in each furrow, and 4 in the commissure.

**Doubtful Sulphur-wort.** Pl. 2 to 3 feet.

**Golden-flowered Sulphur-wort.** Fl. June. Cht. 1779. Pl. 3 to 4 feet.
17 P. _capillaceum_ (Thunb. prod. 50. fl. cap. 257.) stem terete, striated, naked, nearly simple; radical leaves 5 times trichotomous; segments subulate, furrowed, caducous. involu- cera and involucels of 5-6 lanceolate-subulate leaves. _F._ Native of the Cape of Good Hope, on the mountains. Siech. pl. exciss. no. 212. Flowers yellow, according to Thunberg. Fruit ovate, compressed, margined winged, having 3 elevated ribs on each side, ex Thunb.

**Copitated-flowered Sulphur-wort.** Pl. 1 foot.
18 P. _teutonicum_ (Thunb. prod. 50. fl. cap. 257. but not of Poir.) stem striated, terete, a little branched; leaves bipinnatifid; segments lanceolate and alternate, margined: sheaths broad, stipula-formed at the base of the petioles; involucre and involucels of 6 leaves. _F._ Native of the Cape of Good Hope, on the mountains. Spreng. _Fl._ 3. p. 59. Fruit ovate, margined, winged on the back, with 5 ribs, ex Thunb.

**Fine-leaved Sulphur-wort.** Pl. 2 to 3 feet.
19 P. _virgate_ (Cham. et Schlecht. in Linnaea. 1. p. 392.) stem terete, shrubby; leaves stiff, pinnate; leaflets lanceolate, quite entire, mucronate, with revolute margins; involucre and involucels of many short leaves. _F._ Native of the Cape of Good Hope, on the mountains. Borch. cat. pl. afr. austr. no. 2868. The whole plant is quite glabrous and coriaceous. Petals ovate, yellow, entire at the apex, or hardly emarginate. Fruit said to be elliptic, with 5 ribs on the back, having a complanate margin.

**Twiggy Sulphur-wort.** Shrub.

**Flowers cream-coloured.**
20 P. _Schoettii_ (Bess. in litt. ex D.C. prod. 4. p. 178.) stem terete, a little branched; leaves pinnate-parted: segments linear, acute, entire or divided; involucra and involucels none. _H._ Native of Volynia and Podolia. Imperatoria Chabarei, Bess. _Fl._ 3. p. 570. Very like _Palminia Chabarei_, but differs in the lobes of the leaves being more diverging, in the rays of the umbels being quite smooth, in the involucels being wanting, and in the furrows being furnished with one vitrea each.

**Schott's Sulphur-wort.** Pl. 2 to 3 feet.
21 P. _O. orientale_ (Led. fl. alt. 1. p. 310.) stem terete, branched, fistular; leaves pinnate; leaflets bipinnatifid; lobes linear-oblong, acute; involucrum wanting; involucels of a few leaves. _H._ Native of Nipaul, on the Himalaya at Gosaingthana. P. _sulfitum_ D. C. prod. 4. p. 178. but not of _Sclerina?_ dissection, Wall. _Fl._ 3. p. 598. Habit of _Ethusa_ or _Thyselium_. Fruit nearly orbicular, with a narrow margin. Vitae all evident, solitary in the furrows, and twin in the commissure. Flowers cream-coloured or greenish, according to the dried specimen.

**Eastern Sulphur-wort.** Pl. 1 to 2 feet.

**Flowers white.**

**Parsian Sulphur-wort.** Fl. May, July. _Fl._ 300. Pl. 4 to 5 feet.
23 P. _l. aureum_ (D.C. prod. 4. p. 179.) stem terete, branched; leaves binate; leaflets broad-linear, elongated, acuminate, with a few anned serratures; involucra and invo- lucels wanting; fruit with membraneous wings. _H._ Native of Nipaul, and at Deera-Dhoom. _Fl._ 3. p. 312. Sulphur-wort; Wall. _Fl._ 3. p. 598. Flowers white, but rose coloured in a dried state. The fruit is nearly like that of section 4, but the involucra are wanting. Commis- sure furnished with 2 curved vittae.

**Glacous Sulphur-wort.** Pl. 2 to 3 feet.
24 P. _vaginatum_ (Led. fl. oss. alt. ill. t. 608. fl. alt. 1. p. 512.) root creeping; stem simple; leaves pinnate, pinnae opposite, pinnae alternate, pinnae-parted, or tripartite, or entire; segments linear, acute; sheaths membraneous; in- volucrum wanting; leaves of involucels linear, length of umbel- lules. _H._ Native of Altaiia, in meadows at the rivers Irtysh, and Koksun. _Fl._ 3. p. 396. Flowers white; petals tapering into an inflexed point. Vitae 2 in each furrow, and 4 in the commis- sure. Stylodium and styles purple. Margin of mericarps broad.

_var. _F._ _P. pimilum_ (Led. fl. alt. 1. c.) differs from the species in the stems being only 3 inches high, furnished with leaves at the root; mericarps nearly one-half smaller.

**Sheathed Sulphur-wort.** Pl. ½ to 1 foot.

UMBELLIFERÆ.

25 P. synleularis (D. C. prod. 4. p. 179.) stem terete, furrowed; leaves bipinnate or tripinnate; leaflets pinnatifid; segments linear-lanceolate, bluish; involucre and involucels of many leaves; fruit lanceolate-elliptic.  

26 P. Bicaëlsse (Koch, umb. p. 94.) stem furrowed at the top, much branched; leaves bipinnate; leaflets pinnatifid; segments linear, acute; leaves of involucra many, rather toothed; leaves of involucels cohering at the base, exceeding the umbelules.  

27 P. Alsaticum (Lin. spec. 354. but not of Poir.) stem angularly furrowed; branched; leaves tripinnate; leaflets pinnatifid; segments oblance, mucronate, with serrately sebaceous margins; involucre and involucels of many lanceolate-linear leaves, which are subulate at the apex; fruit elliptic-oblong.  


29 P. Cervaria (Meyer, verz. pflanz. p. 126.) plant glabrous, glaucouscent; stem fistular, terete; leaves bipinnate and tripinnate; leaflets membranous, ovate, or a little cordate, cut, mucronated toothed; petioles nearly terete, fistular; sheaths narrow; leaves of both involucra and involucels setaceous; mericarps peltate, with narrow margins; the 3 dorsal ribs sharp.  

30 P. Cervaria-leaved Sulphur-wort. Pl. 3 to 5 feet.  

31 P. Austriacum (Koch, umb. p. 94.) stem sulcate; leaves tripinnate; leaflets ovate, cuneate at the base, coarsely toothed, pinnatifid; teeth bluntish, mucronate; leaves of involucra linear.  

32 P. montanum (F.L. fr. 3. p. 420.) Oreo selinum Austria, Hoff. umb. p. 155. Vitellæ usually 4 in the commissure, and often 2 in the outer furrows, ex Koch, in litt. P. montanum, involucræatum, et Rabilense, are probably only varieties of this species. Besser makes P. Austriacum and montanum one species and P. involucræatum et Rabilense another. The petioles of the radical leaves are divided into 3 branches.  

XCVI. PEUCEDANUM.

white, with a purplish outside. The plant is recommended in the gout; and in Styria they use it in intermittent fevers.  

Var. P. latifolium (Viv. ital. fragm. 1. p. 18. t. 22.) leaves broader and less glaucous.  

Var. g. disséctum (D. C. prod. 4. p. 180.) leaflets pinnatifid; lobes 3-5-cleft.  


30 P. Oreo selinum (Cusson, ex Lapeyr. a. p. 149.) stem terete, striated; leaves tripinnate; petioles bent back; leaflets remote, ovate, deeply pinnatifid, divaricate, shining; teeth rather mucous; fruit oval-orbicular.  


35 P. Alpestre (Lin. spec. 353.) stem terete, furrowed, branched; leaves thrice or 4-times ternate; leaflets linear, acute; involucre of many reflexed leaves; umbels of many rays; involucres of many acute, leaves rather shorter than the umbrellas. *4. H.* Native of the Alps. Selinum tenuifolium, Wall. Fl. alp. Desf. hort. par. cat. 119. Horn. hort. hafn. 1. p. 276. P. minus, Poir. suppl. 5. p. 228. but not of others. The leaves agree with those of *P. montanum.* Flowers yellow.

**Alp Sulphur-wort.** Fl. June, July. **Cht.** 1759. Fl. 2 to 3 ft.

34 P. Wallichianum (D. C. prod. 4. p. 181.) stem terete, branched; leaves supra-decompound; leaflets linear, cuspidate, smooth; involucra and involucres composed of cut leaves; ribs of fruit elevated; vittae in the commissure 4. *4. H.* Native of the East Indies, at Sirinagar; and of Nipaaul at Kamaon and Gosaingthang. Selinum tenuifolium, Wall. Fl. alp. Leaves, habit, and involucrum like those of *P. involucratum.* Ribs of fruit more elevated than in the rest of the species of the present genus, and nearly as in *Selinum* exsertum, but the commissure is broad, as in the other species of the genus.

Wallich’s Sulphur-wort. Fl. 2 to 3 feet.


**Involuterata Sulphur-wort.** Fl. July, Aug. **Cht.** 1810. Fl. 2 to 3 feet.


**Broad-leaved Sulphur-wort.** Fl. July, Aug. **Cht.** 1816. Fl. 2 feet.


**Selinum-like Sulphur-wort.** Fl. 2 to 3 feet.

39 P. Polyphyllum (Lede. fl. ross. alt. t. 309. fl. alt. 1. p. 314.) stem sulcate; leaves numerous, bipinnate; leaflets pinnatifid, trifid, or entire; segments oblong or linear, acute, with smooth margins; leaves of involucrum lanceolate, with membranous margins, deciduous. *4. H.* Native of dry rocks at the rivers Tscharysch and Kerlyk, near Riddersk, Lekwetis and elsewhere; on sandy hills, about Schulbinsk at the river Irtysch. Involucres of many leaves, like those of the involucrum. Flowers white; outer petals deeply emarginate, with an inflexed point. Mericarpers with rather prominent ribs, ridged by a broad margin. Vitae in the commissure, and 1 in each furrow: the outer ones as broad as the furrows.

Var. a. pubescens (Ledeb. fl. alt. 1. p. 315) segments of leaflets short, oblong, crowded, covered with fine down or thick short hairs; stem at most 2 feet high. *4. H.* Native on dry rocks, at the rivers Tscharysch and Kerlyk.

Var. b. glabrum (Led. 1. c.) segments of leaflets longer, oblong-linear, more remote, glabrous; stem 3 feet high, or more. *4. H.* Native in sandy places, near Schulbinsk and Lekwetis.

Var. c. lineare (Led. 1. c.) segments of leaflets elongated, linear, rather falcate, remote, glabrous; stem 2 feet high. *4. H.* On rocks about Riddersk.

**Many-leaved Sulphur-wort.** Fl. June. **Cht.** 2 to 3 feet.


**Whorled-branched Sulphur-wort.** Fl. July. **Cht.** 1653. Fl. 4 to 6 feet.

† Species not sufficiently known.

41 P. Isetense (Spreng. umb. spec. 57, and in Schultes, syst. 6. p. 569) stem angular, much branched; leaves terete; leaflets trifid and pinnatifid; segments lanceolate, cuspidate, veiny; umbels axillary; involucra and involucres of
many leaves. \( \mathcal{Y}. \) H. Native of Siberia, on the mountains.—
Gmel. sib. 1. p. 190. t. 42. Root thick, fusiiform. Habit of 
Trinia. Flowers cream-coloured. Fruit oval, a little 
winged. This species probably appertains to sect. 
Thyselium.

42 P. Créticum (Lin. spec. 354.?) stem terete, knobbed at
the origin of the leaves; leaves glaucous, pinnate; leaflets mul-
tifid: segments linear; umbel of 8-10 rays; involucrum of many
short, reflexed leaves; fruit oblong, glabrous. \( \mathcal{Y}. \) H. Native
of Canadia. Ligústico Créticæ, fœniculi folio, caulo nodosó,
57 and 58. f. 1. agrees well with this plant, but the figure of 
P. Alp. extt. p. 528. cited by Limnæus, is very different from it.

Cretan Sulphur-wort. Pl.?
43 P. microphyllum (Smith, in Rees’s cyclo. no. 11.) leaves 
tripinnate; leaflets 3-lobed, fleshy; involucrum hardly any.
\( \mathcal{Y}. \) H. Native of Siberia, in salt deserts about the Volga. 
Peucedanum salinum, Pall. in Spreng. syst. 1. p. 910. 
Athamânsia tenuifólia, Willd. herb. ex Spreng. Involution of 1
celeanous leaf, which is also sometimes absent. Fruit unknown.

A doubtful species.

Small-leaved Sulphur-wort. Pl. 2 to 3 feet?
44 P. japonicum (Thumb. fl. jap. p. 117.) stem terete, flex-
uous, branched; leaves 5-times 3-parted; leaflets cuneiform,
trifid; petioles broad, sheathing. \( \mathcal{Y}. \) H. Native of Japan, 
The whole plant is glabrous, and hardly a foot high. Mercicarps 
pressed, ovate, scarcely winged.

Japan Sulphur-wort. Pl. 1 foot.
45 P. Terna’tum (Nutt. gen. amer. 1. p. 182.) stem striated,
few-leaved; leaves on long petioles, ternate; leaflets long,
linear, acute, quite entire, attenuated at the base; involucrum 
almost wanting; involucels very short, 5-6-leaved; fruit oblong, 
elliptic, winged. \( \mathcal{Y}. \) H. Native of Carolina, in woods by the 
sides of marshes. Flowers unknown. Calyx entire. Margin
of calyx thick. Probably a species of Pastinaca.

Ternate-leaved Sulphur-wort. Pl. 3 feet.
46 P. verticillâta (Rafin. fl. lud. p. 81.) leaves decom-
pound; leaflets filiform: lower ones in whorls. \( \mathcal{Y}. \) H. 
Native of Louisiana, in humid places. Rob. trav. louis. 3. p. 461.

Whorled-leaved Sulphur-wort. Pl. 2 to 3 feet?
47 P. rupe’stre (Hoffmans. and Willd. in Schultes. syst. 6.
572.) leaves supra-decompound; leaflets linear, very narrow,
trifid; petioles and involucels of many leaves; umbellules 
usually 5-flowered. \( \mathcal{Y}. \) H. Native of Portugal. The rest
unknown.

48 P.? genicula’tum (Forst. fl. ins. auct. p. 136.) plant 
glabrous, branched, prostrate; stem terete, striated; leaves
alternate, cuneate at the base, quite entire, semi-ornicular at
the apex, and crenated; petioles shortly and bluntly auriculated
at the base; umbels pedunculate, of 2-3 rays; involucrum of
2-3 leaves; umbellules many-flowered; petals inflexedly cor-
date at the apex. \( \mathcal{Y}. \) H. Native of New Zealand. Bowsliésa 
geniculâta, Spreng. umb. spec. 14. t. 5. f. 11. But it certainly
is not a species of Bowsliésia, from the calyx being without teeth.

Kneed Sulphur-wort. Pl. prostrate.
49 P. Sprengelii (D. C. prod. 4. p. 182.) stem terete, 
branched; leaves bipinnate, lanceolate; leaflets pinnatifid, ses-
sile: segments lanceolate, mucronate, veiny, with serrately
scabrous margins; floriferous branches panicked. \( \mathcal{Y}. \) H. Na-
tive country unknown. Selinum paniculatum, Spreng. pug. 2.
p. 50. sist. 1. p. 909. Flowers yellow. Fruit with 3-winged
margins, having the ribs obsolete, and the furrows plano-
convex.

Sprengel’s Sulphur-wort. Pl. 2 to 3 feet?
plant has the appearance of a species of *Ligusticum*. Fruit winged, as in *Puccinellium*, sect. iv. but the calyx teeth are obsolete, and the involucrum is wanting, as in the other species of *Imperata*.

*Caucasian Masterwort*. Pl. 1 to 2 ft.

4 I. *MEXICANA* (Hort. Chelsea). 2 H. Native of Mexico. A broad-leaved species, received by Mr. Anderson, of the Chelsea Botanic Garden, from Mr. Otto, of the Botanic Garden at Berlin, in the year 1818, but it has not yet flowered. It may prove hereafter to belong to a distinct genus.

*Mexican Masterwort*. Clt. 1818. Pl. 3 to 4 ft.

*Cult*. Plants of easy culture; and may be either increased by dividing the roots or by seed.


**Lin. syst. Pentândria, Digynia.** Margin of calyx somewhat 5-toothed or nearly obsolete. Petals oval, acuminate, incurved. Fruit compressed on the back, winged on the margin, nearly orbicular, emarginate at the base. Mericarps with 3 blunt, dorsal, nerve-formed ribs; the 2 lateral ribs expanded into wings, which cover the whole surface of the fruit. Vitta 1 in each dorsal furrow, which are narrow, and 1 on each side of the commissure at the margins. Parts of carphophore adnate to the mericarps. Seed complanate.—A perennial herb, with the habit of *Angélica* or *Ostéricum*. Sheaths of leaves large: upper ones leafless. Umbels pubescent, of many rays. Involucra none, or of few leaves. Umbellules dense, many-flowered. Involution of many setaceous leaves. Flowers white. This is an intermediate genus between *Angélica* and *Imperatia*.

1 C. *Dahurica* (Fisch. in litt. D. C. prod. 4. p. 184). 2 H. Native of Dahuria, near Nertschinsky-Sawod. Thys-selium Dahuricum, Spreng. syst. 1. p. 894. Habit of *Ostéricum praticás*, but more branched, firmer, and thicker in the stem. Habit also of *Angélica Razočhóí*, but the leaves are more deeply serrated, the sheaths larger and inflated, and the involucrum composed of one or two leaves.


*Cult*. See Imperatia above for culture and propagation.

**XCIX. BUBON** (from βούβω, boubon, the groin, or a tumour in that part, or elsewhere, which this herb was supposed to cure). Koch, umb. 95. D. C. prod. 4. p. 184. but not of Spreng.—*Bubon* species, Spreng, in Schultes, syst. —*Agasyllis* species, Spreng. prodr. —Galbanophora, Neck. elem. no. 292.

**Lin. syst. Pentândria, Digynia.** Margin of calyx obsolete. Petals obovate, entire, with an acute involute point. Fruit lenticularly compressed from the back, girded by a dilated complanate margin. Mericarps with 5 ribs at equal distances: the 3 intermediate ones filiform; and the 2 lateral ones lost in the complanate margins. Vitta covering the whole seed, 4 on the back and 2 in the commissure. Carphophore bipartite. Seed rather convex, flattish in front.—Quite smooth shrubs, natives of the Cape of Good Hope, abounding in a gummy, resinous, sweet-scented juice. Stems terete. Leaves biternate, glaucous, stiltish; leaflets toothed or pinnatifid; petioles sheathing. Umbels compound, of many rays. Involucre and involucels of many linear leaves. Flowers greenish yellow.

1 B. *Galbanum* (Lin. spec. p. 364.) leaflets cuneate, rhomboid, deeply toothed at the apex; terminal ones 3-lobed. 2 H. G. Native of the Cape of Good Hope, on hills. Jacq. vind. 3. t. 36. Thumb. fl. cap. 253. Berg. cap. 77. Woodv. med. bot. 34. t. 12. Sims, bot. mag. 2489. Selium Galbanum, Spreng, in Schultes, syst. 6. p. 563. Agasyllis Galbanum, Spreng. prodr. 22. Pluk. alm. t. 12. f. 2. Herm. par. 163. with a figure. Dorsal vittae of fruit under a thick pericarp. Stem with purplish bark, covered with whitish powder. This was formerly supposed to be the plant which yielded the drug called gum galbanum; but it has lately been discovered to be the produce of quite a different plant, a native of Persia, now called *Galbanum officinale*.


2 B. *Dùmmiferum* (Lin. spec. 364.) leaflets cuneate at the base, pinnatifid: segments lanceolate, acute. 2 H. G. Native of the south of Africa. Selinium gummiferum, Spreng, in Schultes, syst. 6. p. 564.—Comm. Hort. amst. 2. p. 115. t. 58. Like the preceding, but differs in the leaves being more finely divided. Dorsal vittae of fruit superficial.


*Cult*. A mixture of loam, peat, and sand is a good soil for these shrubs; but they can only be propagated by seed.


**Lin. syst. Pentândria, Digynia.** Margin of calyx obsolete. Petals roundish, entire, involute, with a somewhat quadrately reduced point. Fruit lenticularly compressed from the back, girded by a complanate margin. Ribs of mericarps filiform, at equal distances: the 3 intermediate ones acutely keeled: and the 2 lateral ones more obsolete, and running into the flattened margin. Vitta broad, solitary in the furrows, and filling them, but twin in the commissure. Seed rather convex, flattish in front.

—Annual erect, glabrous herbs. Leaves decompound, with linear-setaceous lobes. Involucre and involucels wanting. Flowers yellow, nearly like those of *Pastináca*.

1 A. *ségetum* (Lin. mant. 219.) fruit oval, nearly destitute of the membranous margins. 2 H. Native of France, Portugal, Sardínia, Greece, Persia, &c. Jacq. hort. vind. t. 192. D’Urv. nemum. p. 33. Broth. fl. hirs. 1. p. 465. Münn. ségetum. Guss. prod. fl. sic. 1. p. 346. Anéthum grávuléns, Ucria, ex Guss. A. pusillium, Hortul. Perhaps only a variety of the following, according to Brotero; but it differs from it in the mericarps being almost without a margin, and in being rather more convex on the back, and therefore holds an intermediate station between *Anéthum* and *Funiculium*.

*Corn-field Dill*. Fl. June. Fl. 1796. Pl. 2 to 1 foot.

but smaller and more glaucous; it has finely divided leaves, and a slender single stem. The whole plant is powerfully aromatic. The leaves are used to heighten the relish of some vegetable pickles, particularly cucumbers; and also occasionally in soups and sauces. The whole herb is also used in medicinal preparations. Dill is raised from seed, of which half an ounce is sufficient for a bed 3 feet by 4 feet. Sow annually in February, March, or April, or occasionally in autumn, as soon as the seed is ripe, to come up stronger in the spring, in any open compartment, either in drills, 6 or 12 inches apart, or broad-cast thinly, and raked in evenly. The plants should remain where raised, and may be thinned moderately, should they rise too thick. They will shoot up in stalks, with leaves and seed umbels in summer and autumn, for use in proper season. Leave some plants when raised for seed; they will furnish plenty in the autumn. The bruised herb is anodyne and resolvent. The seeds are aromatic, and contain an ethereal oil, and useful, therefore, in flatulencies; the essential oil is also good in the colic. A distilled water, drawn off to the quantity of a gallon to a pound of seeds, was ordered in the London Pharmacopoeia, and occasionally made the basis of carminative draughts, and juleps; its flavour is more agreeable than that of the seeds in substance. Along with the water arises a considerable quantity of essential oil, which is given from 1 to 3 or 4 drops, or more, as a carminative. This, however, is now altogether disused.


3 A. So'wa (Roxb. hort. beng. p. 22.) fruit oblong, nearly destitute of a membranous margin. O. H. Native of the East Indies, where it is called So'wa, and where it is cultivated for its use in medicine. Fleming. ind. med. in soc. asiat. 11. p. 156. ex Schultes, syst. 6. p. 628. Herb very like the preceding. Rays of umbel 5-16. Fruit flat, 5-ribbed, almost wingless.


† Species not sufficiently known.

4 A. cymbo-ca'rum (D. C. prod. 4. p. 186.) fruit elliptic, puberulous on the outside, when examined by a lens, with a very narrow margin. O. H. Native of Persia, about Seidkhdzi, where it was collected by Szowits. Plant small, glabrous. Root slender, simple. Leaves many-parted: lobes linear. Umbels pedunculate, opposite the leaves, 3-6-rayed, without involucre. Umbellule 6-7-flowered, surrounded by an involucre. Flowers unknown, but probably yellow, as the other species. Fruit appearing turgid at first sight, ellipsoid, but empty inside, from the mericarps being thin and concave. Carpophore filiform, bipartite. Mericarps of the same structure as the other species of the genus.

Boat-fruited Dill. Pl. 1 foot.


Red-stemmed Dill. Pl. 1 foot.

Cult. All the species grow very well in the open border, where the seeds should be sown.

VOL. III.

CI. CO'RTIA (in honour of Bonav. Corti, who was the first to discover the motion of molecules in the cells of plants). D. C. prod. 4. p. 186.—Schultzia species, Wall.

Lin. syst. Pentßndria, Digînîa. Teeth of calyx elongated, acute. Petals lanceolate, acuminated, entire. Stylodium conical; styles diverging. Fruit elliptic, rather retuse at both ends; mericarps flattish, 5-ribbed: ribs winged: lateral ribs the broadest; vitte 1 in each furrow, and 2 in the commissure, which is broad and flat. Seed flattish.—A nearly stemless herb. Leaves petiolate, pinnate; leaflets divided into short, capillary segments. Scapes, some of them thick and stem-formed, bearing an involucrum, composed of 2-3 multifid leaves; others are elongated, and bearing an umbel, which is usually of few rays. Involute of 5-7 linear, entire, or 2-3-elef acute leaves. This genus differs from Schultzia in the calyx being 5-toothed, and in the fruit being compressed from the back, not from the sides, evidently 5-winged.


Lindley's Cortia. Pl. 1 foot?

Cult. Sow the seeds in the open border in spring, in a warm sheltered situation.

CII. CAPNOPHYLLUM (from κανάω, kanos, the Greek name for fumitory, and φύλλον, phyllon, a leaf; resemblance in leaves to those of fumitory). Gaertn. fruct. 2. p. 32. t. 85. Koch, umb. p. 95. no. 24. in add.—Cônum species, Auct.—Rûnia, Link. but not of Gaertn.

Lin. syst. Pentßndria, Digînîa. Margin of calyx obsolete. Petals oblong, somewhat emargiante, tapering into an indented point. Fruit lenticellate compressed, girded by a complanate, dilated margin. Mericarps having the 3 intermediate ribs thickish, keeled, rather flexuous or tubercled: the lateral ribs lost in the dilated margins. Vitte solitary in the furrows, and twin in the commissure. Seed rather convex, but flat in front.—Annual herbs, natives of the Cape of Good Hope, with leaves almost like those of fumitory, whence the name. Leaves hoary, multifidly decumbent, with linear, cuneate segments. Umbels opposite the leaves, or nearly terminal. Involucra and involucels composed of 3-6 leaves, with membranous edges. Flowers white.


African Capnophyllium. Pl. 1 foot.


Cult. Sow the seeds in a warm sheltered situation in spring.


Lin. syst. Pentßndria, Digînîa. Margin of calyx 5-toothed (f. 64. a.). Petals acumination, reflexed (Ell.); anthers erect, adnate to the sides of the filaments (Ell.). Fruit flaky com-

X x
pressed (f. 64. c.) from the back. Mericarps with 5 filiform, rather keeled ribs, at equal distances, approximate; lateral ribs dilated into a membranous margin (f. 64. c.), broader than the fruit. Vitae solitary in the furrows, and filling them, and twin in the commissure. Carpophore bipartite. Seed flat.—Glabrous herbs, natives of North America, in marshes. Stems terete. Leaves reduced to petioles, which are terete, acute, fistulare, and jointed, without any leaflets. Involutae and involucres of 4-5 subulate leaves. Flowers white.—Habit of Sium, Čánáh, and Otoía, but the fruit is that of Anékthum, and the anthers are very different from those of all other umbelliferous plants.


Terete-leaved Tiedemanniæ. Pl. 1 foot.

Cult. Sow the seeds of this plant in a pot filled with peat, and place a pan of water under it.

CIV. ARCHEMÓRÁ (from Archemorus, in mythology, son of Lycurgus, slain by an adder; in reference to the poisonous quality of the plants). D. C. coll. diss. 5. p. 52. prod. 4. p. 188.

LIN. SYST. Pentándria, Digynia. Margin of calyx 5-toothed. Petals obcordate, with an inflexed point. Fruit compressed from the back, flat, oval, or obovate. Mericarps with 5 filiform, rather keeled ribs at equal distances, approximate; lateral ones dilated into a membranous margin, which is almost broader than the seeds. Vitae solitary in the furrows, and filling them; but twin in the commissure. Carpophore bipartite. Seed flat.—Marsh herbs, natives of North America. Leaves pinnate. Involute wanting, or of few leaves; involucres of many leaves. Flowers white. Habit of Čánáh or Sium. Fruit of Pastináca.

1 A. ambigüa (D. C. prod. 4. p. 188.) stem smooth; leaves pinnate; with 3-5 pairs of linear, sessile, undivided, acute leaves; involucrum wanting; involucres of 3-5 subulate leaves; fruit oval. 2. B. H. Native of New Jersey, and about Philadelphia, in marshes. Čánáh ambiguus, Nutt. gen. amer. 1. p. 189. Pastináca ambiguus, Torr. fl. un. st. 1. p. 315. Sium longifólium, Pursh, fl. amer. sept. 1. p. 194. Habit almost of Čánáh peucedanifólia, ex Nutt. Hardly distinct from the following. This is a truly poisonous herb.

Ambiguous Archemora. Pl. 6 to 10 feet.


3 A. tricuspidáta (D. C. prod. 4. p. 188.) leaves pinnate; lower leaflets lanceolate; upper ones obovate, tridentate; involucrum caducous. 2. B. H. Native of Carolina, in humid places. Sium tricuspidatam, Ell. sketch. 1. p. 354. Sium rigidus, Walt. cit. 114. According to Elliot, this is very like the preceding species.

Tricuspidate-leafletted Archemora. Pl. 2 feet?

4 A. denticuláta (D. C. prod. 4. p. 188.) leaves pinnate; with usually 3 pairs of oval, denticulated, acute leaflets; involucres of 2 leaves, rarely wanting. 2. B. H. Native of Georgia, in humid places, and along the sides of water. Stem 3-4 feet high.

Denticulate-leaved Archemora. Pl. 3 to 4 feet.

Cult. The species of Archemóra grow best in peat earth, in a moist situation; and they will be easily increased by dividing at the root.


LIN. SYST. Pentándria, Digynia. Margin of calyx obsolete, or minutely denticulated. Petals roundish, entire; involute: with a broad, retuse point. Fruit compressed from the back, girdled by a dilated, complanate margin. Ribs of mericarps very slender: the 3 dorsal ones at equal distances: and the 2 lateral ones contiguous to the dilated margin. Vitae linear, acute, hardly shorter than the ribs, solitary in the furrows, but twin or more in the commissure. Carpophore bipartite. Seed flat.—Herbs with fusiform, usually fleshy roots. Leaves pinnate; leaflets toothed, cut, or lobed. Umbels compound. Involute and involucres none, or of very few leaves. Flowers yellow.


The garden parsnip, is called Panaís, in French, Pastinake in German, and Pastinaca in Italian. It has smooth leaves, of a light yellowish green colour, in which it differs from the wild plant, the leaves of which are downy and dark green; the roots also are thick and fleshy, and have a milder taste; it does not differ so much from the native plant, as the cultivated does from the native carrot.

Use.—The parsnip has long been an inmate of the garden, and was formerly much used. In Catholic times it was a famous
The leaves are long; roots generally from 20-30 inches long, and from 3 to 4 in diameter.

2. The leaves are somewhat stronger and taller than those of the common sort. The roots are oblong, about 18 inches long, more swollen at the top, and not tapering gradually, but ending rather abruptly, about 4 inches in diameter at the shoulder.

4. The leaves of this sort are few, and do not exceed 12 or 13 inches; the roots are from 4 to 6 inches in diameter, funnel-shaped, tapering very abruptly, with a strong tap-root, the whole being from 15 to 15 inches long. The shoulder is broad, and grows above the surface of the soil. The flavour of this parsnip is superior, and when dressed is of a yellow colour than the other varieties.

Soil.—The soil most proper for the parsnip should be light, free from stones, and deep. It should be dug or trenched before sowing, at least 2 spits deep; and the manure should either be perfectly decomposed, or if recent, deposited at the bottom of the trench.

Seed estimate and sowing.—Sow in the end of February, or in March, but not later than April, and for a seed-bed 5 feet by 20, the plants to remain thinned to 8 inches' distance, half an ounce of seed is the usual proportion. Having prepared either beds 4 or 5 feet wide, or one continued plot, sow broadcast, moderately thin, and rake the seed well into the ground.

Culture.—When the plants are about 1-2 or 3 inches high, in May or June, let them be thinned and cleared from weeds, either by hand or by small hoeing, thinning them from 8 to 12 inches' distance. Keep them afterwards clean from weeds, till the leaves cover the ground, after which no further culture will be required. The roots will be pretty large by the end of September, from which time a few may be drawn for present use: but the parsnip is far best at full maturity, about the close of October, indicated by the decay of the leaf. The root will remain good for use till April and May following.

Preserving during winter.—The parsnip is not so liable as the carrot to be hurt by frost if left in the ground. But it would be proper in the beginning of November, when the leaves decay, to dig up a portion of the roots, and to cut the tops off close, laying them in sand, under cover, ready for use in hard frosty weather. The rest will keep good in the ground till they begin to shoot in the spring; then in February or March dig them up; cut the tops off; and, preserved in sand, the roots will remain sound till about the end of April.

To save seed.—Transplant some of the best roots in February, 2 feet asunder, inserted over the crowns; they will shoot up in strong stalks, and produce large umbels of seeds, ripening in autumn.

Field culture of the parsnip.—The parsnip has been partially introduced of late years as a field plant, and is nearly equal to the carrot in its product of nutritive and saccharine matter. Its culture as a field plant has been chiefly confined to the island of Jersey, where it attains a large size, and is much esteemed for fattening cattle and pigs. It is considered rather more hardy than the carrot, and its produce is said to be greater. It may be sown either in autumn or spring, and its seeds admit of drilling by machinery. The plants, when they come up, are more easily recognised than carrots, and therefore their culture is on the whole more simple, less dependent on manual labour, and therefore more suited to farming. For the rest their culture is the same as that of the carrot. The variety best suited for the field is the Large Jersey, the seed of which should be procured from the island, as that of the garden parsnip sold by seedsmen never attains the same size. The quantity of seed required for sowing in drills is from 3 to 5 lbs. per acre, and for broad-cast 6 or 8 lbs. It must always be new, as two year old seed does not come up freely. It may or may not be prepared by steeping, but it requires no earth or sand intermixed with it, as it passes freely through the same drill that will sow tares or pease. The time of sowing is generally about the middle of February; but some sow in September, in which case the seed does not vegetate till early in spring. This last method is obviously against the culture of the soil, which must thus remain a year in a consolidated state. The manner of sowing is generally in drills 15 or 18 inches distant; but some sow broad-cast and harrow in the seed; and in Jersey, parsnips and beans are generally cultivated together. The beans are first dibbled in, and afterwards the parsnip seed scattered over the surface and harrowed. It is acknowledged that a good crop of both plants is never obtained; and therefore, though this mode may be found to answer in the mild climate of Jersey, it is not to be imitated in other places. Drills or broadcast, without any intermixture of plants, are the only advisable modes. The after culture of the parsnip is the same as that for the carrot, with this difference, that the parsnip, when sown broad-cast, is generally thinned out to 12 inches at an average, plant from plant, and when in rows 18 inches apart, to 9 inches in the row. The produce of the parsnip is said to be greater than that of the carrot, and the economical application the same. In the fattening of cattle it is found equal if not superior, performing the business with as much expedition, and affording meat of exquisite flavour, and a highly juicy quality. The animals eat it with much greediness. It is reckoned that thirty perches, where the crop is good, will be sufficient to fatten an ox 3 or 4 years old, when perfectly lean, in the course of 3 months. They are given in the proportion of about 30 pounds weight morning, noon, and night; the large ones being split in 3 or 4 pieces, and a little hay supplied in the intervals of those periods. And when given to milch cows with a little hay in the winter season, the butter is found to be of as fine a colour and as excellent a flavour as when feeding in the best pastures. Indeed, the result of experiment has shown that not only in neat cattle, but in the fattening of hogs and poultry, the animals become fat much sooner, and are more bulky than when fed with any other root or vegetable; and that, besides, the meat is more sweet and delicious. The parsnip leaves being more bulky than those of carrots may be mown off before taking up the roots, and given to cows, oxen, or horses, by whom they will be greedily eaten. Their produce in nutritive matter is 99 parts in 1000, of which 9 are mucilage and 90 sugar. Gerarde says, that a very good bread was made from them in his time. They afford as much spirit as the carrot. The parsnip being more hardy and luxuriant than the carrot, is less liable to the mildew and worms; but equally so to become forked if the soil be not deep and well pulverised, and if the manure be not minutely divided and equally distributed.
Cultivated or Garden Parsnip. Fl. Jul. Brit. Pl. 3 to 4 ft. 2 P. latifolia (D. C. mem. soc. vol. 4, prod. 4. p. 189.) stem terete, striated, pubescent, as well as the petioles and leaves on the under surface; leaves pinnate; leaflets of the lower leaves large, and dilated at the base, and rather cut; of the cauline leaves ovate; involucra and involucres wanting; teeth of calyx obsolete; fruit oval: having the commissure furnished with 2 vittae. 2. H. Native of Corsica, where it was gathered by Soleiro. It differs from P. sativa in the stem being terete, not furrowed; and from P. divaricata in the fruit being oval, not orbicular, in the commissure being furnished with 2 vittae, not with 4-6; and from the other species in the leaflets of the radicles being large.


Var. b, glabrata (D. C. prod. 4. p. 189.) leaves glabrous above, hardly pubescent beneath. 2. H. Native country unknown, but cultivated in the botanic garden at Geneva.

Broad-leaved Parsnip. Fl. Ju. Jul. Clt. 1830. Sh. 3 to 4 ft. 3 P. divaricata (Desf. cat. hor. par. 1815. p. 189.) stem terete, striated; leaves pinnate, clothed with short pubescence on both surfaces; radical leaves with 0-11 leaflets; cauline ones with 3-5; leaflets ovate, cuneate at the base, or cordate, undivided, sharply serrated: teeth mucronate; terminal leaflet longest and somewhat 3-folded; involucra and involucres wanting; fruit nearly orbicular. 2. H. Native of Corsica, at Bastia. P. graveolens, Salzm. exsic. Koch, umb. 91. but not of Bieb. P. sativa, Thom. exsic. P. velutina, Koch, in litt. P. Kóchí, var. Duby, in bot. gall. 1. p. 230. Vitta 4-6 in the commissure, usually interrupted, 2 of which are generally larger than the rest.

Divaricata Parsnip. Pl. 3 to 4 feet. 4 P. lu'cida (Linn. nat. 58.) stem furrowed, much branched; leaves glabrous, stiff, crenated, reticulated beneath; radical ones cordate, usually lobed; cauline leaves ternate or quinate; leaflets attenuated at the base: upper ones ovate-rhomboid; umbels numerous; rather panicked; involucra of 1 leaf; fruit orbicular. 2. H. Native of Balearic Islands. Gounan. ill. 19. t. 11, 12. Jacq. hor. vind. t. 199. Root thick, milky. Stem when cut yielding a whitish, fetid, rue-like, tanecous gum. Yellow flowers.

Shiny Parsnip. Fl. June, Jul. Clt. 1771. Pl. 3 to 4 ft. 5 P. umbrosa (Stev. in litt. ex D. C. prod. 4. p. 189.) stem furrowed, angular; leaves pinnate, pubescent on the nerves and petioles; leaflets oval-oblong, serrate-toothed: terminal leaflet somewhat 3-folded; umbels numerous, rather panicked; involucres dimidiate; fruit oval. 2. H. Native of Tauria. This species was formerly confused with P. graveolens, but is truly distinct from it.

Shady Parsnip. Pl. 2 to 3 feet. 6 P. stenoca'ra (D. C. prod. 4. p. 189.) stem striated, glabrous; leaves smoothish, pinnate; leaflets decurrent, oblóng-linear, cut, and toothed; involucre wanting; involucres of few leaves; fruit oblong.—Native of Siberia. Umbels and umbellules of many rays. Fruit 3 lines long and a line broad, quite glabrous; lateral ribs not expanded into wings, but all filiform, as well as the vittae. Vitta twin in the commissure, solitary in the dorsal furrows, and often wanting in the lateral furrows.


Strong-scented Parsnip. Fl. Jul. Aug. Clt. 1817. Pl. 2 ft. 8 P. s'ekakul (Russ. besch. aep. l. p. 157.) stem terete, downy, branched; leaves pinnate, puberulous; leaflets pinnatifid, cut, bluntly and unequally toothed; peduncles villous; involucre none; involucres of 1-2 leaves; fruit ovate-ornicular. 2. H. Native of Syria, about Aleppo; and of Egypt, near Alexandria. Héracleum púllum, Viv. in litt. Tordylium suavéolens, Delille, ill. fl. aepyt. no. 323. Pastinaca dissécta, Vent. celt. t. 78. Scealáu, Rauw. reis. 1. p. 746. ex Vent. J. Bauh. hist. 3. p. 66, with a figure.—Moris, exoon. sect. 9. t. 4. ultimate figure, and therefore Tordylium Scealakul, Mill. dict. no. 5. Root grey on the outside and white inside, edible. According to Olivier this species of parsnip is cultivated in the Levant under the name of Sceakul.

Sceakul Parsnip. Pl. 1 to 2 feet. 9 P. pimpinelli'o'des (Bieb. fl. taur. 1. p. 237. suppl. 247.) stem angular, branched; leaves pinnate, pubescent; leaflets rather trifid, cut: segments cuneate, deeply serrated: lower ones reflexed: upper ones linear-lanceolate; involucra of 1-3 leaves; involucres of 4-5 leaves, dimidiate, deciduous; fruit orbicular. 2. H. Native of Caucasus and Iberia, in grassy places; and of Persia, near Seichkhozi, in sandy places. Buxb. cent. 3. t. 27. Mill. fig. t. 266. Malabanía pimpinellifolia, Hoffm. umb. 126. and 209. t. 1. f. 6. a. b. Héracleum pimpinellifolium, Spreng. tent. 12.


Cult. The species are only to be increased by seed, which should be sown in spring in the open ground.

CIV. Leiotulus (from λειός, leios, smooth, and νος, nos, an ear; in allusion to the smooth dilated margin of the fruit). Ehrenb. in Linnæa. 1829. p. 399. D. C. prod. 4. p. 699.

Lin. syst. Pentándria, Digynia. Teeth of calyx obsolete. Petals roundish, entire, involute, with a broad retuse segment. Fruit flattened compressed, having a smooth thickened dilated margin: and 3 intermediate approximate ribs, and 2 very remote lateral ones; vittæ filiform, solitary in the furrows, and distant in the commissure.—Herb a span high. Leaves bipinnatifid. Involucre wanting. Involucres of a few very fine entire leaves, but often wanting altogether. Flowers yellow.

1 L. Alexander'nes (Ehrenb. l. c.)—Native of Egypt, near Alexandria, on hills towards Rosetta.

Alexanderian Leiotulus. Pl. 1 to 1/2 foot.

Cult. Sow the seeds in a warm sheltered situation in the open ground.

CIVII. Astyda'mia (a mythological name, daughter of Oceanus; the plant grows on the borders of the ocean, in the Canary Islands). D. C. coll. diss. 5. p. 53. t. 1. f. D. prod. 4. p. 190.

the 2 lateral ribs lost in the margin. Dorsal vittae very few, and the commissural ones are either wanting or covered. Seed unknown.—A smooth, fleshy subshrub. Leaves pinnae; leaflets cuneate, deeply toothed at the apex: ultimate ones confluent. Umbels compound. Involuta and involucres of many leaves. Flowers yellow. It differs from *Crichtum* and *Bupleurum* in the flower being compressed from the back, and in the calyx being 5-toothed; and from *Heracleum* in the vittae not being club-shaped, and in the petals being entire; and from *Laserpitium* in the ribs being hardly elevated, and in the petals being entire; and from *Pastinaca*, to which it is most nearly allied, in the fruit rather being fusingly and a little crested, with the margins hardly flattened.


*Canary-island* Astydemia. Fl. Jul. Clt. 1780. Sh. 1½ ft. Cult. This plant will require the same treatment as is recommended for *Crichtum*, p. 321; but it will require shelter in winter.

**CXLV. SYMPHYLOMA** (from σύμφυος, συμφυκον, to glue together, and λωμα, loma, a fringe; the margins of the mericarps are closely joined together). Meyer, verz. pflanz. p. 127.

Lin. syst. Pentándria Dígnia. Margin of calyx obsolete. Petals equal, emarginate, with an inflexed point. Stylodium without a margin. Styles reflexed. Fruit elliptic, compressed from the back, flat, with rounded margins; mericarps closely joined together at the margins; with 5 filiform ribs; the 3 dorsal ones at equal distances; and the lateral ones more remote and almost marginal. Vittae wanting or obsolete. Seed complanate. Carpophore wanting.—A humble herb. Leaves with 3-5, nearly orbicular leaflets. Involuta none. Petals red. Fruit very singular in its structure, by the mericarps being closely joined at the margins.


Lin. syst. Pentándria, Dígnia. Calyx 5-toothed. Petals obovate, emarginate, with an inflexed point: outer ones usually radiating and bifid. Fruit flatly compressed from the back, girdled by a flat, dilated margin. Mericarps with slender ribs: the 3 dorsal ones at equal distances: and the 2 lateral ones remote from the others, contiguous to the dilated margin. Vitellate solitary in the furrows, and usually twin in the commissure, all flat: dorsal ones 4.—Strong, coarse, robust herbs, with broad, pinnate, ternate, or lobed leaves; petioles large and sheathing. Umbels of many rays. Involuta caducous, usually of few leaves; involucres of many leaves. The species are extremely intricate, and difficult to define.

**CXXI. SYMPHYLOMA**. CIX. HERACLEUM. 341


1 H. *Nepálensis* (D. Don, prod. fl. nep. p. 185.) stem furrowed, rather hairy; lower leaves having the petals twice trifid, binate: with triradiate leaflets; upper leaves ternate: with rather 3 lobed leaflets; leaflets all ovate, acute, and equally serrated, rather hairy above, and pubescent along the nerves beneath: fruit elliptic; commissure furnished with 4 vittae. 7 H. Native of Nipaul. Flowers equal, yellowish. Knees of stems bearded with white wool.

*Nipaul* Cow-parsnip. Pl. 3 to 4 feet.

2 H. *Obtusifolium* (Wall. mss. ex D. C. prod. 4. p. 191.) stem striated, pubescent; leaves ternate or 5-lobed, roundish-cordate; leaflets or lobes obtuse, with a few coarse teeth, rather hairy above, and beset with whitish pubescence beneath; umbels of many rays; fruit ovobovate; commissure furnished with 4 vittae. 7 H. Native of Nipaul. Dorsal vittae linear. Flowers not radiating, cream-coloured. *Obtuse-leaved* Cow-parsnip. Pl. 3 to 4 feet.

3 H. *mu'gens* (Wall. mss. ex D. C. prod. 4. p. 191.) stem striated, pubescent; leaves ternate, with the petals rather hairy; leaflets petiolate, orbicular, rather cordate at the base, toothed, seaborous from hairs above, pubescent beneath; upper leaves bluntly trifid; fruit ovobovate-elliptic; commissure furnished with 4 vittae. 7 H. Native of the East Indies. *Cómium rigens*, Heyne, ex Wall. Leaves of involucres lanceolate, striated, puberulous on the outside. Flowers not radiating, cream-coloured. Dorsal vittae of fruit linear.

*Stiff* Cow-parsnip. Pl. 2 to 4 feet.


4 H. *Flaves'cens* (Baumg. fl. trans. 1. p. 214.) leaves pinate, rough from hairs; leaflets ovate or oblong; flowers yellowish, not radiating; commissure furnished with 2 vittae. 7 H. Native from Dauphiny to Siberia, in the grassy parts of mountains. Jacq. aust. 2. t. 173.

Var. a, *latifolium* (D. C. prod. 4. p. 191.) leaflets lobed or palmately parted, unequally crenate-serrate; flowers uniform, not radiating; fruit orbicular-oval, glabrous, emarginate at the apex. 7 H. Native of Tauria, Caucasus, Siberia, Dachuria, and many other parts of Russia, in rather humid meadows. H. *Sibíricum*, Lin. mant. 354. Beib. fl. taurn. and suppl. no. 556. Hoffm. umb. 143. t. 1. B. f. 1. Schult. syst. 6. p. 475. H. *Austriacum*, Pall. ind. taurn. Spondylyum confórneum, Mrench, mth. p. 83.—Gmel. sib. 1. t. 50. From this plant a spirit is made at Kantschatka, called raka, as related in Cook’s voy. 3. p. 337, where the process of making the spirit is described. It is used also as food.

Var. β, *angustifolium* (D. C. prod. 4. p. 191.) leaflets oblong, lanceolate, or linear, sinuately toothed, ultimate ones confluent. 7 H. Native of Dauphiny, Vallais, Austria, Russia, &c. in waste, grassy fields. H. *angustifolium*, Lin. mant. 56. Jacq. fl. aust. t. 173. H. *Sibíricum* of Lin. has been raised from the seeds of *H. angustifolium*.

*Yellowish* Cow-parsnip. Fl. Ju. Jul. Clt. 1789. Pl. 4 to 6 ft. 5 H. *Osa'nt' (Guss. pl. rar. p. 133. t. 57.) stem furrowed, muricate, almost simple; leaves simple, cordinate, glabrous on both surfaces, rather coriaceous, obscurely lobed, and triplicate.
crenate-serrate; lobes acuminate; flowers rather radiating; involucra almost wanting; leaves of involucres linear; fruit obovate. 2. H. Native of Abruzzo, in gravelly parts of mountains. Habitat of *H. alpinum*, but the flowers are greenish.

Commisssure of fruit furnished with 2 vitte.

*Oryin* Cow-parsnip. Pl. 2 to 3 feet.

6 H. alpinum (Sibth. and Smith, fl. grcc. t. 282, prod. 1. p. 192.) stem much branched; leaves pinnate; leaflets lobed, cut, pubescent: of the radical ones roundish; umbels usually of 3 rays; flowers radiating; fruit orbicular; involucra and involucres almost wanting; vitte semi-circular. 2. H. Native on Mount Parnassus. Habitat of *Pastinaca sativa*; but the petals are obsolete, with an inflexed mucrone. Flowers golden yellow. Vitte linear.

Golden-flowered Cow-parsnip. Pl. 1 to 2 feet.


7 H. longifolium (Jacq. austr. t. 174.) leaves scabrous, pinnate, or pinnatifid from the coalition of the leaflets; leaflets or lobes elongated, deeply crenated; leaves of involucres linear-setaceous; fruit glabrous, cuneiform. 2. H. Native of Austria, in alpine meadows. Host. fl. austr. 1. p. 374. An intermediate species between *H. flavescens* and *Spondylium*. Petals at first green, but at length becoming white, obcordate; outer ones radiating a little. Fruit larger and more much cuneated than in the above-mentioned species.


8 H. palmatifolium (D. C. prod. 4. p. 192.) upper cauline leaves 5-parted from the top of the sheath, or 3-parted; outer lobes bipartite, all elongated, coarsely toothed, glabrous above, but roughish beneath; leaves of involucres linear-setaceous; fruit glabrous in all states, obovate. 2. H. Native country unknown. Flowers white, radiating a little. It differs from *H. Spondylium* in the leaves being palmate-parted, not pinnate-parted, less rough, and in the fruit being more obovate. Probably *H. elegans* of many authors is the same as this species.

Palmate-lobed Cow-parsnip. Pl. 4 to 5 feet.

9 H. Spondylium (Lin. spec. 1. p. 556.) leaves ternate, pinnate, or pinnatifid from the coalition of the leaflets, scabrous; leaflets pinnatifid, cut, and serrated; leaves of involucres lanceolate, membranous, finely fringed, with long taper points; fruit orbicular, glabrous. 2. H. Native of Europe, and probably of Siberia, in hedges, the borders of fields, and rather moist meadows, very common; plentiful in some parts of Britain. Smith, engl. bot. t. 999. Hayn. arz. gew. 7. t. 10. H. protetorius, Crantz, austr. 5. p. 11. H. bráncia usrins, All. pedem. no. 1291. *Spondylium* Rall, syn. 256. Ger. emac. 1009. with a figure. Camer. epat. 546. with a figure. Riv. pent. irr. t. 4. and of many other old authors. Spondylium brácea, Stev. law. no. 355. *Spondylium* brácea usrins, Hoffm. umbb. 192. t. 1. f. 11.—Acánthus Germánica, Fuchs, hist. 53. with a figure. Cow-parsnip. Petiv. herb. brit. t. 24. f. 1. Root taper-shaped, whitish, aromatic, sweetish, and rather mucilaginous. Stem rough, with white hairs. Flowers more or less radiant, white or reddish. The whole plant is wholesome and nourishing food for cattle; and it is gathered in Sussex for fattening hogs, being known by the name of hogseed. The seeds are strong-scented, and are accounted diuretic and stomachich. Linneus says the plant is used in Scania against dysentery. Gmelin says that the inhabitants of Kamtschatka, about the beginning of July, collect the footstalks of the radical leaves, and after peeling off the rind (which is very acid) dry them separately in the sun, and then tying them in bundles, lay them up carefully in the shade

in bags; in this state they are covered with a yellow saccharine efflorescence, tasting like liquorice; this being shaken off is eaten as a great delicacy. The Russians distil an ardent spirit from the stalks thus prepared, by first fermenting them in water, with the greater bilberries (*Vaccinium uliginosum*), which Gmelin says is more agreeable to the taste than spirits made from corn.

*Var. angustifolium* (Smith, fl. brit. 307.) leaves deeply pinnatifid; the 2 lowest lobes elongated, and spreading in a radiating manner. 2. H. Native of Yorkshire. Mr. Woodward has found this variety growing on the same root with the common kind.

*Var. g. elegans* (Jacq. austr. t. 175.) leaflets decussate, narrow, toothed. 2. H. Native of Austria, Piedmont, &c.

*Var. g. laciniatum* (Desf. hort. par. ex D. C. prod. 4. p. 192.) leaflets cutinate, ovate, coarsely and deeply serrated. 2. H. Native country unknown.

*Var. g. subcannascentis* (D. C. prod. 4. p. 192.) leaves canescent beneath. 2. H. Native of France. This variety differs from *H. Pyrenaeica* in the ovaries being glabrous.


10 H. Cashpicum (Hortul. ex D. C. prod. 4. p. 192.) leaves pinnate, scabrous; leaflets elongated, cut, and toothed, acuminate; leaves of involucres linear, broadest at the base; leaves of involucres setaceous, ciliated on both sides with long villi; fruit obovate, glabrous in all stages. 2. H. Native about the Caspian sea. This species is sufficiently distinct from any of the varieties of *H. Spondylium*.


11 H. Canadiens (Wall. mss. ex D. C. prod. 4. p. 192.) leaves ternate, clothed with hoary tumenuntum beneath, as well as on the stems and petioles, but smoothish above; leaflets petiolate, cuneated at the base, trifid or pinnatifid; lobes irregularly toothed; leaves of involucres linear, acuminate, about equal in length to the rays; fruit obovate-oblong; vitte linear.

Whitened Cow-parsnip. Pl. 4 to 5 feet.

12 H. Lanatum (Michx. fl. bor. Amer. 1. p. 166.) leaves ternate, petioloate, tomentose beneath: upper ones 3-lobed; leaflets petiolate, broad-ovate, roundish-cordate, lobed; leaves of involucres small, subulate; fruit broadly obovate, oval. 2. H. Native of Virginia, Pennsylvania, and Canada, as far as the Mackenzie river; moist banks of streams in north-west America, in humid pastures. Pursh, fl. Amer. sept. 1. p. 181. Begel. fl. bot. p. 67. Torr. fl. bor. Amer. 1. p. 313. H. Spondylium, Cham. et Schlecht. in Linnaea. 1. p. 39. Petals said to be oblum. The plant is said to be very nearly allied to *H. Spondylium*, but very distinct. The roots and stems of this plant are eaten by the Chenook Indians; and by the Cree Indians, under the name of Penpoo antico; i.e. flute stem; and the young stems are used by them as a pot-herb.


13 H. Cordatum (Presl, del. prag. p. 138.) leaves ternate; leaflets cordate-ovate, petioloate, lobately pinnatifid, mucronately toothed, hispid beneath, as well as the petioles and stem, which is furrowed; leaves of involucres linear; involucra wanting; fruit glabrous, obovate, somewhat emarginate at the apex. 2. H. Native of Sicily, in humid groves on the Nebrodi. Root black, sweet-scented, and is called *Angélica* by the Sicilians, and is used for the same purposes by them. H. Spondylium and H. Pinnaces Ucrina, ex Guss. prod. fl. sic. 1. p. 364.

*Cordate*-leafletted Cow-parsnip. Pl. 4 to 6 feet?

14 H. Pyrenaicum (Lam. dict. 1. p. 403.) leaves very large, palmatifid, hoary from tumenuntum beneath; leaflets lanceolate, toothed or ternate; involucre of few leaves; young fruit covered with long hairs: adult ones glabrous, nearly orbicular.

Pyrenean Cow-parsnip. Fl. June, July. CIt. 1798. Pl. 4 to 6 feet.

15 H. Panaceae (Lin. spec. p. 358.) leaves pinnate, canescent beneath; leaflets on long petioles, cordate, usually 3-lobed, toothed; leaves of involucres linear-setaceous; young fruit bearing a few scattered hairs. H. H. Native of the southern Alps of Europe. Lob. icon. t. 701. f. 2. Mor. ox. sect. 9. t. 17. f. 3. H. setosum, Laperey. abr. p. 153?

True Cow-parsnip. Fl. July; Aug. CIt. 1796. Pl. 6 feet.

16 H. astraenum (Bieb. fl. taur. suppl. p. 224.) stem rough from strigae; leaves deeply lobed, serrated, acute, scabrous above, pubescent beneath; umbels of 40 rays; leaves of involucres linear-setaceous; fruit orbicular-elliptic, when dry orbicular-scabrous. H. H. Native of the north of Caucasus, on Mount Beschtan; and according to Koch also of the Alps of Bavaria and Tyrol. Spondylum â€˜asperum, Hoffm. umb. p. 134. Dorsal vitice 2 longer than the lateral ones; all filiform; those in the commissure evidently clavate. In the cultivated plant the fruit is nearly glabrous even when young.

Rough Cow-parsnip. Fl. June, July. CIt. 1818. Pl. 6 to 8 ft.

17 H. villus (Fisch. in Schultes, syst. 6. p. 579.) leaves sinuately pinnatifid, sharply serrated, acuminated, clothed with hoary tomentum beneath; leaves of involucra and involucres setaceous, deflexed; umbels sparingly radiant; fruit elliptic, ciliated, woolly on the back. H. H. Native of Caucasus, in gravelly places on the margins of rivulets. Stev. obs. 1828. p. 72. H. Pyrenacium, Bieb. fl. et suppl. no. 559, but not of Lam. H. decipiens and H. marginatum, Hoffm. umb. p. 134 and 135. and probably H. giganteum, Horn. hort. hain. ex Prescott. Leaves as in H. Pyrenacium hoary beneath, but differs in the young fruit being tomentose, and in the adult ones being roughly ciliated. Vitice broad; the dorsal ones drawn out beyond the middle, and filling the furrows; the commissural ones short, rarely somewhat branched. There are varieties with larger and smaller fruit.

Var. B, subellusium (Hoffm. umb. gen.) fruit covered by scattered rather loose hairs; leaves less canescent beneath.

Villosum Cow-parsnip. Fl. July. CIt. 1856. Pl. 4 to 6 feet.

18 H. rubescens (Bieb. suppl. p. 225.) leaves pubescent beneath; cauleine leaves ternate; leaflets somewhat palmately pin natifid, toothed; segments and recesses acute; umbels of many rays; involucra of 1-2 leaves; involucres short, caducous, of few leaves; fruit elliptic, having the disk rather villous. H. H. Native of the south of Tauria, in shady places; and of Eastern Caucasus, in alpine places. Spondylum rubescens, Hoffm. umb. p. 134. H. speciosum, Ledeb. hort. dorp. p. 77. H. Pana ces, Steven. mem. misc. 3. p. 259? To this species is probably referrible the H. gummiferum, Willd. enum. p. 321. Hort. berol. 1. p. 53. t. 53. and t. 54. It differs, however, from H. Pyrenacium and H. Panaces, in the young fruit being clothed with short down, not with long spreading down. Fruit glabrous in the adult state; having the dorsal vitice slender, and drawn out and the middle, and being suddenly dilated into a club-shaped form at the apex. The young shoots are filled with a sweet aromatic juice, which is called Baldargan by the natives of Caucasus, and is eaten by them in a crude state.

Pubescent Cow-parsnip. Fl. July. CIt. 1823. Pl. 4 to 5 feet.

19 H. barbatum (Ledeb. fl. ross. alt. ill. t. 303.) leaves pinnate, with 2 pairs of leaflets; lower leaflets and terminal one sinuately pinnat-parted, petiolate; lobes acuminate, serrated; serratures ovate, acuminated; umbels radiant: fruit elliptic, beset with a few pili, somewhat emarginate at the apex; vitice in the commissure parallel. H. H. Native of Altai, in mountain meadows. Stem furrowed like the rest, beset with rigid pili, which rise from a callous or blackish point, and which are usually retrograde on the lower part of the stem; bearded with numerous pili at the knees. Petioles hispid, bearded at the insertion of the petioles. Leaves pubescent beneath, but green and furnished with a few stiff hairs beneath at the veins. Involucrum of one or few leaves, caducous; involucres of a few linear permanent leaves. To this plant may be referred the one in Gmel. fl. sib. 1. p. 213. no. 29. which Linnaeus has cited for his H. Panaces. It is called Sladkajatrawa, i.e. a sweet herb, by the natives of Siberia, a name given by them to many other plants, as to Liquorice and Milk-vetch, &c.

Bearded Cow-parsnip. Pl. 4 feet.

20 H. dissectum (Ledebe. fl. ross. alt. ill. t. 304. fl. alt. 1. p. 301.) leaves ternate; leaflets petiolulate; lateral leaflets pinnate-parted; terminal one pinnate-parted; segments cut or pinnatifid, oblone, acuminated, serrated; umbels radiant; mericarps orbicularly elliptic, at length glabrous; commissural vitice diverging. H. H. Native of Altai, in meadows, near Tschetschulicha, and the metal mines at Riddersak; and elsewhere. H. laciniatum, Fisch. in litt.? Stem deeply furrowed, sparingly pilose, hispid at the joints, villous towards the top. Leaves hispid above from a few thick hairs, but paler and pubescent beneath. Involucra wanting; involucres of a few linear leaves, which are variable in length. Flowers white.

Dissected-leaved Cow-parsnip. Fl. July. Pl. 3 feet.

21 H. douglasii (D. C. prod. 4. p. 193.) leaves scabrous beneath, and on the petioles, glabrous above, and ternate; leaflets petiolulate, corolate, 3-5-lobed, acuminated, toothed; leaves of involucra numerous, subulate at the apex; fruit obovate, glabrous; dorsal vitice elongated, rather club-shaped; commissural vitice 2, short, rather club-shaped, and 2 other small, nearly abortive ones. H. H. Native of the north-west coast of America. This may prove nothing but a variety of H. lanatum.

Douglas’s Cow-parsnip. Pl. 3 to 4 feet.

22 H. cuciniforme (D. C. prod. 4. p. 194.) leaves hispid beneath, as well as the petioles, glabrous above, pinnate; leaflets 3-5, petiolulate, corolate, lobed; lobes toothed, hardly acuminated; leaves of involucra many subulate; fruit obovate-cuneate, glabrous; dorsal vitice filiform; commissural vitice 2, rather clavate. H. H. Native country unknown, but probably of Siberia.

Cuciniform-fruit Cow-parsnip. Pl. 4 feet?

23 H. lucustifolium (Bieb. fl. et suppl. no. 560.) leaves decumbent, ternate or quiniminate pinnate, smoothish; leaflets cuneated, obtuse, deeply serrated; fruit villous; vitice filiform, acute. H. H. Native of Tauria, on stony hills; and of Caucasus, in subalpine places above Nikita, ex Stev. obs. 1828. p. 71. H. montanum, Georgi in Willd. herb. ex Stev. Stem angular, pubescent, as well as the young leaves. Flowers white, radiant. Commisual vitice equal in length to the dorsal ones.

Lovage-leaved Cow-parsnip. Fl. June, July. CIt. 1816. Pl. 2 feet.

24 H. Caucasiœ (Stev. mem. soc. hist. nat. misc. 3. p. 259.) leaves ternate; leaflets on long petioles, toothed, glabrous above, pubescently scabrous beneath: intermediate one 3-lobed. H. H. Native of Caucasus, on the mountains, at the river Jucharibasch. Flowers white, rather radiant. A plant like this from Iberia has the upper leaves ovate and 3-lobed, on long petioles, and the young fruit bristly.

Caucasian Cow-parsnip. Fl. June, July. CIt. 1818. Pl. 4 ft.
25 H. himile (Sibth. et Smith, fl. gracc. prod. 1. p. 198.) leaves rather bipinnate, cut, pubescent; stem nearly simple; umbels 4-7-rayed; fruit orbicular, smoothish. 3 H. Native of Greece, on Mount Olympus. Umbels large. Stems hardly a hand high. Vitae of fruit 4, red, oblong : the dorsal ones attaining the length of the middle.

**Humble Cow-parsnip.** Pl. ½ to ¾ foot.

Sect. IV. **Carmelina** (from Mount Carmelo, the habitation of the species). D. C. prod. 4. p. 194. Fruit ornamented with thick adpressed stiff bristles. Vitae not sufficiently known, but there are probably 4 dorsal ones, and 2 filiform hardly clavate commissural ones. Petals hispid; exterior ones radiant. Perhaps a proper genus, or perhaps only a species of **Zozimia** or Pastinacea.

26 H. Carmelina (Labill. syr. dec. 5. p. 3. t. 1.) leaves pinnate, scabrous from adpressed down beneath; leaflets ovate-oblong, deeply toothed: extreme one rather cordate, 3-lobed; rays of umbel 5, very unequal, contracted after flowering. 3 H. Native of Syria, on Mount Carmel. Involucra and involucels composed of erect permanent setaceous leaves. Bristles on the stem and branches retrograde.

**Carmelo Cow-parsnip.** Pl. 2 to 3 feet?


27 H. alpinum (Lin. spec. p. 359.) leaves cordate-roundish, smooth, palmately 5-crenate; lobes bluntish, crenately toothed, rarely cut; leaves of involucels setaceous; fruit obovate-orbicular. 3 H. Native of the Alps of Jura, in pastures, and at the borders of woods; as well as of the Alps of Dauphiny, Provence, and the Pyrenees. D. C. fl. fr. 4. p. 316. H. testiculatum. Lapeyr. suppl. p. 43.—C. Bauh. prod. 83. with a figure.—Barrel. icon. t. 55.


28 H. austriacum (Jacq. austr. t. 61.) leaves pinnate, with 2-3 pairs of leaflets, scabrous from scattered hairs on both surfaces; leaflets ovate-lanceolate, doubly serrated: terminal one somewhat 3-lobed. 3 H. Native of Austria, Carniola, and Transylvania, in alpine meadows. Crantz, austr. 153. t. 1. Spondylium Austriacum, Scop. carn. ed. 2. vol. 1. p. 204. t. 1. To this Sprengel refers Tordylum silifolium, Scop. carn. no. 318. t. 8. but it differs in the petals being red, and in the fruit being hispid from villi.


29 H. chorobanum (D. C. prod. 4. p. 194.) lower leaves ovate, somewhat lobed, serrated: superior ones cruciately pinnate; leaflets linear, all rather canescent beneath from down. 3 H. Native of Caucasus, about Nartzana and Kobi, among grass on the mountains. Said not to be distinct from H. Austriacum by Stev. obs. 1828. p. 70. Heraclæum longifolium, Bieb. fl. taur. 1. p. 223. exclusive of the synonymes. Wédnia Chorodanum, Hoffm. umb. 139. t. 1. β, and in lit. f. 12, 13. Fruit obovate. Commis sur vitæ wanting; but there are 4 dorsal ones which are clavate, and hardly attaining a third part of the length of the fruit. There is also a variety of this with rose-coloured flowers (H. rosœum, Stev. in mem. soc. mosc. 3. p. 260.) and more humble stem.

**Chorodanum Cow-parsnip.** Pl. 2 to 3 feet?

30 H. Minimus (Lam. dict. 1. p. 403.) plant dwarf, glabrous; leaves nearly all radical, bipinnate: leaflets lanceolate-linear, cut a little; involucra usually of one leaf; involucels wanting. 3 H. Native of the Alps of Dauphiny, but rare.

D. C. fr. 4. p. 316. H. bipinnatum, Cuss. H. pumilum, Vill. daubh. 2. p. 640. t. 14. Peucedanum Vochtorinum, Spreng. umb. spec. 51. Schultes, syst. 6. p. 571. It differs from Peucedanum in the petals being deeply emarginate; in the fruit being oval and flattened; in the vitæ extending nearly to the middle of the fruit, filiform, not saccate. It may hereafter prove also to be generically distinct from **Heraclæum**.

**Small Cow-parsnip.** Fl. May, July. Clt. 1810. Pl. 1 foot.

Sect. VI. **Trichochnnum** (from θριχος, thrichos, a hair, and γωνια, gonia, an angle; in reference to the stems being bearded at the joints or knees). D. C. prod. 4. p. 195. Commis sure without any vitæ. Umbels not radiant. Petals yellowish. Stems woolly or bearded at the joints.

31 H. wallchii (D. C. prod. 4. p. 195.) stem terete, hairy at the base, glabrous except at the knees or joints; leaves terinate, having a few scattered pilis above, and bearing a few small ones at the nerves beneath; leaflets lanceolate, acuminate, serrated, undivided, or the larger leaflets of the lower leaves are 2-lobed, and the terminal one 3-lobed. Involucra of 1-2 decidual leaves.—Native of Nipaul. Fruit obovate, nearly orbicular, with 5 slender ribs. Vitæ 4, linear, drawn out a little beyond the middle of the mericarps.

**Wallich's Cow-parsnip.** Pl. 2 to 4 feet?

† Species hardly known, but of most them may prove to be synonymous with those described above.

32 H. tuberosum (Molin, chil. ed. germ. p. 115. ex Willd. spec. 1. p. 1423.) leaves pinnate: with 7 leaflets; flowers radiant; root yellow, composed of tubers. 3 F. Native of Chili. The rest unknown.

**Tuberos-rooted Cow-parsnip.** Pl. 2 to 3 feet?

33 H. Tauricum (Fisch. in litt. ex Loud. hort. brit. p. 109.) 3 H. Native of Siberia. Perhaps the same as H. villósum.


34 H. verrucosum (Stev. in litt. ex Loud. hort. brit. p. 109.) 3 H. Native of Tauria. Perhaps the same as H. asperum.

**Warted-stemmed Cow-parsnip.** Fl. June, July. Clt. 1820. Pl. 7 to 8 feet.

Cult. All the species grow well in any soil, and are all easily increased by seed; and some of the perennial ones by dividing at the root.


Lin. syst. Pentáudria, Digynia. Calyx 5-toothed. Petals obovate, emarginate, with an indented point. Fruit flatly compressed from the back, and rather convex in the middle, more or less hairy, girded by a smooth thickened dilated margin. Mericarps with very slender ribs, the 3 dorsal ones at equal distances, and the 2 lateral ones more remote, and contiguous to the dilated margin. Vitae covering the whole seed, the dorsal ones solitary between the ribs, 4 on the back of each mericarp, and so large as to fill the furrows; but having 2 broad ones in the commissure. Carpophore bipartite. Seed flat.—Herbs, natives of the Levant, with decomposed leaves, compound umbels, many leaved involucra and involucels, and white flowers, which are not radiant. This is an intermediate genus between **Heraclæum** and Tordylum; but differs from the first of these in the margin of the fruit being thickened, not flat; and from the last in the margin of the fruit being smooth, not tubercular; and from both in the form and disposition of the vitæ.
1 Z. absinthifolium (D. C. prod. 4. p. 195.) stem furrowed; leaves supra-decompound, hoary and pilose; leaflets lanceolate, rather remote, and somewhat trifid, cuneate at the base, short.


2 Z. anethifolia (D. C. prod. 4. p. 196.) stem terete; leaves supra-decompound, glabrous, glaucous; leaflets linear, acute.

ζ. H. Native of Persia, between Teheran and Isphan. Habit of the first species. Involucela small, glabrous. Fruit more of an orbicular form than in H. absinthifolium, and beset with scattered down over the whole disk, but when young rather pilose.

Fennel-leaved Zozimia. Pl. 2 feet.

Cult. The seeds of these plants should be sown in the open ground in spring. A light soil suits them best.

CXI. POLYTÉNIA (from πολυς, many, and τενας, tanās, viita; the mericaps are furnished with many viitas). D. C. coll. mem. v. p. 53. t. 13. prod. 4. p. 197.

Lin. syst. Pentandria, Digynia. Calyx 5-toothed. Petals oval, emarginate, with an inflexed point. Fruit oval, compressed from the back, which is lenticular, quite glabrous, with a smooth margin, and a depressed dorsal area. Mericaps with very slender distinctly long ribs. Vittae twin between the ribs on the back, and 6 in the commissure. Carpophore indistinct. Seed complanate. An American glabrous herb. Upper leaves tripartite, opposite. Lateral flowering branches opposite. Umbels terminal. Involucera none. Leaves of involucels setaceous. Flowers yellowish in the dried state. This genus is allied on the one hand to Zozimia, and on the other to Tordylium.

1 P. Nuttāllii (D. C. l. c.) Native of North America, in the Arkansas territory. Tordylium Americānimum, Nutt. mas. Stem nearly terete. Leaflet trifid, cuneate at the base; lobes lanceolate, toothed at the apex.

Nuttall’s Polytienia. Pl. 1 foot.

Cult. See Zozimia above for culture and propagation.

CXII. JOHRENA (in honour of Mart. Dan. Johreni, who was the first to introduce the dichotomous method in botany). D. C. coll. mem. v. p. 54. t. 1. f. C. prod. 4. p. 196.

Lin. syst. Pentandria, Digynia. Teeth of calyx obsolete, very blunt. Petals unknown. Stylodium short, conical, a little furrowed; styles short, diverging, at length deciduous. Fruit oval, lenticularly compressed from the back, quite glabrous, rather spongy and suberosa, with a thin and smooth margin, and a flat rather coloured dorsal area. Mericaps with 3 dorsal filiform ribs, which at length become brownish, and therefore probably contain vitae; the 2 lateral ribs usually indistinct in the dilated margin: but sometimes rufous, and of the form of vitae. Commisură spongy, without any vitae, but furnished with 2 lines. Carpophore bipartite. Seed complanate. A quite glabrous herb, native of the Levant. Stem terete, dichotomous. Lower leaves bipinnate; leaflets opposite, 2 pairs and an odd one, distant, divided into 5 to 5 linear acute lobes, which are confluent at the base; superior leaves parted into 3 linear elongated, quite entire lobes; upper ones reduced to a narrow elongated sheath. Umbels of 8 to 2 rays. Involucera wanting or of one leaf; involucels of 4 to 5 linear setaceous leaves.

1 J. dichotoma (D. C. l. c.)—Native of the East, at Mount Lebanon. Hippomorathrum crithmi folio flore luteo, Vaill. herb. Dichotomous Johrenia. Pl. 1 to 2 feet?

Cult. See Zozimia above for culture and propagation.

Tribe VIII.

TORDYLIUM (plants agreeing with Tordylium in important characters), or Orthospérmæ paucijugata annulatæ, Koch, umb. p. 55. D. C. prod. 4. p. 196. Fruit lenticularly or flatly compressed from the back, girded by a thick dilated thickened knobbed or plicate margin. Mericaps with 5 very slender or obsolete ribs; lateral ribs contiguous to the dilated margin, or forming the same. Seed flat. This tribe differs from tribe Peucedanées, in the margin of the fruit being ribbed or plicate, not smooth, and quite entire.


Lin. syst. Pentandria, Digynia. Margin of calyx 5-toothed. Petals ovate, emarginate, with an inflexed point; outer ones radiant, bifid. Fruit round the rays of the umbels flatly compressed, with a somewhat thickened accessary wing margin, which is hardly tubercularly wrinkled; those of the disk dissimilar, having one of the mericaps contracted into a hemispherical urceolus around the other, which is abortive. Mericaps with very slender ribs, the 3 dorsal ones at equal distances, and the 2 lateral ones contiguous to the thickened margin, or covered by it. Vittae filiform, one in each furrow, and 2 in the commissure. Carpophore bipartite. Seed flattened. This genus hardly differs from Tordylium unless in the unequal mericaps of the fruit, and in their margins being hardly wrinkled, and quite smooth in the disk on both sides, as in Heracleum.

1 H. Àgyptiaca (Lin. amen. 4. p. 270. exclusive of the synonyms,) stem hispid; leaves scabrous, pinnate; leaflets pinnatifid; segments bluntly lobed; involucera and involucels small, setaceous. Ω. H. Native of Egypt and of Syria, on the sea shore. Jacq. hort. vind. t. 87. Tordylium Àgyptiacum, Lam. ill. t. 193. f. 2. Poir. dict. 7. p. 711. Flowers white. In this species the flowers sometimes have 5 to 4 styles. Carphophore green. Styles white, erect.


Cordate-leaved Hasselquistia. Fl. July. Cult. 1787. Pl. 2 ft. Cult. The species being natives of warm climates, the plants are difficult to preserve through the winter. The surest way to procure good seed is to sow in autumn, and preserve the plants in a frame or greenhouse till spring, when they should be planted out in a warm sheltered situation.

CXIV. TORDYLIUM (τορδύλιον of Dioscorides; said to Yy

Vol. III.

LIN. SYST. *Pentandria Digynia*. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point; outer ones radiating and bifid. Fruit drupe compressed from the back, girdled by a rugged tubercular thick accessory margin. Mericarps with very slender ribs; the 3 dorsal ribs at equal distances, and the 2 lateral ones contiguous to the thickened margin, or covered by it. Vitae filiform, one or more in the furrows, and 2 or more in the commissure. Carpophore bipartite. Seed complanate.—Herbs, with pinnate leaves; leaflets ovate, deeply toothed. Involuta of many leaves. Flowers white.

The two sections differ from each other in the number of vitae.

SECT. I. *Eutordylium* (from eu, well, and *tordylium*; this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 197.—Tordylium, Hoffm. umb. 1. p. 198. t. 3. f. 3-4. A. Koch, umb. 87. f. 24, 25. Vitae solitary in the furrows, and twin in the commissure.

1 T. SYRIAUM (Lin. spec. p. 345.) plant pubescent; leaves pinnate; leaflets roundish, repandly toothed: terminal one ovate; involucra and involucrals longer than the umbels. O. H. Native of Syria, Asia Minor, and Greece. Jacq. Hort. vindi. t. 54. Riv. pent. t. 3. Barbel. icon. t. 340.—Mor. ox. sect. 9. t. 16. f. 7. There is a variety of this with a simple erect stem; and another with diffuse procumbent stems.


2 T. MAXIMUM (Lin. spec. 345.) stem scabrous or hispid from retrograde bristles; leaves pinnate; leaflets lanceolate, deeply serrated and notched: terminal one elongated; leaves of involucra and involucrals linear, shorter than the umbels. O. H. Native of middle and south Europe, Caucasus, and the Levant, in cornfields. In England on banks and waste ground, but rare; about London; under a hedge on the north side of the parks, Oxford; in a hedge about half a mile from Eton. Smith, engl. bot. 1173. Jacq. austr. t. 142.—Mor. ox. 3. p. 516. sect. 9. t. 16. f. 1.—Rivin. pent. 1. t. 1.—Lob. icon. 737. Heracleum Tordylium, Spreng. spec. umb. 49. T. magnus, Broth. and T. Lusitanicum, Wield. does not differ from this species according to Link. Stem erect, branched, hollow. Leaves densely clothed with fine close bristly hairs, all directed towards the point; leaflets oblong-lanceolate, the lower ones umbel. Umbels dense, bristly. Flowers reddish, the outermost petal with equal lobes, the two next with extremely unequal ones.


SECT. II. *Condylacarpus* (from *co*ndylas, *kondylas*, a finger joint, and *kapros*, *karpas*, a fruit). Hoffm. umb. 1. p. 202. Koch, umb. p. 86, but not of Desf. D. C. prod. 4. p. 198. Vitae numerous both in the furrows and commissure. In the commissure there are 4 in *T. Hasselquatioe*, and therefore it is an intermediate plant between the two sections, as there are 8-10 in the commissure of the other species.

3 T. HASSELQUISTII (D. C. prod. 4. p. 198.) plant pubescent; leaves pinnate; leaflets roundish, repandly toothed: the terminal one in the lower leaves is reniformly cordate; leaves of involucra setaceous, shorter than the umbels: of the involucrals similar, but longer than the umbelles. O. H. Native of the Levant. Like *Hasselquatioe cordata*, but the character of the fruit is the same as that of *Tordylium*. Habit of *T. officinale*. Vitae in the commissure 4, 2 curved and 2 straight.

Hasselquist's Hart-wort. Pl. 1 foot.

4 T. OFFICINALE (Lin. spec. p. 346.) stem generally branch-ed, furrowed, clothed with soft deflexed hairs; leaves pinnate, rough; hair; leaflets ovate, cut, crenate, the odd one the largest, leaves of involucra and involucrals lanceolate, acute; those of the latter about equal in length to the umbelles; radiate petals in pairs, with very unequal lobes. O. H. Native of Portugal, south of France, Italy, Dalmatia, and Greece, in cultivated fields; possibly never seen at all in England, the *T. maximum* having been conformed with it; however, it is said to have been found by Mr. Doody about Isleworth, Ray, and about London. Petiver. Smith, engl. bot. 3440. fl. græc. 3. t. 267. —Colum. ecphr. t. 124. f. 1.—Mor. ox. 3. p. 316. sect. 9. t. 16. f. 6.—Dord. pemp. t. 313. f. 314. Lob. icon. 736.—Bauh. hist. 3. p. 84. f. 2. Small Hart-wort, Petiv. herb. brit. t. 24. f. 6. T. microspernum, Ten. add. 1827. Condylacarpus officinalis, Koch, l. c. Leaflets roundish or ovate, crenate, and variously cut. The radius of the umbelles formed of the very unequal outer petals of the flowers of the circumference, the large lobes of 2 flowers coming together, and resembling a single petal. These lobes are sometimes reddish. Fruit hairy on the disk, brown, with scarcely any ribs or veins; the border greatly elevated, tumid, neatly crenate transversely. *T. Aplanum* is readily distinguished from this species by having in each marginal flower only one radiant petal, with 2 equal lobes.


5 T. APLANUM (Riv. pent. t. 2.) plant erect, villous below; leaves pinnate; leaflets of the lower leaves roundish, cuneated at the base, lobately crenated; of the upper ones pinna-tid, linear, acute; leaves of involucra and involucrals setaceous; those of the latter shorter than the umbelles. O. H. Native of Apulia and Greece, in cultivated fields. Lin. spec. 345. exclusive of the synonyms.—Jacq. hort. vindi. t. 55. T. grandiflorum, Moench, meth. p. 78. Condylacarpus Aplanum, Hoffm. umb. p. 203. T. insole, Clark in Spreng. neue entd. 3. p. 165. There is a variety of this which is almost glabrous below. Stem hairy at the joints.


*Apulian* Hart-wort. Fl. June, July. Cl. 1739. Pl. 1 to 1 ½ foot.

*Cult.* The seeds only require to be sown in the open border in spring. A light soil will suit the species best.

CXV. TORDYLOPSIS (from *Tordylium* and *opsi*, *opsis*, appearance; plant resembling *Tordylium*). D. C. prod. 4. p. 199.—Tordyloides, Wall. mss.

LIN. SYST. *Pentandria Digynia*. Margin of calyx 5-toothed: teeth acute: outer teeth the largest, dilated at the base, and cuspidate at the apex. Outer petals of umbels large and obcordately 2-lobed: the rest smaller, ovate, and cuspidate, entire, rarely a little 2-lobed. Stylodium conical; styles 2, erect, elongated. Fruit hairy when young. The rest unknown.—Herb a foot high, more or less hairy. Stem terete, striated, erect, nearly simple. Petioles sheathing at the base. Leaves with 1-2 pairs of ovate cut toothed leaflets, and an odd one. Umbels terminal, 6-8-rayed. Involute of 5-6 lanceolate linear acuminate leaves, which are almost longer than the rays. Umbelles crowded, 15-18-flowered. Leaves of involucrals conforming to the leaves of the involucra, exceeding the flowers.—Habit almost of *Heracleum*, but the involucra are of many leaves. It agrees also with *Tordylium* in the hairiness, and in the corol-las. The genus is very doubtful, the perfect fruit being unknown.
UMBELLIFERÆ. CXVI. Kruberæ. CXVII. Pachypleurum. CXVIII. Agasyllis. CXIX. Stenocelium, &c.

1 T. BRUSSONI (Wall. mes. ex D. C. prod. 4. p. 199.) 1. F. Native of Niapai, in Kamon, towards Emôdi.

BROWN’S Tordylophus. Pl. 1 foot.

Cult. This plant should be grown in a pot, so that it may be placed under shelter in winter.

Tribe IX.

SILERINEÆ (this section contains plants agreeing with Siler in important characters, or Orthospermeae multijugatae, Koch, umb. 84. D. C. prod. 4. p. 199. Fruit longitudinally compressed from the back. Mericarps with 5 primary ribs, having the lateral ones of these marginating; and 4 secondary less prominent ones, these last are rarely wanting; all filiform and wingless. Seed flatish in front.


Cult. See Tordylium above for culture and propagation.

CXVII. PACHYPLEURUM (from παχυς, pachys, thick, and πλεύρων, pleuron, a rib; the ribs of the fruit are thick and coryled). Led. fl. ross. alt. ill. and fl. alt. 1. p. 296.

LIN. SYST. Pentándria, Digynia. Margin of calyx 5-toothed. Petals obovate-orbicular, somewhat emarginate, with an inflexed point. Fruit compressed from the back. Mericarps with 5 elevated roundish thick equal ribs; the lateral ribs marginating. Vitellae one in each furrow, and 2 in the commissure. Seed flat in front. Involucra and involucres of many lanceolate-linear leaves, with membranous margins.—A perennial herb, having a fuscescent root, nearly a foot long. Stem solitary, 2-3 inches high, leafy at top; but with numerous auxiliary elongated branches, which are furnished with leaves beneath the middle. Petals dilated into sheaths. Leaves pinnate; leaflets pinnatifid. Cauline leaves tripinnate; leaflets oblong, acute, entire or bifid. Umbels of many rays. Umbellules when bearing the fruit nearly globose. Flowers white. The whole plant is pubescent, and powdery towards the apex. Stems, petioles, peduncles, and rays of umbels violaceous.


LIN. SYST. Pentándria, Digynia. Margin of calyx obsolete. Petals lanceolate, incurved. Fruit oval, compressed from the back; mericarps with 5 primary obtuse ribs: the 2 lateral ones of these more humble than the rest, and placed in front of the short accessory margin: the secondary ones sometimes absent. Seed a free nucleus, which is flat on one side, and rather convex on the other, covered with many vitæ, 8-10 on the back, and 5-6 in the commissure.—A perennial herb, with the habit of Cachrys. Stem succulent. Leaves pubescent, ternately decomposed; leaflets decurrent, lanceolate, serrated, a little lobed. Involucra wanting. Umbels of many rays. Leaves of involucres numerous, setaceous. Flowers white.


CXIX. STENOCELIUM (from στένος, stenos, narrow, and κοίλος, koilos, hollow; in reference to the narrow furrows of the fruit). Ledebr. fl. ross. alt. ill. t. 175. fl. alt. 1. p. 298.

LIN. SYST. Pentándria, Digynia. Margin of calyx 5-toothed. Petals obovate-orbicular, somewhat emarginate, with an inflexed point. Fruit compressed from the back. Mericarps with 5 elevated roundish thick equal ribs; the lateral ribs marginating. Vitellae one in each furrow, and 2 in the commissure. Seed flat in front. Involucra and involucres of many lanceolate-linear leaves, with membranous margins.—A perennial herb, having a fuscescent root, nearly a foot long. Stem solitary, 2-3 inches high, leafy at top; but with numerous auxiliary elongated branches, which are furnished with leaves beneath the middle. Petals dilated into sheaths. Leaves pinnate; leaflets pinnatifid. Cauline leaves tripinnate; leaflets oblong, acute, entire or bifid. Umbels of many rays. Umbellules when bearing the fruit nearly globose. Flowers white. The whole plant is pubescent, and powdery towards the apex. Stems, petioles, peduncles, and rays of umbels violaceous.

UMBELLIFERÆ. CXX. Siler. CXXXI. Galbanum. CXXII. Cuminum. CXXXIII. Trepocarpus.

lentically compressed from the back; mericarps with elevated obtuse filiform ribs, having 5 primary ones: the lateral ones of these margination; and 4 less prominent secondary ones. Vitae one in each furrow, under the secondary ribs. Seed flatish in front.—Perennial glabrous herbs. Leaves triternate; petals trifid, sheathing at the base; branches of petals bearing 3 roundish, coarsely and bluntly crenated, or bluntly 3-lobed leaflets. Umbels large, of many rays. Involuta wanting or of few leaves, caducous. Flowers white.


Cult. See Laserpitium, p. 351. for culture and propagation.

CXXI. GALBANUM (galb or galban, in Celtic, means fat, oily; in reference to the gum). D. Don, in Lin. trans. 16. p. 605.

Lin. syst. Pentantria, Digynia. Fruit compressed from the back, elliptic, ungulcular; raphe narrow, open, not closed. Mericarps with 5 elevated compressed bluntly keeled ribs, not winged: lateral ones distinct, marginal; furrows broadish, concave, without any vitae. Commisurine flat, dilated, furnished with 2 vitae; vitae broad, a little arched. The seeds from which the foregoing description has been drawn were picked from the gum. The rest of the plant remains unknown.

1 G. Officinale (Don, l. c.) 2 H. The plant, according to Dioscorides, is a native of Syria; but it must be in some remote inaccessible part of it, as it has not been observed by any of the numerous travellers who have visited that country. As the gum-galbanum is partly imported from Syria and partly from India, it is very probable that the plant is also a native of Persia. The Bûbon Galbanum of Linneus possesses neither the smell nor the taste of Galbanum, but in these particulars agrees best with Fennel, and the fruit has no resemblance whatever to that found in the gum. How a plant differing so essentially from Galbanum should yet have been retained so long in the Pharmacopoeia may well be subject of surprise, especially as the Bûbon Galbanum, being so frequent in gardens, afforded abundant opportunities of settling the question.

Galbanum agrees in virtue with gum-ammoniac, but is generally accounted less proper in asthma, and more so in hysterical complaints. It is exhibited in the form of pills or emulsions, to the extent of about a drachm. Applied externally, it is supposed to resolve and digest tumours, and to promote suppuration. The best sort of galbanum consists of pale coloured pieces, about the size of a hazel nut, which, on being broken, appear to be composed of clear white tears, of a bitterish acid taste, and a strong peculiar smell. But it most commonly occurs in agglutinated masses, composed of yellowish or reddish, and clear white tears, which may be easily torn asunder, of the consistence of firm wax, softening by heat, and becoming brittle by cold, mixed with seeds and leaves. Galbanum is generally obtained by cutting the plant across some inches above the root. The juice which flows from the wound soon hardens, and is the galbanum brought to us from Syria and the Levant.

Officinal Galbanum. Pl. 4 to 5 feet.

Cult. See Théopistes, p. 350. for culture and propagation.

Tribe X.

CUMINÆ (this tribe contains plants agreeing with Cuminum in important characters), or Orthosperme multijugateae contractae, Koch, umb. 81. D. C. prod. 4. p. 200. Fruit contracted from the sides. Mericarps with 5 primary filiform ribs: the lateral ones of these margination, and 4 secondary more prominent ones. Seed straight, flatish in front.


Lin. syst. Pentantria, Digynia. Teeth of calyx 5, lanceolate, setaceous, unequal, permanent. Petals oblong, emarginate, with an inflexed point, erectly spreading. Fruit contracted from the sides. Mericarps with 5 wingless ribs; the 5 primary ones filiform, and minutely muricate, the lateral ones of these margination: the 4 secondary ones more prominent and prickly. Vitae one in each furrow, under the secondary ribs. Carpophore biform. Seed rather concave in front and convex on the back.—Herbs, with multifid leaves; linear setaceous leaflets. Involuta of 2-4 simple or divided leaves; involucres dimidiate, of 2-4 leaves, which are at length reflexed. Flowers white or reddish.

1 C. HISPA'NICUM (Merat, herb. D. C. prod. 4. p. 201.) segments of leaves linear-setaeose, acute; umbels bifid; umbels bearing 3-4 fruit; involucres about equal in length to the fruit, which are bearded by bristles. 2 H. Native of Spain, in corn-fields in Valia de la Manca. Habit of C. Cuminum, but differs in the fruit not being glabrous or puberulous, but bearded by long stiff spreading pili. Flowers reddish.

Spanish Cumin. Pl. 1 foot.

2 C. MIN'ICUM (D'Urville. enum. 39. t. 279.) segments of leaves linear, obtuse; involucres about equal in length to the fruit, which is glabrous. 3 H. Native of the island of Cos, in shady places frequent. Stem slender, branched, hardly 2-3 inches high. Every part of the plant is smaller than in the other species. In the specimens received from D'Urville, the segments of the leaves are acute, and the involucres are rather shorter than the fruit.

Minute Cumin. Pl. 2 to 3 inches.

3 C. CYM'IUM (Lin. spec. p. 365.) segments of leaves linear-setaceous, acute; umbels 3-5-cleft; involucres exceeding the fruit, which is pubescent. 4 H. Native of Upper Egypt, and Ethiopia. Cuminum, Riv. pent. t. 40. Cam. eppt. 518. Schkuhr, handb. no. 714. t. 80. Woodv. med. bot. t. 190. Nees. off. pln. 13. t. 7. Hayn. arz. gew. t. 11. Planch. icon. 192. Cav. icon. 4. t. 360.—Mor. hist. p. 271. sect. 9. t. 2. There are varieties of Cuminum with white, red, or purple flowers. Coat of fruit aromatic; albumen insipid. The plant is cultivated in the south of Europe and all Lesser Asia. In the islands of Malta and Sicily, where it is much cultivated for sale, it is called Cuminum aegro or hot cumin, to distinguish it from Cuminum dolcic, sweet cumin. Cumin seeds have a bitterish warm taste, accompanied with an aromatic flavour, not of the most agreeable kind, residing in a volatile oil.

Var. a, secardium (D. C. prod. 4. p. 201.) fruit clothed with short down; but roughish on the ribs. 5 H. C. Egyptian, Cimum, Merat, in herb. This is the wild plant.

Var. β, glabratum (D. C. l. c.) fruit glabrous. 6 H. C. Cuminum, Merat, in herb. This is the cultivated plant.


Cult. The seed should be sown in spring in a warm sheltered situation, where the plants will flower in summer, and produce seed in autumn.

CXXIII. TREP'OCARPUS (from τρέοντα, trepo, to turn, and

Lin. syst. Pentändria, Dígyínia. Calyx 5-toothed; teeth subulate, falling off but slowly after flowering. Petals obcordate, inflexedly emarginate. Fruit pyramidal or nearly terete, contracted from the sides. Mericarps convex on the back, with 5 primary, filiform, hardly prominent ribs, margined each by a brown vittaeform line on both sides; and 4 secondary elevated ribs, bearing one vittae at the lower part of each. Commissure thick, furrowed in the middle, and furnished with vittae inside. Seed somewhat compressed on the back, straight.

- Glabrous branched herbs, with the habit of *Ethisia*. Leaves multifid, with linear segments. Umbels opposite the leaves, of 5 rays. Involucra linear, of 1-3 leaves. Umbellules 5-8-flowered; involucres linear, unequal, 4-5-leaved, dimidiate. Flowers white. This genus is nearly all allied to *Cuminum* instead of *Ethisia*; it differs from the first in the commissure being spongy, and in the mericarps having accessory margins.

1 T. *Ethisia* (Nutt. l.c. ex D. C. l.c.) umbels of 5 rays; fruit 5 times longer than its breadth. @ H. Native of North America, in the Arkansa territory, ex Nutt. The primordial leaves are nearly as in *Cynapium*, with short acutish lobes; cauline leaves with long linear acute lobes. Involucra of 2-3 leaves; involucres of 4-5 leaves.

*Ethisia*-like *Trepocarpus*. Pl. 1 foot.

2 T. *Brachycahres* (D. C. prod. 4. p. 202.) umbelles of 2-3 rays; fruit 3 times longer than its breadth. @ H. Native of Louisiana. Perhaps only a variety of the first. It differs from it in the involucra and involucres being of fewer leaves; in the lower umbels being on shorter peduncles; and in the fruit being thicker, and less angular.

Short-fruited *Trepocarpus*. Pl. 1 foot.

Cult. See *Cuminum* above for culture and propagation.

**Tribe XI.**

**THAPSIEÆ** (this section contains plants agreeing with *Thapsia* in important characters), or Orthosperme multijugata alata, Koch, umb. p. 75. D. C. prod. 4. p. 202. Fruit compressed from the back, or the transverse section is nearly terete. Mericarps with 5 filiform bristly primary ribs: the lateral ones of these placed in the commissure, which is flat; and 4 secondary ones: interior ones of these filiform, and the exterior ones or all are winged; wings undivided; hence the fruit has 8 wings, or only 2 wings on each side. Seed somewhat complanate or teretely convex, but flat in front.


Lin. syst. Pentándria, Dígyínia. Margin of calyx 5-toothed. Petals elliptic, entire, with an inflexed or involute point. Fruit compressed from the back. Mericarps with 5 primary filiform ribs, 3 of which are dorsal, and the 2 lateral ones are placed in the commissure, which is flat and 4 secondary ones, the 2 dorsal ones are filiform, and the 2 lateral ones are membranous and winged; wings entire. Vittae one in each furrow, under the secondary ribs. Carpophore bipartite. Seed complanate.- Perennial herbs. Leaves pinnate, bipinnate, or tritipinate, or decumbent; petioles sheathing; the upper leaves usually reduced to the petioles. Umbels large, compound, of many rays. Involucra and involucres wanting, or of a few deciduous leaves. Flowers yellow. This genus differs from *Laserripitum*, in the wings of the mericarps being only 2, not 4; and from *Melanoselium* and *Artédia*, in the wings being entire; and from *Lepiodocidium*, in the backs of the mericarps not being scaly.

*Involucra wanting or of 1-2 leaves.*

1 T. *Garga'rnica* (Lin. mant. 57.) stem terete, glabrous; leaves bi-tripinnate, shining; segments linear, acute, elongated, quite entire along the margins, decurrent or confluent; involucra of few leaves; fruit cordate at the base, with a very open recess. @ H. Native of Calabria, Mauritania, Greece, Sicily, Sardinia, Spain, &c. in open places and on hills. Magn. bot. monsp. p. 286. with a bad figure.—Goun. obs. p. 18. t. 10. Desf. alt. p. 262. Sibth. et Smith, fl. græc. t. 387. There are varieties of this with glabrous or hairy petioles. To this the Férula Neapolitana, Ten. med. fl. p. 316. append. 4th. p. 12. is referred by Sprengel, which is said by the author to be nearly allied to *F. glauca*. The bruised root is said to be good for resolving tumours.


2 T. *Silphium* (Viv. fl. lyb. p. 17.) stem terete, furrowed, glabrous; leaves pinnate; leaflets many-parten; segments simple or trifid, all linear, elongated, hairy on both surfaces, with revolute margins; fruit cordate at the base, having the recess constructed. @ H. Native of the north of Africa, on the mountains of Cyrenaica. This is supposed to be the plant which yielded the juice called *silphium*, a medicine held in such high estimation among the ancients, as to have imparted to it the name which it gave (the vicinity of Cyrene, now included in the pashallic of Tripoli), the appellation of "Silphífera!"


3 T. *Villidès* (Lin. spec. p. 375.) stem terete, glabrous; leaves tripinnate, and are, as well as the petioles, villous: leaflets oblong, sinuately pinnatifid: lower ones deflexed; involucra and involucres almost wanting. @ H. Native of Portugal, Spain, south of France, and Mauritania, on hills and in bushy places. Lam. ill. t. 206. D. C. fl. fr. 4. p. 342.—Moris. ox. sect. 9. t. 18. f. 3. Plench. icon. 219. Parkins. 878. t. 877. f. 2. Ger. emac. 1030. Flowers yellow, as in the rest of the species. Aspect of plant hoary. Root carrot-shaped, black on the outside.


4 T. *Asclepiéum* (Lin. spec. p. 375.) stem terete, glabrous; leaves tripinnate; leaflets digitately multifid, capillary, short; petioles glabrous; involucra and involucres wanting. @ H. Native of Apulia, Sicily, Rhodes, and about Constantinople. Sibth. fl. græc. t. 286. ex Smith, prod. 1. p. 201. Guss. prod. fl. sic. 1. p. 370. T. Apulia, Mill. dict. no. 4.—Col. exsp. 1. t. 86. Mor. hist. 3. p. 319. sect. 9. t. 18. f. 9. Fruit one-half smaller than those of *T. Gargaríum*, having the wings rather truncate at both ends. Habit of *Eleconesetum mendiesii*. The root is about the thickness of a man's thumb; the bark is yellow and wrinkled; the inside white, abounding in a bitter milky juice.


5 T. *ex-tída* (Lin. spec. p. 375.) stem and petioles villous; leaves tripinnate; leaflets much spreading, pinnatifid, attenuated at the base: segments short, lanceolate, toothed; involucra wanting. @ H. Native of Spain, Zante, Cyprus, &c. Blackw. t. 459. Lob. icon. t. 780. ex Smith. Moris. hist. sect. 9. t. 18. f. 7. ex Lin. Lobel's figure is more probably referrible to *Laserripitum gemmiferum*. T. tenifolia, Lag. gen. et spec. 12. is referrible to the figure of Morison, but differs in the stem being glabrous. It is probably only a variety of this species. The leaves are rough and hairy.

UMBELLIFERÆ. CXXIV. Thapsia. CXXV. Cymopterus. CXXVI. Laserpitium.

**Involuca of 5-7 leaves.**

6 T. polygama (Desf, fl. Atl. 1. p. 261. t. 75.) stem terete, glabrous, sparingly branched; leaves glabrous, bipinnate; leaflets multifid; lobes linear, acute, divaricately trilobed; involuca of 5-7 leaves; central flowers male. 2. H. Native of Mauritania, about Bone, Lacalle, and Tangiers. Spreng. in Schultes, syst. 6. p. 614. exclusive of the synonym of Lam. and therefore the description. Flowers pale yellow. Stylodium thick. Styles diverging, at length reflexed.—Barrel. icon. 356. appears to be intended for this plant, but the flowers are said to be white.

*Polygamous Deadly-carrot.* Pl. 1 to 2 feet.

† *Species not sufficiently known.*

7 T. praëlata (D'Urv. enum. p. 32.) stem branched above; radical leaves quadrifidly decomposed, shining; leaflets oblong, cut, almost pinnatifid; umbels numerous; central one much the shortest; lateral ones on peduncles, which are terminated each with a lanceolate twin bracteate at the base. 2. H. Native of the island of Cos, among broken rocks at the height of 900 feet. Stem 6-8 feet high. Fruit unknown.

*Tart Deadly-carrot.* Pl. 6 to 8 feet.

8 T. Transagana (Broth. fl. Lus. 1. p. 468.) leaves bipinnate; leaflets pinnatifid; segments linear-lanceolate, hairy. 2. H. Native of Portugal, near Montemor and Serpa. Habit of T. Gargarica, but more hairy.

*Transagana Deadly-carrot.* Pl. 2 to 4 feet.

9 T. maxima (Mill. dict. no. 2.) leaves pinnate; leaflets very broad, pinnatifid, villous beneath; petioles decurrent. 2. H. Native of Spain, all over Old Castile quite to the Pyrenees. Perhaps not different from T. villosa. Root said to be of a dark colour on the outside, and the leaves very thick.

*Largest Deadly-carrot.* Fl. June, July. Cit. ? Pl. 4 to 5 ft. 10 T. altissima (Mill. dict. no. 6.) leaves decomposed; leaflets large, shining; umbels large. 2. H. Native of Apulia. Perhaps the same as T. praëlata.

*Tulles Deadly-carrot.* Pl. 8 feet.

*Cult.* The species of Thapsia will grow in any common garden soil. They are only to be increased by seeds, which should be sown in autumn as soon as ripe.

CXXV. CYMOPTERUS (from κυμα, κυμα, a wave, and πτερόν, pteron, a wing; in allusion to the undulated wings of the mericarps). Rafin. journ. phys. 1819. aug. p. 100. but not of Schultes, syst. 6. p. 34.—Thapsia, Nutt. gen. amer. 1. p. 184.

Lin. syst. Pentandria, Digynia. Cymax minutely 5-toothed. Petals roundish-oval, with an inflexed point. Fruit nearly elliptic, compressed, 7-8-winged: the perfect mericarps are therefore 4-winged, and the imperfect ones 5-winged; wings undulate; furrows of fruit flat, 1-nerved; cinnamomeous naked, but with 3 stripes. Carpophore not separable from the mericarps.—A smooth humble herb, with tuberous roots, rather decumbent, nearly naked stems; binate leaves: with short obtuse decussate lobes, and long petioles. Umbels 4-6-rayed; involucra wanting; involucels 5-7-parted, disseminated. Flowers polygnamous: female ones nearly sessile and white; central ones male, pedicellate.—This genus is truly distinct from Thapsia, but perhaps may be joined with Laserpitium.


Glomerate-flowered Cymopterus. Pl. decumbent.

*Cult.* See Thapsia above for culture and propagation.


Lin. syst. Pentandria, Digynia. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inlaxed point. Fruit compressed from the back, or nearly terete, 8-winged: the 5 primary nerves of the mericarps being filiform: and the 4 secondary ones being winged. Vittae 1 in each furrow, under the secondary ribs. Carpophore free, bipartite. —Herbs with bipinnate or tripinnate leaves; leaflets entire, toothed or cut. Umbels showy, of many rays. Involua and involucels of many leaves. Flowers white, rarely yellow. This genus is easily distinguished from the others by the 8 wings to the fruit.

*Fruit glabrous, or the primary ribs are clothed with adpressed, very short down.*


*Rough Laserwort.* Pl. 1 to 2 feet.

2 L. alabrum (Cranz, austr. 3. p. 54.) leaves bipinnate, quite glabrous in every part, and shining; leaflets obliquely cordate, mucronately toothed: but those of the superior leaves are quite entire; leaves of involuca setaceous; wings of fruit equal, rather curved. 2. H. Native of Europe, on the mountains, in dry and stony places. D. C. fl. fr. suppl. p. 509. L. latifolium, Lin. spec. 156. Jacq. fl. aust. t. 146. Schkuhr, handb. t. 10. Fl. dan. t. 1513. L. Libánótis, Lam. dict. 3. p. 423.—Dod. pempt. 312. f. 2. Chus. hist. 2. p. 194. f. 2.—Riv. pent. t. 21.—Planch. icon. 179.—Mor. hist. sect. 9. t. 17.—Mor. hist. 3. p. 202. t. 19. f. 1-6. Stem and under side of leaves rather glaucous. Flowers white. In the Alps this plant is only a foot or 2 feet in height, while in cultivation it grows much larger. The plant is acid and aromatic, with something of bitterness, and seems to merit a place amongst the aromatic stimulants, emmenagogues, and aperient sudorifics. It is used by the peasants for themselves, and by forgers for horses, in some countries. The root is the hottest part of the plant.

Var. B. crispus (Turra, fl. Ital. prod. p. 65. no. 14.) wings of fruit very much curved. 2. H. Native of Mount Baldo.

*Glabrous Laserwort.* Fl. June, July. Cit. 1640. Pl. 2 to 4 ft.

3 L. aquilegifo'lium (Murr. syst. p. 228.) leaves bipinnate or trinervate; leaflets ovate, rather cordate at the base, slightly lobed, glabrous, but puberulous on the nerves beneath; involucra and involucels deciduous, of few leaves; wings of fruit equal, flat. 2. H. Native of France, Austria, Hungary, &c. on the mountains. D. C. fl. fr. 5. p. 510. Jacq. aust. 22. t. 147. L. trifolium, Jacq. vind. 48. Cranz, austr. 187. but not of Lin. L. alpinum, Waldst. et Kt. pl. hung. t. 253. Bess. prim. 2. p. 393. Stem glabrous, glaucous, green. This plant is usually confused with Siler trifolium, from the shape of the leaves; but it is easily distinguished from that plant in the 8-winged fruit.

*Columbine-leaved Laserwort.* Fl. May, July. Cit. 1640. Pl. 4 to 6 feet.

4 L. garganii (Moretti, in Com. 1824.) fl. com. no. 344. and in bot. Ital. 1825. no. 3. p. 33. leaves somewhat tripinnate: leaflets roundly 2-3-lobed, acutely and deeply serrated: 1
upper cauleine ones tripartite; lobes linear-lanceolate; involucra and involucroles of few leaves: wings of fruit flat, unequal: the dorsal ones a little smaller than the lateral ones. 2. H. Native of Switzerland and Italy, in subalpine places. L. lutelöüm, Gaudin, fl. helv. 2. (1828.) p. 348. L. trilobum, Sut. fl. helv. but not of Lin.—Hall. hist. no. 352. exclusive of the synonym. Allied to L. aquilegiföllum and L. glabrum, but differs from them in the flowers being yellow.

Gaudin's Laserwort. Pl. 3 to 4 feet. 5 L. margina tum (Waldst. et Kît. pl. rar. hang. 2. p. 210. t. 192.) leaves bierrate, shining, and are as well as the stems glabrous; petioles and nerves of leaves rather pilose beneath; leaflets ovate, sessile, somewhat 3-lobed, serrated; upper stem leaves reduced to the petioles; involucra and involucroles of 2-5 linear-lanceolate leaves; wings of fruit unequal: the 2 lateral ones the broadest. 2. H. Native of Carniola, in woods. Petals incurvly obcordate at the apex, greenish yellow, margined with purple.


Sicilian Laserwort. Pl. 3 to 4 feet. 7 L. Siler (Linc. spec. 357.) leaves bipinnate, quite glabrous; leaflets lanceolate or oval, quite entire, mucronate, sometimes confluent and 3-lobed; leaves of involucra and involucroles linear-lanceolate, awnily acuminate; wings of fruit narrow. 2. H. Native of middle and south Europe, on the mountains. Jaq. fl. aust. 2. t. 145. D. C. fl. fr. 4. p. 315. Hayne, arz. gew. 7. t. 7. Plench. icon. 178. Blackw. 426. Ligusticum Gargânicum, Till. pisi. t. 30. Ten. in herb. Balb. and Mor. Siler lanciföllum, Moench. L. montanum, Lam. fl. fr. L. trifoliatum, Sieb. and Schlus. syst. 6. p. 619. Siler montanum, Mor. oxi. sect. 9. t. 3. f. 1. Plant quite glabrous, growing from 1-2 feet high in subalpine places. Stem green or pinnatifid. Flowers white. The root is extremely bitter, and might be useful in fevers, loss of appetite, &c. An infusion of it in wine has been given with success in disorders of the breast. It yields an aromatic resinous oil on being wounded, and being made into a syrup, is recommended in disorders of the breast. Vill. dauph. 2. p. 637. Allon. pedem. no. 1316.

Wild or Mountain Laserwort. Fl. May. July. Clt. 1640. Pl. 1 to 6 feet. 8 L. Galliicum (C. Bahn. pin. p. 156. Linc. spec. p. 357.) leaves supra-decompound, glabrous, shining; leaflets cuneate, 5-3-cleft, mucronate; leaves of involucra linear-lanceolate, acuminate; wings of fruit equal, flat. 2. H. Native of the south of France; and of Upper Italy. D. C. fl. fr. 4. p. 312. Spreng. in Schultes, syst. 6. p. 624. Gaud. aix. t. 58. Paris. theat. 938. f. 1. L. trifurcatum, Lam. fl. fr. 3. p. 415. L. cuneatum, Moench. meth. 79. There is a variety with broader segments (in Mor. hist. sect. 9. t. 19. f. 8.) and with the lobes very much disdegree and short (Pluk. alm. t. 199. f. 1. L. fumosum, Wildl. spec. 1. p. 1518.) segments of leaves oblong-linear (Mor. hist. sect. 9. t. 19. f. 9. and therefore L. angustiföllum, Linc. spec. p. 357.) segments of leaves very narrow (J. Bahn. hist. 3. p. 137. and therefore L. angustiföllum, Wildl. l. c.) segments of leaves cut into many lobes (L. Galliicum laciniatum, Hortul., &c.). The most of the varieties have glabrous stems; very few have them hispid from scattered bristles. L. tenuiföllum, Riv. pent. irr. 22. is also a variety of this species. Flowers white.

French Laserwort. Fl. Ju. Jul. Clt. 1686. Pl. 1 to 2 ft. 9 L. Peucédanodis (Linc. spec. p. 358.) leaves trinerved, quite glabrous; leaflets quite entire, oblong, mucronate; leaves of involucra, and involucroles setaceous; pistils elongated; wings of fruit unequal, flatish. 2. H. Native of Carniola, Croatia, and Upper Italy, in mountain woods. There are varieties of this with oval-oblong leaflets (Hoppe, pl. exsic.). oblong leaves (Jacq. icon. rar. 2. t. 250.) oblong-linear leaflets (Seg. ver. 3. p. 227. t. 7.) and linear leaflets (Pluk. alm. t. 198. f. 4.) but all these varieties differ from any of those of L. Galliicum in the segments of the leaves not being cuneate nor lobed. Flowers white.

Sulphur-wort-like Laserwort. Fl. June. Clt. 1816. Pl. 1 to 3 feet. 10 L. Gummi'ferum (Desf. fl. atl. 1. p. 254. t. 72.) leaves ternately decomposed, glabrous; leaflets pinnatifid; lobes lanceolate, short, acute, stiffish; involucra and involucroles of few leaves. 2. H. Native of Portugal, Spain, and Mauritania, in sandy and barren fields. L. thapsiaförmis, Brot. phly. lus. p. 77. t. 35. L. polygamum, Lam. dict. 3. p. 425. Thapsia gummifera, Spreng. umb. spec. p. 31. Flowers white. Petals indentedly margined. Fruit 8-winged (ex Brot.); and therefore this plant if irreferrable to Laserpitium and not to Thapsia. Lobes of leaves, when dry, usually channelled. Petioles sometimes pilose, usually glabrous as well as the lobes.

Gum-bearing Laserwort. Pl. 2 to 3 feet. 11 L. Hieris'tum (Lam. fl. fr. 3. p. 648.) leaves supra-decompound, hairy; leaflets narrow, pinnatifid; lobes short, linear, cuspidate; leaves of involucra and involucroles membranous, rather trifid at the apex, ciliate; wings of fruit thin, flat. 2. H. Native of France, Switzerland, Piedmont, on the Alps, in meadows; and of Kotzebue's Sound. D. C. fl. fr. 4. p. 313. L. Pânex, Gouan. ill. 13. L. Halléris, All. pedem. no. 1315. —Hull. helv. no. 795. t. 19. exclusive of the synonym of Gmel. and Seg.—Mor. hist. sect. 9. t. 15. f. 16. Flowers white.

Hairy Laserwort. Fl. June. Clt. 1759. Pl. 1 to 2 feet. 12 L. Scab'rum (Cav. icon. 2. p. 72. t. 190.) leaves bipinnate, scabrous; leaflets oblong, cut, acute, and are as well as the stems glaucous; leaves of involucra and involucroles lanceolate, tapering into a bristle; fruit tomentose while young: adult ones 8-winged. 2. H. Native of Spain, near Catì and Valfleams, on dry exposed hills. Referrible to L. hirsutum, but truly distinct. Petals white, with a violaceous border, villous beneath. Stem scabrous.


Nitid-leaved Laserwort. Pl. 2 to 3 feet?

14 L. Arcangelica (Jacq. icon. rar. 1. t. 58. Wulf. in Jacq. coll. 1. p. 214.) leaves ternately divided; stem and petioles hispid; leaflets ovate, cuneate at the base, serrated, extreme one 3-lobed; and the lateral ones 2-lobed; leaves of involucra and involucroles linear-lanceolate, hairy, 2-3-cleft at the apex; wings of fruit flat, broader than the mericarps. 2. H. Native of Carniola, Croatia, Silesia, Carpathian mountains, among rocks. L. Chironium, Scop. carn. no. 324. Archangelica,
Clus. hist. 2. p. 195. Lob. icon. 701. Petioles large, saccate, very villous. Stem 5 feet high, furrowed. Flowers white, pubescent when young. Fruit glabrous, or clothed with adpressed pubescence according to Koch.


* Primary ribs of fruit hispid from spreading bristles.


Far. fl. glabratum (D. C. prod. p. 206.) leaves and stems glabrous. 3. H. Native of Piedmont, Pyrenees, &c. L. daucoides, Dufour, in litt. L. Pruteicium, Lapeyr. suppl. p. 48. Balb. fl. taur. 49. Fruit pilose on the primary ribs, as in var. a. The wings of the fruit are very unequal: the 2 lateral ones are large: and the 2 dorsal ones very small, or nearly wanting, hence this species falls in almost to Thapsia, but differs in the petals being emarginate.


17 L. Athamanxete (Spreng. in Schultes. syst. 6. p. 624.) plant hispid; stem furrowed, much branched; leaves ternately decompound, rough on both surfaces, stiffish; leaflets oblong, pinnatifid; segments broadly lanceolate, mucronate; leaves of involucra and involucres oblong, reflexed. 3. H. Native of Siberia. Perhaps the same as L. hispidum or a variety of L. Pruteicium.


† Species not sufficiently known.

18 L. Capeense (Thum. prod. p. 50. fl. cap. 2. p. 201.) stem terete, glabrous; leaves bipinnate; leaflets oval, mucronate, margined, quite entire; sheaths large, petiolar.—Native of the Cape of Good Hope. Fruit ovate, striated, and therefore the genus is doubtful.

Cape Laserwort. Pl. 1 to 1 1/2 foot.

19 L. Aureum (Willd. spec. 1416.) stem terete, nearly simple; leaves ternately decompound; leaflets ovate-lanceolate, pinnatifid: segments lanceolate, bluntish, mucronate; leaves of involucra and involucres filiform. 2. H. Native of the Levant. Spreng. in Schultes. syst. 6. p. 626.—Buxb. cent. 1. t. 43. ex Spreng. but the description hardly agrees with it. L. élegans, Clark, in Spreng. neu. entd. 3. p. 160. is related to it according to Spreng. syst. 1. p. 918. Flowers golden yellow. Fruit unknown. Perhaps a species of Thapsia.


20 L. Peruclaceum (Lapeyr. abr. pyr. p. 152. but not of Lin.) stem naked, simple, furrowed; leaves decompound: leaflets capillary, simple in the lower part, and more decompound at the apex; mericarps of fruit 4-winged. 2. H. Native of the Pyrenees, in a place called Pic du Gard. This is a very obscure species.

Fennel-like Laserwort. Pl. 2 to 3 feet.

Cult. All the species grow well in common soil, but it must be rather dry. They are only to be increased by seed, which should be sown in the autumn or spring.

CXXVII. LOPHOSCIADUM (άλοθρος, lophos, a crest; and σκίδαω, skidion, an umbel; in reference to the crested wings of the mericarps). D. C. coll. mem. 5. p. 57. t. 3. f. 6. prod. 4. p. 207.

Lin. syst. Penétanodia, Digynia. Margin of calyx 5-toothed. Petals elliptic, entire, acuminate, somewhat involute at the apex. Fruit compressed from the back. The primary ribs of the mericarps are unknown: but the 4 secondary ones are winged: the 2 lateral of which are expanded into a somewhat serrated wing each: and the 2 dorsal ones are expanded into interrupted wings, which at first sight appear like retrograde scales. Seed unknown.—Herb glabrous. Stem terete, erect. Lower leaves like those of Achillea millefolium, pinnate; leaflets short, innumerable, divided into linear-subulate lobes; upper leaves sessile, pinnate from the base, usually rising from the axes of the sheaths. Umbels compound, sometimes proliferous. Leaves of involucra 5-7, ovate-lanceolate, cuspidate; of the involucres 5-7, but narrower, and about equal in length to the umbellules. Flowers yellow. Allied to Thapsia, but differs in the ribs of the fruit being scaly; but the fruit examined being immature and incomplete, it is therefore doubtful in what part of the order the genus should be placed. Perhaps it should have been placed near Cachrys.


Cult. See Laserpitium above for culture and propagation.


Lin. syst. Penétanodia, Digynia. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point. Fruit flatly compressed from the back. Mericarps with 5 filiform, primary ribs: the 3 intermediate ones on the back: and the 2 lateral ones placed in the commissure, which is flat: and 4 secondary ones: the inner ones of these filiform and very slender, but the outer 2 are expanded into membranous serrated wings; under all the ribs there are oleiferous canals. Carphophore bipartite. Seed flat.—A shrub with a terete simple stem, which is naked below. Leaves tripinnate; leaflets ovate, acuminate, serrated: ultimate ones usually confluent; petioles sheathing. Umbels composed of many rays. Involucra of many cut leaves; and the involucres of many entire leaves. Flowers white.

plant is called by gardeners Bûbôn Gâlânâmum, to which it is very similar in habit, hence it has the name of decipens.

*Deceiving* Black-parsley. Fl. Ju. Jul. Clt. 1785. Shrub. *Cult.* Any light soil will suit this plant; and it is only to be increased by seed.

**Tribe XII.**

**DAUCI'NEÆ** (this section contains plants agreeing with *Daucus* in important characters) or ORTHOSPOR'ÆME MULTIO-CÂTE ARMAÎTE. Koch, umb. p. 76. D. C. prod. 4. p. 208. Fruit lentically compressed from the back, or the transverse section is nearly terete. Mericarps with 5 primary, filiform, bristly ribs: the lateral ones placed in the commissure, which is flat, as in *Thapsiça*; and with 4 secondary ones, which are more prominent and prickly than the primary ones: the prickles free, or joined into a wing. Seed complanate or somewhat semi-teretely convex, flattish in front.


**LIN. SYST.** *Pentândria, Digînia.* Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point; those in the outer ray of the umbels with unequal lobes: the outer lobe very large. Fruit compressed from the back. Mericarps with 5 primary, filiform ribs: the 3 intermediate dorsal, and the 2 lateral ones placed in the commissure; and 4 secondary ribs: the 2 inner ones of these filiform: and the 2 outer ones winged: the wings deeply and sinuately lobed. Carpophore bipartite. Vittea none. Seed flat.—An annual, glabrous herb. Leaves, as well as those of the involucre and involucels divided into linear lobes. Umbels compound. Flowers white. Herb with the habit of *Nigella Domasiçìna*; and the florescence like that of *Orlaza grandiflora*.

1 A *SQUAMMA* (Lin. spec. p. 347). **O. H.** Native of the Levant, on Mount Lebanon (Lin.): between Bagdad and Kermanshah (Olivier), on the banks of the Euphrates (C. Ros- tan); in Syria and Asia Minor (Schr.); in the Morea, and Lycia (Smith); Cyprus (Sibth.). Gingidium Rauwofíia, Cam. hort. 16, but not of Dioscorides, ex Sibth. and Smith, fl. gréc. 208. Thápsia orientális, Tourn. cor. 22. 1. Mor. ox. sect. 9. t. 18. f. 11. Flowers white. There is a pencil-like brown brush in the centre of the umbels. Cotyledons long, linear. Compare D. C. mem. umb. t. 19. t. 7.


**Cult.** The seeds should be sown as soon as they are ripe, in warm border, as if sown in spring, the plant rarely produces seed.


**LIN. SYST.** *Pentândria, Digînia.* Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point: those in the outer rays of the umbel radiant and profoundly bifid. Fruit lenticularly compressed from the back. Mericarps with 5, filiform, primary, setiferous ribs: the 3 intermediate ones dorsal: and the 2 lateral ones placed in the commissure, which is flat: and with 4 secondary ones, bearing 2-3 series of prickles each: the outer ones more prominent, or a little winged; prickles hooked, or rayed at the apex. Vittea 1 in each furrow, under the secondary ribs. Carpophore bifid or undivided. Seed flat, convex behind.—Annual herbs. Leaves multifid; lobes linear. Involuta variable; involucels of many leaves. Flowers white; those in the rays of the umbels hermaphroditic, with short styles: those in the disk male: the rest female, and fertile, with long styles.

1 O. GRANDI'PÔRA (Hoffin. umb. 1. p. 58.) plant erect, dichotomous, glabrous; leaves bipinnate; leaflets pinnatifid; segments linear, short; leaves of involucra 5, with scarious margins; prickles of fruit hooked at the apex. **O. H.** Native of south and middle Europe, and of Tauria, in fields. Echinóphora, Col. echp. 1. 91. t. 94. f. 1. Rivin. pent. t. 25. Caécalis grandiflóra, Lin. spec. p. 346. Lam. ill. t. 192. f. 1. Jacq. aust. 1. t. 54. Daucus grandiflóris, Scop. carn. 1. p. 189.—Lob. icon. 728. f. 1.—Mor. hist. sect. 9. t. 14. f. 3. There is a variety of this with smaller flowers, a native of the south of France.


**LIN. SYST.** *Pentândria, Digînia.* Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point: outer ones usually radiating, and profusely bifid. Fruit somewhat compressed from the back, ovate or oblong. Mericarps with 5 primary, filiform, bristly ribs: the 3 intermediate ones dorsal: and the 2 lateral ones placed in the commissure, which is flat: and with 4 more secondary, prominent, equal, winged ribs, which are divided into a simple series of prickles. Vittea 1 in each furrow, under the secondary ribs. Seed flatish in front.—Herbs, usually biennial. Leaves bipinnate. Leaves of involucra many, trifid, or pinnatifid; involucelles of many entire or trifid leaves. Flowers white or yellow; the central ones usually fleshy, dark purple, and sterile. The species of this genus are badly known, and are extremely difficult to extricate from confusion.

**Sect. 1. PLATYP'ERÖUM** (from πλατύς, platys, broad, and σφυρί, sperma, a seed; seeds broad). Hoffin. umb. 1. p. 64.

1 D. MURICATUS (Lin. mant. p. 392.) plant hispid; leaves tripartite; leaflets multifidly cut; leaves of involucrum 3-5, many of which, or all, are trifid or pinnatifid; prickles of fruit longer than the breadth of the seed, peltately glochidiate at the apex. $\odot$. H. Native of Maurtania, Numidia, Cambod, and China, in fields.—Mor. hist. sect. 9. t. 14. f. 4. Herm. par. 111. Artédia muriçata, Lin. spec. ed. 1. p. 242. D. mucrìcatus, Desf. atl. 1. p. 243. Spreng. in Schultes, syst. 6. p. 477. exclusive of the synonymy of Poir. Platyürspernum mucrìcátum, Hoffm. and Koch, l. c. and perhaps Caücalis Maurtánica is referrible to this. The hairs on the lower part of the stem are bent back.—Col. ceplhr. 1. p. 95 t. 94. Flowers pink.

Muricuted-fruited Carrot. Fl. Ju. Jul. Clt. 1683. Pl. 1 fl. 2 D. LITTORALIS (Sibth. and Smith, fl. grece. t. 272. prod. 1. p. 185.) stem decumbent, hispid from deflexed hairs; leaves bipinnate, hispid; leaflets short, multifid, cuneiform; leaves of involucrum 3-cleft, shorter than the umbel; fruit ovate, obeset with glochidiate prickles. $\odot$. H. Native of the island of Cyprus, by the sea-side; and of Spain. Leaves of the involucrum usually 5; of the involucels membranous. Flowers white. Fruit angular, beset with strong prickles.


Most-beautiful Carrot. Fl. Ju. Jul. Clt. 1816. Pl. 2 to 4 fl. 4 D. BESARRABECUS (D. C. prod. 4. p. 210.) glabrous; leaves ternately supra-decomposer; segments linear-setaceous; umbels of many rays; involucrum wanting; prickles of fruit length of seeds, when young scabrous. $\odot$. H. Native on the shores of the Black Sea, about Odessa; and of the south of Bessarabia. Caücalis littorális, Biebr. fl. taur. 1. p. 208. Caücalis littorális, Biebr. umb. prod. 20. no. 5. Platyürspernum littorális, Koch, l. c. This is very different from Daüucus littorális of Sibth., but it nearly agrees with D. pulcherrimus, especially in the leaves of the involucels being ciliate, but differs from it in the segments of the leaves being fewer and longer; in the rays of the umbels and umbellages being fewer; and in the prickles of the fruit being shorter. Flowers white.


Laserwort-like Carrot. Pl. 2 to 3 fl. 6 D. EUNIFILES (Koch, umb. p. 77.) stem rough, branched; leaves pinnate, rather hispid; leaflets pinnatifid, with linear or trifid segments; leaves of involucrum usually trifid or undivided; prickles glochidiate at the apex, longer than the breadth of the fruit, which is oblong. $\odot$. H. Native of Egypt, at Alexandria. Caücalis glâbra, Forsk. descript. p. 206. Delile, fl. agypt. 64. t. 23. f. 2 and 3.

Var. a; smaller, sea-side plant; stems humble, diffuse. Delile, l. c. f. 2.

Var. β; a larger plant, native of sandy places, with taller, erect stems, and more slender and more acutely divided leaves.


Sect. II. Caro'ta (from car, celt. red; colour of root). D. C. prod. 4. p. 211. Prickles of secondary ribs slender, separate, even to the base. Rays of umbel nearly equal, or gradually shorter to the centre.

Small-flowered Carrot. Fl. June. Jul. Clt. 1824. Pl. 3 fl. 9 D. INVOLUCRATUS (Sibth. and Smith, fl. grece. t. 271. Smith, prod. 1. p. 184.) stem hispid from spreading hairs; leaves bipinnate; leaflets pinnatifid; leaves of involucrum pinnatifid, longer than the umbel; umbellules few-flowered, uniform; leaves of involucels narrow. $\odot$. H. Native of Cyprus, by the sea-side. Perhaps the same as D. Cri'ticus, Mill. dict. no. 5. Fruit small, scabrous from silvery prickles, which are hooked and glochidiate at the apex.

Involuterated Carrot. Fl. June. July. Clt. ? Pl. 2 to 4 fl. 10 D. CAROB'TA (Lin. spec. 348.) stem hispid; leaves bipinnate, and trinipate; leaflets pinnatifid, with linear-lanceolate acute segments; umbels with a solitary, coloured, abrotive flower; when in seed concave; bristles of fruit slender; leaves of involucrum pinnatifid, not so long as the umbels; umbellules few-flowered, equal; leaves of involucels undivided or trifid. $\odot$. H. Native of Europe, Tauria, Caucasus, and now introduced to South America, China, Cochín-china, &c. in pastures and the borders of fields, in a gravelly soil; common in Britain, in like situations. Smith, engl. bot. 1174. Mart. rust. t. 82. Fl. dan. 725. Planch. off. t. 176. Hayn. arz. gew. t. 7. t. 2. D. vul'garis, Neck. D. polygamus, Jacq. vind. 3. p. 43. t. 78. Caücalis Carótâ, Crantz. Huls. ang. p. 114. Staphylinus, Riv. pentap. ir. t. 26. Pastinæa sylvestris, Math. valgr. vol. 2. p. 157. f. 1.—Gen. emac. 1028.—Fuchs. hist. p. 684. Root slender, aromatic, and sweetish, resembling the garden carrot, which is only a cultivated variety. Leaves rather hairy. Umbels white, except the one central neutral flower, which is blood red. Seeds small, protected by the incurvation of all the flower-stalks, by which the umbels are rendered hollow, like a bird's nest. There are several varieties of the wild carrot, besides the cultivated kinds.

Var. β, sativa (D. C. prod. 4. p. 211.) root spindle-shaped, thick, succulent. This is the cultivated carrot, of which there are varieties with white, red, but usually yellow or copper-coloured roots.

The root of the plant, in its wild state, is small, dry, sticky, of a white colour, and strong flavoured; but the root of the 7
cultivated variety is large, succulent, and of a red, yellow, or pale straw colour.

Use.—It is used in soups and stews, and as a vegetable dish. Parkinson informs us that, in his day, ladies wore carrot leaves instead of feathers. In winter, an elegant chimney ornament is sometimes formed by cutting off a section from the head or thick end of a carrot, containing the bud, and placing it in a shallow vessel with water. Young and delicate leaves unfold themselves, forming a radiated tuft, of a very handsome appearance, and heightened by contrast with the season of the year.

Varieties.—Those in common cultivation are:
1. Large red or field carrot, grows to a large size, and is chiefly cultivated in fields, and in farmers’ gardens, for colouring butter.
2. Orange carrot. The root is long and large, of an orange colour, and is the best sort for the main crop.
3. Early horn. Root short, smaller. It is the best kind for a small, early crop; also for shallow soils.
4. Late horn. With the same characteristics as the preceding, but suited for a late crop.

William Christie enumerates the following sorts of horn carrots:
—Early red, common early, long horn. Of long carrots:
—White, yellow, long yellow, long orange, long red, and the Altham, or superb, originally from Cheshire.

Soil.—The carrot requires a light mellow soil, mixed with sand, which should be dug or trenched one or two spades deep, breaking well all the lumpy parts, so as to form a porous bed, and an even surface. The orange and red sorts, on account of their longer roots, require a soil proportionally deeper than the horns.

Seed estimate and sowing.—The seeds have numerous forked hairs on their ribs, by which they adhere together, and therefore should, previously to sowing, be rubbed between the hands, and mixed with dry sand, in order to separate them as much as possible. They are also very light, and therefore a calm day must be chosen for sowing; and the seeds should be disseminated equally, and trod in before raking. Previously to sowing, if convenient, the seed should be proven, by sowing a few in a pot, and placing it in a hot-bed, or hot-house, as it is more frequently bad than most garden seeds. For a bed 45 feet by 30, one ounce will be requisite, and the same for 150 feet of drill rows.

Times of sowing.—To have early summer carrots, sow on a warm border in the beginning of February, or, to have them still more forward, sow in a moderate hot-bed, giving copious admission of air. In the open garden, begin with the early horn, in the last fortnight of February, or first week of March, as dry, fine, and open weather may occur. The first sown beds should be assigned a favourable situation, and covered for a time with haulm. Follow with the orange, in the first fortnight of March, and make successive sowings thence to the 20th of April for main crops. Add smaller sowings twice in May, for plants to draw young late in summer; also sow a few at the commencement of July, for a later succession of young carrots in summer and autumn. Lastly, in the beginning of August, two separate small sowings may be made for plants to stand the winter, and afford young roots early in spring, March and April.

Insects.—Carrots, when they come up, are apt to be attacked by insects, like the turnip; the most approved remedies for which are thick sowing, in order to afford both a supply for the insects and the crop; and late sowing, especially in light soils, thus permitting the grubs to attain their fly state before the seed comes up.

Culture.—When the plants are up 2 or 3 inches in growth, in May and June, they will require thinning and clearing from weeds, either by hand or small hoeing. Thin from 3 to 5 inches’ distance, such as are designed for drawing in young and middling growth. But the main crop, intended for larger and full-sized roots, thin to 6 or 8 inches’ distance. Keep the whole clean from weeds in their advancing young growth. Some of small and middling growth will be fit for drawing in June and July; large sizeable roots, in August and September; and those of full growth, by the end of October.

Preserving in winter.—Carrots are taken up at the approach of winter, cleaned, and stored among sand. They may be built very firm, by laying them heads and tails alternately, and packing with sand. In this way, if frost be excluded from the storehouse, they keep perfectly well till March or April of the following year. Some persons insist that the tops should be entirely cut off at the time of storing, so as effectually to prevent their growing; while others wish to preserve the capability of vegetation, though certainly not to encourage the tendency to grow.

To save seed.—Plant some of the largest best roots in October, November, or the last fortnight of February, 2 feet apart; insert them a few inches over the crowns. They will yield ripe seed in autumn, of which gather only from the principal umbel, which is likely not only to afford the ripest and largest seed, but the most vigorous plants. A considerable quantity of carrot seed, for the supply of the London seedsmen, is raised near Weatherfield in Essex; and much is imported from Holland.

Field culture of the carrot.—It is observed, by a judicious writer, that the carrot has been too much neglected on lands, where it would have yielded a more valuable product in agriculture perhaps than any bulbous or tap-rooted plant whatever. Several contradictory experiments in its culture have been detailed in a number of publications, from which the practical husbandman will be at a loss to draw any definite conclusion. But in a communication to the board of agriculture from Robert Burrows, an intelligent Norfolk farmer, who has cultivated carrots on a large scale, and with great success, for several years, so accurate an account is presented of the culture, application, and extraordinary value of this root, that carrots will probably soon enter more largely into the rotation of crops on suitable soils.

Varieties.—The only sort adapted for field culture is the long red or field carrot. New seed is most essential, as it will not vegetate the second year.

The best soil for the carrot is a deep rich sandy loam; such a soil ought at least to be a foot deep, and all equally good from top to bottom; on any other the field culture of the carrot will not answer.

In preparing the soil for the carrot, it is essential to plough it before winter, that it may be pulverized by frost, and to work it well in the spring to at least the depth of a foot. This deep tillage may be perfectly accomplished by means of the trench plough, following the common one, or even by the common one alone with a good strength of team; but the former method is to be preferred, wherever the lands are inclined to be stiff or heavy. Three ploughings are mostly found sufficient where the land has been previously in a state of tillage, but more may in other cases be necessary. As soon as the last ploughing has been made in March, the land should be harrowed, and the surface made as fine as possible. In Suffolk the farmers sow carrots after turnips, barley, and peas, set upon a rye-grass ley; the crops upon the first have generally been most productive; next to that they prefer the latter. In the first place, they feed off the turnips by the beginning of February, and then lay the land up in small bulks or furrows, in which state it remains till the second week in March, when it is harrowed down, double furrowed to the depth of about a foot, and the seed sown.

The climate most suitable to the carrot is the same as for the turnip; but they will thrive better than the turnip in a dry and windy situation.
warm climate, and are consequently of better growth in the south of England and France, in proportion to their size in moist climates, as Holland and Ireland, than the turnip.

Manure, according to some, should not be given to carrots the year they are sown, as it is alleged when the roots meet with it they become forked and wormy. This, however, is only applicable to cases in which recent unfermented manure has been given, or where other manure has not been properly broken in pieces, and spread over the soil, or in the drills. The Suffolk and Norfolk farmers, who are the best carrot growers, always use dung; a suitable proportion of well-rotted farm-yard dung being constantly turned into the soil at the last ploughing in March, as it has been fully shown by various trials detailed in the Annals of Agriculture, and other books on husbandry, that though good crops of carrots may be occasionally grown without the aid of manure, it is only by the liberal application of that substance that the greatest produce possibly can be obtained, as they are in general found to bear a relative proportion to the quantity that may have been employed. Mr. Burrows prepares the land with a good dressing of about 16 cart loads per acre of rotten farm-yard manure, or cottagers’ ashes,—the load about as much as three horses can draw. He usually sows wheat stubbles after clover, ploughing the first time in autumn, and once more in the early part of the month of February, if the weather permits; setting on the manure at the time of sowing, which is about the last week in March, or sometimes as late as the second week in April. In Suffolk, when carrots are intended to be sown after peas, they usually plough the stubble as soon as the harvest is over, in order that the land may clear itself of weeds; in December, it is laid up in small balks to receive the benefit of the frosts; in February, it is harrowed down, and manured at the rate of 15 loads per acre; the manure ploughed in to the depth of about 4 inches, and in the month of March the land is double-furrowed, and the seed sown. By pursuing this method, they say, the manure lies in the centre of the soil, and not only affords nourishment and support to the carrot in its perpendicular progress, but renders it easy to be turned up by a single ploughing, and greatly promotes the growth of the succeeding crop of barley. In Norfolk, it is the practice to sow carrots after a crop of turnips. The manure, after being put on the land in the beginning of March, is first ploughed in with a common plough, and afterwards trench ploughed about 14 or 15 inches deep; it is then harrowed very fine, and the seed sown about the beginning of March.

The season for sowing the carrot, preferred by Mr. Burrows, is the last week in March or first of April; but he prefers the first period, having generally found early crops the most productive. The usual preparation of the seed for sowing, is by mixing it with earth or sand, to cause it to separate more freely; but Burrows adds water, turns over the mixture of seeds and moist earth several times, and thus brings it to a point of vegetation before he sows it. "Having then weighed the quantity of seed to be sown, and collected sand or fine mould in the proportion of 2 bushels to an acre, I mix the seed with the sand or mould 8 or 10 pounds to every 2 bushels, and this is done about a fortnight or 3 weeks before the time I intend sowing; taking care to have the heaps turned over every day, sprinkling the outside of them with water each time of turning over, that every part of the sand heaps may be equally moist, and that vegetation may take place alike throughout. I have great advantage in preparing the seed so long beforehand; it is by this means in a state of forward vegetation, therefore lies but a short time in the ground, and by quickly appearing above ground, is more able to contend with those numerous tribes of weeds in the soil, whose seeds are of quicker vegetation." Suppl. &c.

The quantity of seed, when carrots are sown in rows, is 2 pounds per acre, and for broad-cast sowing 5 pounds. Burrows sows 10 pounds per acre in the broad-cast manner.

The usual mode of sowing the carrot is broad-cast, but perhaps the better mode would be to sow them in rows at 12 or 14 inches asunder; drawing the drills, and hoeing the intervals by any suitable hoe. The most common practice, however, where carrots are best cultivated, is the hand or broad-cast method, the seed being dispersed as evenly as possible over the land, after the surface has been reduced to a very fine state of pulverization by harrowing, in order to provide a suitable bed for it to vegetate in, being then covered in by means of a light harrow. As the seed is not of a nature to be deposited with much regularity by the drill, and as the young plants can be easily set out to proper distances in the operation of hoeing, this is probably the most appropriate method of putting such sort of seed into the ground. And an additional proof of it is indeed found in its being that which is almost universally adopted in those districts where carrot-husbandry is practised to the greatest extent. The drill method, however, would save much hand labour. The seed may either be deposited by the drill-machine, or by furrows made with a hoe or other implements, burying the seed about an inch in depth, and harrowing once.

The after culture given to the carrot consists entirely of hoeing and weeding. In Suffolk they are hoed generally 3 times in the season. The first time, as soon as the plants can be distinguished from the weeds, which should be done with a 3-inch hoe. It is an operation that requires to be performed with great attention, as it is extremely difficult to distinguish the young carrots from the weeds. The second hoeing should be given in 3 or 4 weeks afterwards, according to the forwardness of the crop; it may be performed with common hoes, care being taken to set out the plants at proper distances. From 8 to 15 inches each way is the common distance, at which they are allowed to stand; and it has been proved by experience, that carrots which grow at such distances always prove a more abundant crop than when the plants are allowed to stand closer together. The third hoeing is commonly made about the middle or end of June, and in this, besides destroying the weeds, another material circumstance to be attended to, is to set the carrots at proper distances, and also wherever any have been left double at the former hoeings, to take the worst of the two plants away.

Carrots sown according to the plan of Burrows, are ready to hoe within about 5 or 6 weeks. He hoes 3, and sometimes 4 times, or until the crop is perfectly clean. The first hoeing is with hoes 4 inches long, and 2½ inches wide. The second hoeing invariably takes place as soon as the furrows are made, and is performed with 6-inch hoes, by 2½ inches wide. By this time the plants are set; the first time of hoeing nothing was cut but the weeds. He leaves the plants 9 inches apart from each other, sometimes they will be a foot or even farther asunder.

Carrots are generally taken up in the last week of October. The operation is performed by 3-pronged forks. "I take up in autumn a sufficient quantity to have a store to last me out any considerable frost or snow that may happen in the winter months. The rest of the crop I leave in the ground, preferring them fresh out of the earth for both horses and bullocks. The carrots keep best in the ground, nor can the severest frosts do them any material injury; the first week in March it is necessary to have the remaining part of the crop taken up, and the land cleared for barley; the carrots can either be laid in a heap, with a small quantity of straw covered over them, or they may be laid into some empty outhouse or barn, in heaps of many hundred bushels, provided they are put together dry. This latter circumstance it is indispensable to attend to; for if laid together in large heaps when wet, they will certainly sustain
The storing of the whole crop of carrots, may be a desirable practice when winter wheat is to follow them, in which case the same mode may be adopted as for turnips or potatoes, but with fewer precautions against the frost, as the carrot if perfectly dry is very little injured by that description of weather.

The produce of an acre of carrots in Suffolk, according to Arthur Young, is at an average 350 bushels; but Burrows' crop averaged upwards of 800 bushels per acre, which considerably exceeds the largest crop of potatoes.

The use to which the carrot is applied in Suffolk are various. Large quantities are sent to the London markets, and also used as food to different kinds of live stock. Horses are remarkably fond of carrots, and it is even said when oats and carrots are given together, the horses leave the oats and eat the carrots. The ordinary allowance is about 40 or 50 pounds a day to each horse. Carrots, when mixed with chaff, that is, cut straw, and a little hay, keep horses in excellent condition for performing all kinds of ordinary labour. The farmers begin to feed their horses with carrots in December, and continue to give them chiefly that kind of provender till the beginning or middle of May; to which period, with proper care, carrots may be preserved. As many of the farmers in that country are of opinion, that carrots are not so good for horses in winter as in spring, they give only half the above allowance of carrots at first, and add a little corn for a few weeks after they begin to use carrots.

The application of the carrot to the feeding of working cattle and hogs, is thus detailed by Burrows: "I begin to take up the carrot crop in the last week of October, as at that time I generally finish soiling my horses with lucern, and now solely depend upon my carrots, with a proper allowance of hay, as winter food for my horses, until about the first week of June following, when the lucern is again ready for soiling. By reducing this practice to a system, I have been enabled to feed 10 cart horses throughout the winter months for these last 6 years, without giving them any corn whatever, and have at the same time effected a considerable saving in hay. I give them to my cart-horses in the proportion of 70 pounds weight of carrots a horse per day, upon an average, not allowing them quite so many in the very short days, and sometimes more than that quantity in the spring months, or to the amount I withheld in the short winter days. The men who tend the horses slice some of the carrots in the cut chaff of hay, and barn door refuse; the rest of the carrots they give whole to the horses at night, with a small quantity of hay in their racks, and with this food my horses generally enjoy uninterrupted health. I mention this, as I believe that some persons think that carrots only, given as food to horses, are injurious to their constitutions; but most of the prejudices of mankind have no better foundation, and are taken up at random, or inherited from their forefathers. So successful have I been with carrots, as a winter food for horses, that with the assistance of lucern for soiling in summer, I have been enabled to prove by experiments, conducted under my own personal inspection, that an able Norfolk team-horse, fully worked two journeys a day, winter and summer, may be kept the entire year round upon the produce of one statute acre of land. I have likewise applied carrots with great profit to the feeding of hogs in winter, and by that means have made my straw into a most excellent manure, without the aid of neat cattle. The hogs so fed are sold on Norfolk hill to the London dealers as porkers." The profits of carrots so applied, he shows in a subsequent statement, together with an experiment of feeding four Galloway bullocks with carrots, against four others fed in the common way with turnips and hay.—Burrows' Communications, &c.

In comparing the carrot with the potato, an additional circumstance greatly in favour of the former is, that it does not require to be steamed or boiled, and it is not more difficult to wash than the potato. These, and other circumstances considered, it appears to be the most valuable of all roots for working horses.

The use of the carrot in domestic economy is well known. Their produce of nutritive matter, as ascertained by Sir H. Davy, is 98 parts in 1000, of which 3 are starch, and 95 sugar. They are used in the dairy in winter and spring to give colour and flavour to butter. In the distillery, owing to the great proportion of sugar in their composition, they yield more spirit than the potato; the usual quantity is 12 gallons per ton. They are excellent in soups, stews, and haricots, and boiled whole with salt beef.

Medical qualities.—The seeds, especially of the wild variety, have a moderately warm pungent taste, and an agreeable smell. They are carminative, and are said to be diuretic. The roots, especially of the cultivated variety, contain much mucilaginous and succulare matter, and are therefore highly nutritious and emollient. When beaten to a pulp, they form an excellent application to carminomatus and ill-conditioned ulcers, allaying the pain, checking the suppuration and fetid smell, and softening the cullos edges.


11 D. maritimus (Lam. dict. 1. p. 634. but not of Wh.) stem elongated, smooth, and glabrous at the base, but scabrous from tubercules above; leaves glabrous: lower ones bipinnate; leaflets jagged: segments linear, acuminated; leaves of involucra pinnafitid, linear, acute; of the involucres undivided; prickles about equal in length to the diameter of the fruit, which is ovate. g. H. Native of France, in sand, along the sea-shore; as well as along the shores of the Mediterranean Sea, where it is generally mixed with D. Carota, but from which it is easily distinguished. D. C. fl. fr. 4. p. 329. bot. gall. 1. p. 215.


12 D. glaberrimus (Desf. fl. ad. 1. p. 244. t. 64.) stem glabrous, or rather scabrous from small down; leaves pinnate; leaflets cuneate, bluntly 3-5-lobed, glabrous; leaves of involucra pinnafitid, acute, one half shorter than the umbels; involucres trifid or simple; prickles about equal in length to the breadth of the fruit, which is ovate. g. H. Native of the north of Africa, near Tazor, in woods of palm trees. Flowers small, white.

Quite-glabrous Carrot. Pl. 1 to 2 feet.

13 D. Gingidiom (Lin. spec. 348.) stem petioles scabrous from scattered bristles; leaves bipinnate; leaflets deeply toothed, ovate: segments obtuse, mucronate; leaves of involucra striated, pinnafitid, about equal in length to the umbels; prickles bristle-formed, equal in length to the breadth of the fruit, capitably glochidiate at the apex. g. H. Native of Corsica, on rocks by the sea-side, and probably of Sicily. D. Mauritianicus, Salzm. exsic.—Gingidium, Math. ed. Valgr. 373. f. 1. D. lucidus, Lin. fil. suppl. 179. ex Smith, in Lin. trans. 9. p. 133.—Bocc. mus. t. 20. Habit of D. Hispianicus, but differs in the fruit. Trzydaw, is a name employed by Dioscorides for an umbelliferous plant, but what plant is now unknown.

Chervil-like or Shining-leaved Carrot. Fl. June, July. Clt. 1722. Pl. 2 to 3 feet.

Spanish Carrot. Fl. Ju. Aug. England. Pl. 1 to 2 feet. 15 D. pectinatus (D. C. prod. 4. p. 212.) stem smoothish, striated, rather scabrous at the apex; leaves bipinnate, glabrous; leaflets ovate-lanceolate, pinnatifid: segments ovate-lanceolate, acute; leaves of involucra pinnatifid, about equal in length to the umbels, which are many-rayed; prickles simple, regularly pinnated, shorter than the breadth of the fruit, which is ovate. ʃ. H. Native country unknown. This species differs from all the rest in the fruit.

Pectinated-fruited Carrot. Fl. Ju. Jul. Clit.? Pl. 2 to 3 ft. 16 D. Mauritius (All. pedem. no. 1381. t. 61. f. 1.) stem scabrous from retrograde bristles; leaves bipinnate, glabrous; leaflets of the lower leaves lanceolate, deeply toothed: of the superior leaves linear, acute; leaves of involucra straited, pinnatifid, shorter than the umbels; prickles simple, acute, exceeding the breadth of the fruit, which is ovate. ʃ. H. Native in fields about Nice, and in the south of France, and of Mauritania. D. C. fl. fr. 5. p. 512. and probably of Lin. spec. 348. V. ʃ. pterocleatus (D. C. prod. 4. p. 212.) leaves of the involucres variable, some of them undivided; and some, as the outer ones, pinnatifid. ʃ. H. Native of Tauria, on the banks of rivers.

Mauritian Carrot. Fl. Ju. July. Clit. 1768. Pl. 3 ft. 17 D. maximus (Desf. fl. atl. 1. p. 241.) stem scabrous, striated; leaves bipinnate or tripinnate; leaflets of the lower leaves ovate, equally cut, with obtuse mucronate segments: of the upper leaves linear, acute; leaves of involucra pinnatifid, about equal in length to the umbels; prickles gladiolate at the apex, equal in length to the breadth of the fruit, which is ovate. ʃ. H. Native of Mauritania, Sardinia, south of France, on the borders of fields. Umbels large, radiating; having the central flower abortive.

Largest Carrot. Pl. 2 to 4 feet. 18 D. uttayus (Sibth. et Smith, fl. grece. t. 269. Smith, prod. 1. p. 184.) stem hairy from spreading pili; leaves bipinnate; lower leaflets cuneate, pinnatifid, mucronate: superior ones lanceolate, finely serrullated; involucra shorter than the umbels; leaves of involucres membranous; central flowers of umbels abortive, and of a different colour from the rest. ʃ. H. Native of the Grecian islands, and of Asia Minor.

Spotted Carrot. Pl. 1 foot. 19 D. Polygamus (Gouan. ill. p. 9.) stem terete, nearly scabrous; leaves bipinnate, smoothish, but pilose beneath on the nerves, as well as on the petioles; leaflets pinnatifid: segments lanceolate-linear, acute; leaves of involucra trifid or pinnatifid; outer flowers of umbel abortive; prickles acute, about equal in length to the fruit, which is ovate. ʃ. H. Native of Spain, and probably of Sicily, if the figure in Bocc. sic. t. 40. f. 3. appertain to this species. D. Carota β, Pers. exch. exclusive of the synonyme of Jaq. Fruit larger than those of D. Carota, and the prickles are twice the length. Perhaps sufficiently distinct from D. Carota.


Hispid Carrot. Fl. June. July. Clit. 1804. Pl. 1 to 2 feet. 21 D. grandiflorus (Desf. fl. atl. 1. p. 240. t. 59.) stem pilose; leaves tripinnate and quadruplicate; leaflets trichid, linear, cuspidate; leaves of involucra pinnatifid, with subulate segments, about equal in length to the radiating umbles; prickles peltately gladiolate at the apex, exceeding the breadth of the fruit, which is ovate. ʃ. H. Native of Algiers, among corn. Flowers like those of Orlaya grandiflora, and the leaves like those of D. Mauritius, but differs in the prickles of the fruit being gladiolate at the apex.

Great-flowered Carrot. Pl. 2 to 3 feet. 22 D. pusillus (Michx. fl. bor. amer. 1. p. 164.) stem hispid from retrograde pili at the base, and rather scabrous at top; leaves bipinnate, rather scabrous; leaflets cut into linear segments; leaves of involucra pinnatifid, about equal in length to the umbels, which are small; prickles distinctly gladiolate at the apex, about equal in length to the breadth of the fruit, which is ovate. ʃ. H. Native of Carolina, at St. John's and Savannah, in dry places (Ell. sketch. 1. p. 349.); at the Red River (Nutt. in litt.); in Pennsylvania, at Reading (Herb. Koch.). Truly distinct from D. Carota.

Small Carrot. Pl. 1 foot. 23 D. microphyllus (Presl. in herb. Haeke, ex D. C. prod. 4. p. 213.) stem villous from soft retrograde hairs, especially at the bottom; leaves bipinnate, villous; leaflets cut into linear segments; leaves of involucra pinnatifid, about equal in length to the umbels, which are small and crowded; prickles distinctly gladiolate at the apex, about equal in length to the breadth of the fruit, which is ovate. ? ʃ. H. Native of the north-west coast of America, at Nootka Sound; Straits of De Fuca; Rocky places of the Grand Rapids of the Columbia; and on the plains of the Multnomah River. Very nearly allied to D. pusillus, but the hairs on the stem are more numerous, longer, soft, and not tubercular at the base; and the fruit is a little larger.

Small-leaved Carrot. Pl. 1 foot. 24 D. setiviolatus (Desf. fl. atl. 1. p. 244. t. 65.) stem smooth, erect; leaves decumbent, pubescent; leaflets many-parted, opposite, somewhat verticillate: segments elongated, filiform, very narrow; leaves of involucra multifid; fruit cylindrical, pubescent, ciliately echinated at the angles; prickles short. ʃ. H. Native of Mauritania, near Mascar, on uncultivated hills. Central flowers abortive. Perhaps the same as D. verticillatus, Horn. hort, hafn. 1. p. 272.

Bristle-leaved Carrot. Pl. 3 feet. 25 D. aureus (Desf. fl. atl. 1. p. 242. t. 61.) stem hispid from spreading pili; leaves glabrous, supra-decompost; leaflets multifid: segments linear-lanceolate, acute, with rather revolute edges; leaves of involucra and involucres decomposed, reflexed; prickles stiff, peltately gladiolate at the apex, longer than the diameter of the fruit, which is oblong. ʃ. H. Native of Mauritania, in corn-fields near Mascar; and of Sicily and Calabria, in argillaceous soil; and of Lycia. Flowers white,
but becoming yellowish on drying. Umbels of many rays. Fruit yellow.


26 _D. crenatus_ (Desf. fl. atl. 1. p. 242. t. 62.) stem rather roughish from small, retrograde down; leaves glabrous, pinnate; leaflets multifid, somewhat verticillate: segments setaceous, stiffish; leaves of involucre many-parted at the apex; prickles bristle-formed, acute, and a little cleft at the apex, double the length of the diameter of the fruit. 2. H. Native of Mauritania, near Tangiers, Mascar, Tlemsen, and on Mount Atlas. Bristles of fruit purplish in Desfontaine's specimens, but yellowish in those of Salzmann. Torilis crenata, Spreng. umb. spec. 141. D. meifolius, Broth. phyt. t. 36. is not distinct from the present species.

_Long-haired Carrot._ Fl. June, Jul. Clt. 1804. Pl. 2 to 2 ft. 27 _D. hispidus_ (Sibth. and Smith, fl. grac. t. 269. prod. 1. p. 184.) stem hairy from spreading pli; leaves bipinnate; leaflets lanceolate, finely serrulat: leaves of involucre entire, trifid, or pinnatifid, shorter than the umbels; prickles of fruit elongated, glochidiate, and coloured. 2. H. Native in the islands of the Archipelago and Asia Minor, frequent. Spreng. umb. 143. Leaves of involucres membranous. Flowers white: central ones abortive. Prickles of fruit golden yellow.

_Hairy Carrot._ Pl. 2 feet.

29 _D. hilaris_ (Sibth. et Smith, fl. grac. t. 270. prod. 1. p. 184.) stem beset with spreading hairs; leaves puberulous, bipinnate; leaflets multifid, with linear lobes; leaves of involucre trifid, longer than the umbels; involucres membranous, on one side; central flower discolorious. 2. H. Native of Asia Minor.

_Two-coloured-flowered Carrot._ Pl. 1 to 1½ foot.

**Sect. III. _Anisacanthus_ (from _anisos, unequal, and _aktin, a ray; in allusion to the unequal rays of umbels)._ D. C. prod. 4. p. 214. Carphophore undivided, or hardly bifidly emarginate at the very top. Rays of umbels very unequal.

29 _D. brachyanthus_ (Sieb. exsic. nov. holl. no. 115.) stem glabrous; leaves bipinnate, smoothish; leaflets divided into linear lobes; leaves of involucre multifid, much shorter than the rays of the umbel, which are unequal; leaves of involucres simple, much shorter than the pedicels; prickles glochidiate at the apex, about equal in length to the breadth of the fruit, which is oblong. 2. H. Native of New Holland. Stem 2 or 3 from the same root, about a foot high. Rays of umbels diverging much.

**Brachiate-umbellled Carrot._ Pl. 1 foot.

30 _D. toriloides_ (D. C. prod. 4. p. 214.) stem hispid from deflexed hairs; leaves bipinnate, scabrous; leaflets divided into linear lobes; leaves of involucre multifid, much shorter than the rays of the umbels, which are unequal and scabrous from bristles; leaves of involucre simple, much shorter than the pedicels; prickles stalkily hooked at the apex, about equal in length to the breadth of the fruit, which is ovate-oblong. — Native of Peru, on the mountains; and of Mexico at Toluco, and the Cordil-eras de Guichilaque; and probably of Chili and Caraccas. D. montanus, Willd. rel. in Schultes, syst. 6. p. 482. Torilis Peruviana, Presl. in herb. Hanke. Habit of _Torilis_; but differs from that genus in the albumen not being involute. Rays of umbels shorter and less diverging than in the preceding species.

**_Torilis-like Carrot._ Pl. 1 foot.

31 _D. montevideensis_ (Hort. berol. ex Berth. in herb. Balb. D. C. prod. 4. p. 214.) stem, petioles, and under side of leaves hispid from long, soft villi; leaves bipinnatifid; segments divided into linear-subulate lobes; terminal umbels 5-7-rayed: axillary ones 3-5-rayed; rays unequal; prickles of fruit glochidiate at the apex. 2. H. Native of Monte Video. Leaves of involucre multifid, about equal in length to the umbel. Petals obovate,


32 _D. austriacus_ (Poppl. exsic. no. 97. diat. no. 303.) stem simple, hispid; hairs on the lower part of the stem deflexed; leaves bipinnate, hispid; leaflets multifid, with short acute lobes; leaves of involucre multifid, almost exceeding the umbels, which are crowded, and composed of few rays; prickles of fruit glochidiate at the apex. 2. H. Native of Chili. Flowers small, golden yellow in the dried state. The whole herb yellowish.

**Southern Carrot._ Pl. 1 to 2 feet?

† _Species not sufficiently known._

33 _D.? cumingii_ (Lam. ill. t. 192. f. 2. Poir. suppl. 2. p. 118.) stem glabrous, flexuous; leaves tripartite; segments linear, very long, glabrous; leaves of involucre ternate, shorter than the umbel, which is composed of few rays; prickles shorter than the breadth of the fruit, which is oblong. — Native country unknown. Perhaps a species of _Anthiscus._

_Cuinn-like Carrot._ Pl. ½ foot.

34 _D. cuinnii_ (Tineo. pug. spec. 1. p. 6.) stem erect, striated, hispid; leaves pinnate; leaflets ovate, deeply toothed; teeth obtuse, puberl.; petioles hairy; leaves of involucrum pinnatifid, larger than the umbel. 2. H. Native of Sicily. Schultes, syst. 6. p. 628. Schrank, in Fl. 1819. p. 383. Outer flowers of umbels yellow; inner ones reddish. Fruit unknown.

_Sicilian Carrot._ Pl. 1 to 2 feet.

35 _D. proliiferus_ (Presl. del. prag. 130.) stem erect, rather dichotomous, furrowed, covered with retrograde hairs; leaves bipinnate; leaflets cordate, pinnatifid, toothed; leaves of involucre entire, or deeply toothed; primary umbel proliferous; pedicels and fruit very hairy. 2. H. Native country unknown, according to Gussone, prod. fl. sic. 1. p. 324.; but according to Presl, it is a native of Sicily, between Syracuse and Catana, in sand by the sea-side. Perhaps the same as _D.siculus._

_Proliferous-umbelled Carrot._ Pl. 1 to 2 feet.

36 _D.? alatus_ (Poir. suppl. 2. p. 118.) stem erect, furrowed, hairy; leaves glabrous, somewhat pinnate; leaflets broadly cut: segments bluntish; petioles plicate; leaves of involucre pinnatifid at the apex, with linear segments; rays of umbel crowded, hispid; ribs of fruit membranously winged, spinous-toothed. 2. H. Native of Barbary, in uncultivated stony places by the sea-side,

_Winged-fruited Carrot._ Pl. 2 feet.


_Fetid Carrot._ Pl. ?

38 _D. nigridus_ (Hort. par.) _These 2 species have not been described._

_Coll._ All the species grow well in any common garden soil. The seeds of them should be sown in spring.

**Suborder II. _Camyllophyllum_ (from _camyllos, kamyplos, curved, and _spirous, spetum, a seed)._ D. C. prod. 4. p. 215. Albumen involute, or marked by a longitudinal furrow or channel on the inner side.

_Tribe XIII._

_ELÆOSELINÆ._ (This tribe contains plants agreeing with the genus _Elæoselium_ in important characters) or _Camyllophyllum multifidum_ ala'te. Koch, in litt. D. C. prod. 4. p. 215. Fruit cylindrical, more compressed from the back than from the sides. Mericarps with 5 filiform, primary ribs; and 4 secondary ribs: the 2 dorsal ones of these last nerve-formed:
and the 2 lateral ones expanded into wings: having the margins nerve or vein-formcd. Seed involute, semi-lunar.


Lin. syst. Pentandria, Diggynia. Margin of calyx hardly 5-toothed. Petals obovate, entire, with an inflexed point. Fruit somewhat compressed from the back, nearly terete, 4-winged. Mericarps with 5 filiform primary ribs: the 3 intermediate ones dorsal, and the 2 lateral ones placed within the wings and the nerve-formed margins: and 4 secondary ribs, the inner ones of those last obtuse, and the 2 outer ones expanded into membranous wings. Vittae under all the ribs abounding in oil, those under the primary ribs slenderer and narrower than those under the secondary ones; and 4 in the commissure. Seed involute.


2 H. thaspoides (D. C. prod. 4. p. 215.) leaves pinnate, hardly velvety on the petioles and nerves; leaflets pinnate-parted, cuneate at the base; lobes oblong-ovate, toothed; ultimate one trifid. 2 H. Native of Mexico, about St. Angel. Herb 6-7 feet high, with the habit of Thapsia Gargnica. Teeth of calyx nearly obsolete. Fruit a little smaller than in E. meodes, but the rest of the plant is similar.


Cult. The plants will grow in any common garden soil; and are only to be increased by seed.

Tribe XIV.

CAUCALISNEAE (this tribe contains plants agreeing with Caucalis in important characters), or Campylospérie multiflora armata, Koch, umb. p. 79. D. C. prod. 4. p. 216. Fruit contracted from the sides or nearly terete. Mericarps with 5 filiform primary bristles or prickly ribs: the lateral ones placed in the commissure, which is flat: and 4 secondary more prominent, prickly ribs, or they are obliterated from the copious prickles covering the whole furrows. Seed involute or inflexed on the margin. Caucalisneae is allied on one hand to Daucineae, and on the other to Scandiceae.


Lin. syst. Pentandria, Diggynia. Teeth of calyx 5, ovate-lanceolate. Petals obovate, emarginate, with an inflexed point: outer ones radiating, profoundly bifid. Fruit somewhat compressed from the sides. Mericarps with 5 filiform primary bristles or prickly ribs: the 3 intermediate ones on the back and the 2 lateral ones placed in the commissure, which is flat; and 4 secondary more prominent ones, which are deeply cleft into a simple series of prickles. Vittae one in each furrow, under the secondary ribs, and 2 in the commissure, which is flat. Carpo-
leaves multifid, narrow; involucra and involucels hispid, as well as the fruit. — Native of Arabia, at Hadie.

**Narrow-leaved** Bur-parsley. Pl. 7.

*Cult.* The seeds may be sown either in autumn or spring.


*Lin. syst. Pentändria, Dígyinia.* Teeth of calyx 5, setaceous. Petals obovate, emarginate, with an inflexed point: outer ones of the umbelles larger than the central ones and bifid. Fruit contracted from the sides. Mericarps with 5 bristly primary ribs; the 2 intermediate ones on the back, and the 2 lateral ones placed in the commissure, which is flat; the secondary ribs beset with copious prickles, which occupy the whole furrows, having one vitta under each secondary rib below the prickles. Carpophore setaceous, bifid. Seed with an inflexed margin. — Herbs, with multifid leaves, beset with short adpressed hairs, which are retrograde on the stems, and erect on the rays of the umbels. Umbels opposite the leaves. Involuca of 1-5 leaves; involucels of 5-8 lanceolate ciliate leaves. Flowers white, those in the disk of the umbelles male and sterile. Prickles of fruit hair-formed, usually hooked at the apex.

**Sect. I. Euctorilis** (*Hornet, eu, well, and Törilis; this section is considered to contain the true species of the genus*). D. C. prod. 4. p. 218. Fruit covered with stiff prickles, which are usually hooked at the apex.

1 T. microcerá (Bess. cont. enum. no. 1362.) stem branched; leaves linear-cut, outer ones not elongated; umbels on long peduncles, 7-10-rayed; leaves of involuca and involucels setaceous; fruit ovate; prickles much shorter than the fruit, incurved. — O. H. Native of the Ukraine and the south of Podolia. Törilis Ukránika, Spreng. in Schulz. syst. 6. p. 485. Involucels as in *T. Anthriscum*, equal in length to the umbelles.

**Small-fruited** Hedge-parsley. Pl. 2 to 3 feet.

2 T. Anthriscus (Gmel. fl. bad. 1. p. 615.) umbels on long peduncles of from 5 to 10 close rays; leaves of involuca and involucels several, awl-shaped; fruit covered with incurved prickles. — O. H. Native of Europe and Caucasus, in hedges and on the borders of fields, very common; plentiful in Britain in like situations. Caicalis Anthriscus, Scop. fl. carm. no. 311. Huds. angl. p. 114. Smith, engl. bot. t. 987. Fl. dan. t. 919. Curt. lund. fasc. 6. t. 22. Tordylum Anthriscus, Lin. spec. 346. Curt. fl. austr. t. 261. Torilis rubèlla, Moench, meth. p. 103. Caicalis aspéra a, Lam.duct. 1. p. 656.—Riv. pent. irr. t. 32. —Baul. pin. 153. prod. 80. with a figure. Stem rough from deflexed hairs. Leaves bipinnate, pinnatifid, and sharply cut, rather soft than harsh to the touch; the lowermost one much more compound than the others. Flowers small, either white or flesh-coloured; the exterior ones only a little irregular or radiant.

**Anthriscus** or Upright Hedge-parsley. Pl. July, Aug. Brit.-

3 T. neglečétta (Schultes, syst. 6. p. 484.) stem and branches erect; leaves ovate-lanceolate, cut; the terminal one hardly longer than the rest; umbels on long peduncles of from 7 to 10 rays; involucre wanting. — O. H. Native of Sardinia, Germany, &c. in fields and on the margins of woods. Scandix infèsta, Jacq. fl. austr. 1. 46. Caicalis infèsta, Vest. ench. p. 493. ex Schultes. Peduncles longer and the fruit larger than in *T. infèsta*. Flowers white.


4 T. infèsta (Hoffm. umb. p. 89. Spreng. prod. 24.) stem erect, much branched; leaves pinnatifid, deeply cut, and sometimes almost bipinnate: the terminal leaflets elongated; umbels 3 A
UMBELLIFERÆ.

CXXXV. Torilis.


Var. β, anthriscoides (D. C. prod. 4. p. 219.) stem sparingly branched, or almost simple, tall; branches erect. O. H. This appears to be a variety intermediate between T. infestum and T. anthriscus, and is probably the T. Anthriscus, Spreng. exclusive of the synonyms.

Var. β, purpurea (D. C. 1. c.) leaflets hardly elongated. O. H. Native of the south of Europe. Torilis purpurea, Ten. append. 4. p. 12. Guss. prod. fl. sic. 1. p. 325. In the specimens examined of this variety, the flowers are white, and the prickles of the fruit are more or less coloured. Perhaps a proper species.

Troublesome or Spreading Hedge-parsley. Fl. July. Britain. Pl. 3 to 1½ foot.

5 T. heterophylla (Guss. prod. fl. sic. 1. p. 326.) stem erect, sparingly branched; segments of leaves linear-lanceolate, cut; outer or terminal one not elongated; upper ones linear, entire; umbels on long peduncles of 2-3 rays; involucra almost wanting; prickles equal in length to the breadth of the fruit. O. H. Native of Sicily, Corsica, and south of France. Caúcalis lineifolia, Requien, in litt. 1815. The fruit in this species is very variable in form and size, as in T. nodosa.


African Hedge-parsley. Pl. 1½ foot.

7 T. chloroca râpra (Spreng. syst. 1. p. 898.) stem branched, rather puberulous; leaves bipinnate; leaflets or segments lanceolate, pinnatifidly serrated; umbels on long peduncles, 7-8-rayed; involucra usually only one leaf; bristles coloured, rather soft, scabrous, glabellate at the apex, rather longer than the diameter of the fruit. O. H. Native of the Canary Islands.

Green-fruited Hedge-parsley. Pl. 1 to 2 feet.

8 T. nodosa (Garrn. fruct. 1. p. 82. t. 20. f. 6.) umbels nearly sessile, gloomerate, lateral, simple; stems prostrate; involucra of several linear hairy leaves; the outer, as well as the interior fruits covered with dense, whitish, shining, tubercular granulations. O. H. Native of Europe and the Levant, on banks, and about the borders of fields; most plentiful in a gravelly or chalky soil; plentiful in Britain. The plant is also to be met with in Chili and Peru, but has probably been transported thither. Caúcalis nodosa, Huds. angl. 114. Smith, engl. bot. t. 199. but not of All. Tordýlmum nodósum, Lin. spec. 346. Jaqc. aust. append. t. 24. Caúcalis nodifóra, Lam. dict. 1. p. 656.—Riv. pent. irr. t. 36.—Mor. oxon. sect. 9. t. 14. f. 10. Stem rough from reflexed bristles. Leaves a deep glaucous green, hairy, bipinnate, and sharply cut, with very narrow tolerably uniform segments. Petals white or reddish, hardly at all radiating or unequal. This plant is very different from Cheironium nodosum, of which it is said to be a synonym by Sprengel in Schultes, syst. 6. p. 485. The Caúcalis Hispánica, Lam. 1. p. 658, appears to be referrible to this from the description; and Caúcalis lapúlaca, Popp. diar. no. 356. pl. exsic. p. 96. does not differ from this.


9 T. japonica (D. C. prod. 4. p. 219.) stem smoothish, terete, branched; leaves pubescent, bipinnate; leaflets oblong, pinnatifid; umbels pedunculate, axillary, and terminal, 5-7-rayed; involucra and involucres of a few short subulate leaves; mericarps oblong; bristles of fruit stiff, hooked at the apex. O. H. Native of Japan. Caúcalis Japónica, Houtt. plf. syst. 8. p. 42. t. 45. f. 1. Upper branches and rays of umbel angular, beset with upright hairs.

Japan Hedge-parsley. Pl. 1 to 2 feet.

10 T. scabra (D. C. prod. 4. p. 219.) stem smoothish, terete, branched; leaves pubescent, pinnate; leaflets oblong, pinnatifid, much acuminate; umbels terminal, and opposite the leaves, 5-7-rayed, sometimes without an involucrum; leaves of involucres subulate; mericarps oblong, covered with stiff bristles, which are hooked at the apex.—Native of Japan. Cheironium scabrus, Thumb. fl. jap. 119.

Scabrous Hedge-parsley. Pl. 1 to 2 feet.

11 T. tuberculata (Spreng. in Schultes, syst. 6. p. 486.) plant glabrous, branches twiggy; leaves pinnate; leaflets linear, quite entire; involucra and involucres wanting; hairs of fruit hardly hooked.—Native of Syria. Caúcalis tuberculata, Poir. suppl. 2. p. 137. Styles tubercular at the base; hence the name. Fruit the size of that of T. microcarya.


12 T. élata (Hisp. ex Spreng. in Schultes, 1. p. 685.) plant glabrous; leaves pinnate, leaflets linear, alternate; involucrum wanting; hairs of fruit stiffer; leaves supradecomposed; leaflets lanceolate, deeply pinnatifid; outer ones elongated. O. H. Native of Nipaul, on the mountains. Caúcalis élata, D. Don. prod. fl. nep. p. 183. Caúcalis conifólia, Wall. cat. mss. Umbels of 8-10 rays. Involucrum of 5-8 linear subulate leaves.

Tall Hedge-parsley. Pl. 2 to 3 feet.

SECT. II. Trichocarpæ (from thρίς, thrix, thrix, a hair, and καρπός, karpos, a fruit; in allusion to the fruit being covered with long soft hairs). D. C. prod. 4. p. 220. Fruit covered with very long, soft, setaceous, crowded, spreading, coloured hairs, which are not hooked at the apex.

13 T. trichosperma (Spreng. umb. spec. 142.) stem nearly erect; branches smoothish; leaves bipinnate, rough from adpressed hairs; leaflets pinnatifid, acute; umbels on long peduncles, 3-5-rayed; involucrum wanting; involucres of 2-3-subulate leaves. O. H. Native of Egypt, ex Lin.; and of Syria, at Tripoli. Scándix trichosperma, Lin. mant. 57. Cheironium trichospermus, Lam. dict. 1. p. 685. but not of Schultes. Anthriscus trichospermus, Pers. ench. 1. p. 685. but not of Schultes. Bristles of fruit painted with rufous or violet colour.


Cult. Sow the seeds in the open ground.

Tribe XV.

SCANDICINÆ.E (this tribe contains plants agreeing with
Scândix in many important characters, or Campylotropemus pacificus, elongate, Koch, umb. p. 130. Sprengel in Schultes, syst. 6. p. 42. D. C. prod. 4. p. 220. Fruit evidently compressed or contracted from the sides, usually beaked. Mericarps with 5 filiform ribs, now and then winged: lateral ones margination; all equal; and sometimes all are obliterated at the base, and only evident at the tops. Seed tetately convex, having a profound furrow in front, or with the margins somewhat involute.


Lin. syst. Pentádría, Digyia. Margin of calyx obsolete, or somewhat 5-toothed. Petals obovate, truncate or emarginate, usually furnished with an inflexed point. Fruit somewhat compressed from the sides, having a very long beak; mericarps with 5 blunt equal ribs: lateral ribs margination; furrows without vittae, or with obsolete ones. Carpophore undivided, or forked at the apex. Seed tetately convex, with a deep furrow in front. —Annual herbs, with terete, rather striated stems, and bi-pinnate leaves, having the leaflets divided into linear lobes. Umbels of few rays. Involuca wanting, or of one leaf. Umbellules of few rays; involucels of 5-7 leaves. Flowers white.


3 S. Brachyc'epa (Guss. ind. sem. 1825. prod. sic. 1. p. 350.) involuca wanting; leaves of involucels entire; umbels of few rays; fruit glabrous in the semiannual part; beak hardly twice the length of the seed. H. Native of Sicily, on the Nebrodes; and of Syria. This is an intermediate plant between the two sections of the genus from habit: but the beak of the fruit is compressed from the back, not from the sides. Leaves ternately decomposed, glabrous: lobes short. Stem hardly a hand high. Fruit 10 lines long.

Short-fruited Shepherd's-needle. Pl. ½ to ⅔ foot.


5 S. falca'ta (Lond. journ. 1. p. 87. t. 5. ex Hoffm.) leaves of involucels obovate, bluntly bidentate, ciliated, with membranous margins; radiant petals obovate, somewhat emarginate; fruit rather falcate, scabrous from bristles; stem and petals pilose; umbels glabrous. H. Native of Tauria, frequent. S. australis ß, Bibb. suppl. 424. Wýlia râdians, Schultes, syst. 6. p. 504.


6 S. Apicu'lata (D. C. prod. 4. p. 221.) leaves of involucels ovate, acuminate or bidentate, with membranous ciliated margins; radiant petals oblong-ovate, entire or bidual, with an acute recess; fruit scabrous from bristles; stem and petals pilose; umbels glabrous. H. Native of the Levant. Very like S. falca'ta, but differs in the involucels being acuminate and acute; in the styles being long, and at length diverging; in the lower leaves being on longer petioles, and in the plant being smaller.


7 S. gran'diflóra (Lin. spec. 369.) leaves of involucels ovate, obtuse, somewhat denticulated, with membranous ciliated margins; radiant petals somewhat obcordate, with an obtuse recess; fruit bristly; stem and leaves hairy. H. Native of Greece, Tauria, and Iberia, in fields; also of Dalmatia, if S. hirsuta of Biasioletto, collected at Lossin-Piccolo, be the same. Scândix orientalis flore maximó, Tourn. cor. p. 23. Carpothyllum grandiflorum, Lam. dict. 1. p. 686. Wýlia grandiflora, Hoffm. umb. 1. p. 15. t. 2. f. 3.

Par. ß, glabráta (D. C. prod. 4. p. 222.) stem and leaves glabrous. H. Native of the Levant, about Bagdad. Rays of umbel forming almost a straight line: lateral ones bearing 12-15 fruit, and the terminal ones 5-6, the rest abortive. Involucels spreadingly deflexed, rather ciliated. Perhaps a proper species, or a variety of S. falca'ta.


8 S. Ibe'rîca (Bieb. fl. taur. 1. p. 230.) leaves of involucels ovate, somewhat bidentate, with rather membranous ciliated margins; radiant petals obcordate, with an acute recess; fruit
sebaceous from bristles; stem furnished with one row of hairs; umbels glabrous. O. H. Native of Iberia, in corn fields, and in gravelly places; and of Persia, in the province of Aderbicdjan, at Seikhodzdi and Badalan. Wylić Ibérica, Hoffm. umb. 1 p. 19. t. 2. f. 4. Fruit nearly 2 inches long, sebaceous in the semieremic part, having the bead compressed and sebaceous at the angles; the rest smooth. Iberian Shepherd's-needle. Fl. June, Jul. Clit. 1823. Pl. 1 ft. 

† Species not sufficiently known.

9 S. GILÁNICA (S. G. Gmel. ill. p. 3. t. 21. f. 2.) stems branched, striated; fruit smooth.—Native of the north of Persia. Gmel. syst. veg. 486.

Gilan Shepherd's-needle. Pl. 1 foot.

Cult. —Sow the seeds in the open ground.


Linn. syst. Pententatoria, Dizygina. Margin of calyx obsolete. Petals ovate, truncate or emarginate, with an inflexed point, which is usually very short. Fruit contracted from the sides, beak'd; the bead shorter than the seed. Mericarps nearly terete, without any ribs, the bead alone 5-ribbed. Carpophore bifid at the apex. Seed teretely convexe, having a deep furrow in front.—Perennial, biennial or annual herbs. Stems terete, striated or furrowed. Leaves decompound, with usually linear slender segments. Umbels opposite the leaves or terminal. Involutioner wanting. Involutees of many leaves. Flowers white. The fruit varying in many of the species, either naked or furnished with a whorl of hairs at the base, resembling a collar. (Koeh, in litt.)

* Perennial species.

1 A. torquata (Duby, in D. C. bot. gall. 1 p. 239.) glabrous; stem rather striated; leaves bipinnate; leaflets ovate-lanceolate, eacerously and deeply toothed; leaves of involucres deflexed, lanceolate, acuminated, ciliated; umbels terminal; rays glabrous; outer petals radiant; fruit shining, girded by a series of small bristles at the base. O. H. Native of the Alps of the south of Provence and Piedmont. Cherophyllum torquatum, D. C. fl. fr. suppl. 505. My'iriris bulbós, All. pedem. no. 1375. exclusive of the synonyms. My'thiris torquata, Schultes. syst. 6. p. 514.


2 A. Sicula (D. C. prod. 4. p. 223.) stem glabrous, striated; leaves ternately decompound; sheaths and involucra ciliated; leaflets ovate, pinnatifid; lobes oblong, deeply toothed, bluish; fruit oblong, glabrous, smooth, girded by a series of bristles or hairs at the base. O. H. Native of Sicily, in woods and shady groves. Cherophyllum Siculum, Guss. prod. 1 p. 352.

Var. β, scabra (D. C. l.c.) fruit sebaceous from tubereles, particularly on one side. O. H. Native of Sicily.

Siciliana Rough Cherivil. Pl. 2 to 3 feet.

3 A. Cicutaria (Duby, in D. C. bot. gall. 1 p. 239.) plant smoothshist; leaves ternate, then pinnate; leaflets pinnatifid, unequal at the base; segments lanceolate, bluntly toothed; umbels opposite the leaves and terminal; rays numerous, glabrous, petals hardly emarginate, outer ones radiata; fruit ovate-oblong, smooth, naked at the base. O. H. Native of the Alps of Dauphiny and Switzerland, &c. in humid places; also of Vollynia and Podolia, in woods. Cherophyllum cicutaria, Vill. dauph. 2. p. 614. D. C. fl. fr. suppl. p. 506. Anthricus hú-

milis, Bess. enum. p. 13. no. 358. Cherophyllum daucifolium, Desf. cat. hort. par. 1828. Leaves membranous, glabrous; leaflets broad. Involutees of 5 deflexed leaves with ciliated margins. Flowers either white or red.


4 A. Sylvéstris (Hoffm. umb. 40-46. t. 1. f. 19. p. 210. t. 1. b. f. 17.) stem branched, striated, the lower part downy; leaves triply pinnate; leaflets ovate, pinnatifid, rough edged; extreme ones elongated; umbels smooth, terminal; involucres of 5 ovate fringed deflexed leaves; styles short, hardly diverging; fruit lanceolate, with a deep channel on each side, smooth. O. H. Native throughout the whole of Europe, even to Cae-


Riv. pent. irrit. t. 44. Hayn. arz. gew. 1. t. 33. Cherophyllum, no. 748. Hall. helv. 1. p. 328.—Moris. hist. 3. p. 303. sect. 9. t. 11. f. 5. Cicutària vnlgárís, Ráil. syn. p. 207. My'irris, Fuch's hist. 524. t. 525. Flowers white. Petals unequal in the marginal flowers, which alone are prolific. Perhaps A. prócerus, Bess. enum. pl. volb. 13. no. 359. is referrible to this species. The whole herb having the flavour of carrets, is eaten by domestic cattle, and is reported to be very grateful to rabbits. The snow white flowers, some of the earliest of their tribe, plentifully adorn the hedges and bushy margins of fields in spring, and announce the approach of summer. J. B. N. mentions instances of two families being poisoned by eating small quantities of the root.


Var. γ, pilosa (D. C. mem. soc. gen. vol. 4.) petioles and nerves of leaves hispid from hairs beneath. O. H. Native country unknown, but grown in gardens under the name of Cherophyllum angustárum.

Var. ε, scabrida (Spreng. prod. 4. p. 223.) fruit rather sebaceous. O. H. Native of Germany and Italy. Cherophyllum Magellénse var. a, Tenore, prod. fl. neap. append. 4. p. 15. exclusive of variety β, which is a synonyme of A. nemórosa, according to Koch.

Wild Cherivil or Smooth Cow-parsley. Fl. April, May. Brit.

Pl. 3 feet.

5 A. nemórosa (Spreng. umb. prod. 4. p. 223.) stem striated, branched, glabrous; leaves triply pinnate: leaflets pinnatifid; segments broad-lanceolate, acute; petioles pilose; umbels terminal; and opposite the leaves; leaves of involucel ciliated; fruit ovate, short, muricate, and girdled by a circle of hairs at the base. O. H. Native of Caucasus and Kantschatcha. Cherophyllum nemorósus, Hoffm. umb. 45 and 210. t. 1. f. 19. Cham. et Schlecht. in Linneá. 2. p. 390. The whole herb is very like A. syléstris, but the fruit is more ovate and shorter, and always more or less echinat.

Var. β, lucida (D. C. prod. 4. p. 223.) fruit somewhat muricate on one side; lobes of lower leaves blunt. O. H. Chere-

ropyllum lúcium, Desf. cat. hort. par. 1828.


** Annual species.

6 A. ceréfolium (Hoffm. umb. 41. 47. t. 1. f. 21. p. 210. t. 1. β, f. 26.) herb pale green, shining, delicate, and tender; stem a little hairy at the joints, only striated; leaves twice pinate, cut, with channeled footstalks; umbels either axillary or opposite the leaves, sessile, of 5-3 pubescent rays; fruit somewhat furrowed, not ribbed, oblong-linear, smooth. O. H. Native of the south of Europe. In Britain, near Woroester; in great

Var. β, trichospéra (Koch, in litt. ex D. C. prod. 4. p. 224.) stem weak, glabrous; leaves ternately decimated or triply pinnate; leaflets coarsely 5-7-toothed; segments bluntish; umbels opposite the leaves, pedunculate; rays few, glabrous; fruit oblong-linear, marinated from short down; styles short, erect. O. H. Native of Pannonia. Chaerophyllum trichospérmum, Schulter, exstr. fl. 2. t. 504. but not of Lam. Anthriscus trichospérmum, Schulter, t. 6. p. 555. but not of Pers. Chaerophyllum trichospérmum, Bess. in litt. Allied to A. cefrolium, but very different from Torilis trichospéra. Perhaps a variety of Scândix cefrolium, with scabrous fruit, ex Jacq. and Bieb, and therefore Chaerophyllum nemorosum, Jacq. appertains to this plant.


Common Beaked-parsley. Fl. May. Britain. Pl. 2 to 3 ft. Cult. All the species are of the most easy culture, and will grow in any soil and situation.


Var. β, Bóssei (D. C. prod. 4. p. 225.) stem rather hairy, erectish; leaves tripinnate; leaflets pinnatifid; segments short, bluntish; umbels of 2-3 rays. O. H. Native of Carolina. Stem a foot or a foot and a half high, contracted at the nodi in the dried state. Involuca of 1 or 2 multifid leaves; involucels of 5 ovate entire leaves. Fruit 3 lines long, without any beak. Mericarps with 5 ribs, and one vitta in each furrow. Styles 2, very short. Chaerophyllum articulátum, Bose, in herb. Vent. Procumbent Cicely. Pl. procumbent.

3 C. villósrum (Wall. cat. no. 558.) stem erect, the base beset
with retrograde hairs, and the top with spreading ones; leaves rather pilose, pinnate; leaflets bipinnatifid; lobules short, acute; umbels of 3–4 rays, without any involucre. Q. H. Native of Nepaul, on the mountain called Chandaghyri. Herb 2 feet high, branched, very hispid at the base. Involucels of 3-4 linear acute leaves. Fruit a little shorter than the pedicels. Styles short, straight.

Villous Cicely. Pl. 2 feet.

Sect. III. *Eucharophyllum* (from ev, ev, well, and chero-
phyllum; this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 255. Fruit glabrous, evidently ribbed. Styles more or less diverging.—Perennial or biennial plants.

* Biennial plants.

4 C. coloratum (Lin. munt. p. 57.) root simple, fusiform; stem terete, and is as well as the petioles pilose; leaves termi-


5 C. prosenith (D. C. prod. 4. p. 225.) root unknown; stem beset with retrograde hairs below, but glabrous above; leaves supra-decomposed, the lower ones pilose at the petioles: superi-
or ones glabrous: leaflets multifid: lobes linear; leaves of involucels cuspitate and glabrous; styles nearly diverging; fruit cylindrical.—Native of Altai. Very like *C. bulbosum*, but the styles are hardly diverging, and erect on the fruit, which is much slenderer and longer.

Prescott’s Cicely. Pl. 1½ foot.

6 C. bulbosum (Lin. spec. p. 370.) root turbinate; stem beset with retrograde hairs at the bottom, and glabrous at the top; leaves supra-decomposed; lower ones pilose at the petioles: superior ones glabrous; segments multifid, linear; leaves of involucels cuspitate and glabrous; styles nearly diverging; fruit cylindrical.—Native of Altai. Very like *C. bulbosum*, but the styles are nearly diverging, and erect on the fruit, which is much slenderer and longer.

Prescott’s Cicely. Pl. 1½ foot.

7 C. temuletum (Lin. spec. p. 570.) root spindle shaped, sub-
divided; stem solid, striated, rough with short deflexed hairs, and spotted with dark purple, swelled under each leaf like most of the other species; leaves dark green, hairy, twice pinnate; leaflets pinnatifid or lobed; umbels of many unequal hairy seeds; involucre wanting, of one leaf, rarely of several; involucels of several ovate pointed leaves, which are finely fringed at the margins and keel, occasionally confluent at the base; seeds fur-

Intoxicating or Rough Cicely, or Rough Cow-parsley. Pl. June, July, Britain. Pl. 3 feet.

* Perennial species.

8 C. mosquorum (Kit. ex Link, enum. 1. p. 281.) stem quite glabrous; leaves decomposed; leaflets lanceolate, deeply serrated, having the middle nerve and margins hairy; leaves of involucre and involucels ciliolate. Q. H. Native of Hungary. C. angulatum, Kit. According to Link and Koch, this is a very distinct plant from *Anthriscus sylvestris*, although it has been joined to it by Sprengel. Perhaps *C. ciliatum*, Kit. in Schultes, syst. is the same, and probably *C. nütum*, Wt. fl. carp. p. 85. It is perhaps only a variety of *C. aëreum*.


9 C. aëreum (Lin. spec. p. 370. but not of his munt.) stem solid, branched, angular, striated, downy, with copious short def-
exed hairs, intermixed with more or less numerous coarse bristles; leaflets decomposed: the stem ones remarkable for their tapering leaflets, with numerous fine sharp parallel segments, their surfaces hairy or smooth; fruit in the early state club-shaped, when ripe linear, crowned with the lengthened spreading styles; seeds linear, of a tawny yellow, each with 9 prominent obuse permanent ribs, which are often roughish up-
wards, as well as the furrows; involucre wanting, or of very few leaves; leaves of involucels ovate-lanceolate, pointed, reflexed, coloured. Q. H. Native of Middle Europe, among the moun-
tains. In Scotland between Arbroath and Montrose; and at Corstorphine near Edinburgh, on the borders of fields. Smith, engl. bot. 2103. Jacq. austr. t. 64. Mirrhis aëreum, Spreng. prod. 29. and in Schultes, syst. 6. p. 511. Smith, engl. fl. 1. p. 52. exclusive of the synonyms of Wild. Scändix aëreum, Roth, germ. 1. p. 123.—Loh. icon. t. 754. Ger. emac. 1029.—Moris, oxon. hist. 9. p. 391. sect. 9. t. 10. f. 2.—Rupp, gen. ed. Hall. 282. t. 5. Joists of stem more densely hairy than the other parts, and a little swollen, crowned by the narrow annular base of each petiole. Flowers cream coloured, slightly irregular, the barren ones numerous, with only glbose rudiments of styles. Stylodia somewhat depressed, and considerably wrinkled.


10 C. maculatum (Willd. enum. suppl. 15.) stems smoothish, angular, spotted; leaves supra-decomposed, pilose; leaflets lanceolate, deeply serrated, attenuated at the apex; fruit mutic, coloured, 6 times longer than broad. Q. H. Native of the south of Europe, but the particular places are not known. It differs from *C. aëreum*, to which it has been joined by Sprengel, in the stem being spotted and smooth, and in the fruit being twice the length.


11 C. millifolium (D. C. prod. 4. p. 226.) stem and petioles hispid from pili; leaves many-parted; leaflets linear-lil-
iform, glabrous, distant; involucre of one leaf; leaves of invo-
Involucels leaflets petals styles lobes petals C. Native PI. leaves segments H. to leaves segments H. leaves foot. leaflets leaflets Native leaves. many, numerous, 364. as leaflets above, mate smooth. veins ciliated in involucels, as leaflets of 1 or 2 leaves; involucels usually of 5 leaves, which are ciliated and margined with white. 2. H. Native of Iberia, at the river Ksani. Myrrhis hulims, Schultes, syst. 6. p. 519. Flowers white.


14 C. hybridae (Ten. fl. neap. prod. 66.) stem glabrous, striated, rather scabrous; leaves tripinnate; leaflets lanceolate-oblong, deeply serrated; segments acuminate above, rather hispid beneath; leaves of involucra and involucels ovate, acuminate, ciliated with long hairs; petals glabrous; styles divaricate. 2. H. Native of the kingdom of Naples, in the woods of Magella. Flowers white.


15 C. hirsutum (Lin. spec. 371.) stem fistulous, beset with deflexed hairs; leaves ternately decomposed, nearly naked; leaflets ovate-cordate, acute, pubescent; segments deep serrated; petals usually ciliated; styles stiff, diverging, straight, permanent. 2. H. Native of the temperate parts of Europe, as in Switzerland, Germany, Austria, Carniola, in mountain groves. Jaec. fl. austr. t. 148. Scändix hirsuts, Scop. carn. no. 359. Myrrhis hirsuta, Spreng, in Schultes, syst. 6. p. 510. — Riv. pent. iunt. t. 53. — Boc. mss. 19. 9. 19. Herb when bruised somewhat aromatic; but the seeds, according to Jaquin, have scarcely any flavour. Seopoli says, they stain the fingers when rubbed with a brownish red. Flowers numerous, white, the external ones fertile.


Species not sufficiently known.

20 C. Arborascens (Lin. spec. 1. p. 371.) stem frutescens; leaves supra-decomposed, smooth; involucels present only; flowers all fertile. 2b. H. Native of Virginia. This species is very doubtful.

Arborescent Cicely. Shrub.

21 C. Capepense (Thunb. prod. 51. fl. cap. 2. p. 204.) stem terete, glabrous; leaves trinerved, rather hairy; leaflets rather remote, linear-lanceolate, somewhat trifid, cuspitate; involucels glabrous; fruit obversely pyramidal, a little beaked, acutely 5-ribbed; styles permanent, reflexed.—Native of the Cape of Good Hope. Myrrhis Capeensis, Spreng. umb. spec. p. 152. Schultes, syst. 6. p. 513.


22 C. ? Aristatum (Thunb. fl. jap. 119.) stem terete, gla-
brous; leaves ternately decomposed, rather hispid on both surfaces; leaflets ovate, acuminate, pinnatifidly cut; fruit rather trigose; styles permanent, divaricate.—Native of Japan. Myrhris aristata, Spreng. umb. spec. 138. Schultes, syst. 6. p. 512. Said to be allied to *Uropsorum dalcce*, and probably a species of that genus.

*Annew Cicely.* Pl. 2 to 3 feet.

23 C. minima (Vand. in Roem. script. p. 56.) stems numerous, hairy; radical leaves flat on the ground, biternate, hairy; leaflets somewhat 3-lobed, cut; involucre wanting; involucres usually of about 7 leaves.—On the mountains about Milan. Vittm. suppl. p. 360. Schultes, syst. 6. p. 524. Moretti suspects this to be not alig with *C. hirsutum*.

*Least Cicely.* Pl. 3/4 foot.

24 C. tenifolium (Poir. suppl. p. 342. but not of Stev.) plant glabrous; leaves decomposed; leaflets finely cut, acute; fruit nearly glabrous, prominently ribbed.—Native of the kingdom of Morocco. Myrhris tenifolia, Schultes, syst. 6. p. 520.

*Fine-leaved Cicely.* Pl. 1 to 2 feet?

* Cult. All the species are of the most easy culture, and will grow in any soil.


*Lin. syst.* Pentandria, Digynia. Margin of calyx obsolete. Petals ovate, with an entire subinvolucre point, pilose on the outside. Fruit somewhat compressed from the sides, ovate-oblong, crowned by the short diverging styles. Mericarps with 5 obtuse prominent ribs, 3 dorsal, and 2 marginating; vitre one in each furrow, which are broad, flat, and striated. CommisurBuffused in the middle. Carophoroph Bipartite. Seed ternately convex, somewhat convolute at the commissure.—Puberulous or hairy tufted herbs, not above 2 or 4 inches high. Leaves tri-ternately multifid; segments lanceolate-linear, acute. Scapes erect, pubescent. Umbels simple, containing about 20 flowers, surrounded by involucre composed of about 20 leaves each, which are oblong-lanceolate. Flowers white, some male, and others female.—This genus, from the seed and fruit, is allied to *Scandix*; but differs from *Chironphylum* in the umbels being simple, in the ribs of the mericarps being distant, and in the furrows being broad.

1 C. Andicolae (Lag. in litt. D. C. coll. mem. 5. t. 2. f. j. 1–3.) the plant is either wholly glabrous or puberulous; pedicels smoothish, a little longer than the involucre. *2 F.* Native of South America, in grassy plains at Antisana, at the height of 6000 to 7000 feet. Myrhris Andicola, H. B. et Kunth, nov. gen. amer. 5. p. 13. t. 419. Plant dwarf, tufted, deep green, but becoming blackish on drying. Umbels 10–12-flowered. Scapes hardly twice the length of the leaves. Kunth’s specimen is less than that of Domesey’s, and more glabrous; but the hairs of the scapes in both are deflexed. Pedicels glabrous.

*Andes Caldasia.* Pl. 2 to 5 inches.

2 C. erioida (D. C. 1. c. f. j. 4–5.) the whole plant is clothed with hairy pubescence; pedicels tormentose or hairy, much longer than the involucre. *2 F.* Native of New Holland, where it was collected by D’Urville. Scapes 5 times longer than the leaves. Leaves of involucre ovato-oblong. Fruit quite glabrous, seated on very hairy pedicels.

*Woolly-pedicelled Caldasia.* Pl. 2 to 3 inches.

† Species not sufficiently known.

3 C. chirophyllum (Lag. am. nat. 2. p. 98, and in litt. ined.) stems covered with retrograde hairs; segments of involucre entire, or cut, about equal in length to the flowering umbel. *2 F.* Native of Peru. *Var. a*, glabrescens (D. C. prod. 4. p. 229.) leaves puberulous, especially above, as well as the outside of the involucre; petals almost glabrous; peduncles dichotomous, twin. *2 F.* Native of Peru, at the town of Chinchin, in the province of Chancay, where it was collected by Ruiz et Pav.

*Var. b., hirsuta* (D. C. 1. c.) leaves pubescently hairy on both surfaces, as well as the outside of the involucres and petals; forks of umbels 3–4-rayed.

*Charvet-like Caldasia.* Pl. 2 to 3 inches.

4 C. lasiopeetala (Lag. in litt. ex D. C. prod. 4. p. 229.) stems and leaves rather tomentose, greyish; segments of involucres cut and pinnatifid, longer than the umbels; petals pubescent on the outside. *2 F.* Native on the Andes, in the tract called Cordillera del Peru.

*Hairy-pedalled Caldasia.* Pl. 2 to 3 inches.

* Cult. See *Fragosa*, p. 259. for culture and propagation.

CXL. SPALLEROCARPUS (σφαλλος, sphaalo, to deceive, and κφρος, karpos, fruit; from the fruit being liable to be mistaken for cumin seed). Bess. in litt. 1828. D. C. coll. mem. 5. p. 64. t. 2. f. N. prod. 4. p. 230.


* Cult. The seeds of this plant may only be required to be sown in the open border.

CXL. MOLOPOSpermum (from μωλυψ, molops, a stripe, and σπέρμα, sperma, a seed; the fruit is yellowish, and the vitue chestnut coloured, giving the fruit the appearance of being striped). Koch, umb. p. 108. diss. ined. in litt. 1828. D. C. prod. 4. p. 230.—Ligusticiucum species, Lin. and Spreng.

*Lin. syst.* Pentandria, Digynia. Calyx 5-toothed, foliaceous. Petals lanceolate, entire, ending in a long ascending acumen each. Fruit contracted from the sides; mericarps with 5 branched wings, the 2 lateral ones margingating, and one-half shorter than the rest, and the 3 dorsal ones very sharp. Seed bluntly tetragonal or angular; angle of commissure opposite, engraved by a profound furrow; the canals empty between the seed and commissure of the pericarp. Vitre toothed brown, solitary in the furrows; but none in the commissure, which is very narrow. Carpophore bipartite.—A perennial glabrous herb. Leaves ternately decomposed; leaflets lanceo-
late, elongated, shining, or decurrenty pinaire-parted; segments sharply pinnatifid. Leaves of involucrum numerous, elongated, rather membranous, sometimes multifid. Involucels of many leaves. Flowers white, on short pedicels. Terminal umbels, large, fertile: lateral ones smaller, male. Fruit often deformed, having the lateral ribs almost wanting, and the vitre of the lateral furrows. Perhaps this genus comes nearer to Pleuro- 
spérmum and Hymenola na than to Velea.

póspérmum Polopónesacum, Koch. 1. c. Sésél Polópenose, Dios. lib. 3. cap. 62. is Angélica syléstris, which grows fre-
quently in the Morea, ex Smith, prod. fl. greec. 1. p. 193.

Cicuta-like Molopóspérmum. Fl. May, July. Ct. 1596. Pl. 3 to 5 feet.

Cult. This plant will grow in any soil, and is easily increased either by dividing at the root or by seed.

CXLII. VELE'A (named after Seb. Eug. Vela, who illus-
trated unombofilius plants under the auspices of Lagascas). D. C. coll. mem. v. p. 61. t. 2. f. H. prod. 4. p. 230.—Ligústici,
species of H. B. et Kunth.

LIN. SYST. Pentándria, Digýnia. Margin of calyx obliterated. Petals unknown. Stylopódon conically deformed, short. Styles erect, filiform. Fruit ovate, without a beak; mericarps somewhat compressed from the sides, having the transverse sec-
tion nearly terete; ribs 5, the 2 lateral ones marginating, and nearly filiform, the 3 dorsal ones winged; vittae usually 3 in the furrows, but sometimes only 2, probably from 2 of them being joined in one; and 4 in the commissure. Involucre more numerous. Carpophore bipartite from the base.—A branched glabrous herb. Stem succulently striated. Leaves ternately decoupled; leaflets nearly sessile, trifid, or pinnatifid, serrated, cuneate at the base. Umbels terminal, of about 20 rays. Involucra and involucres none. Fruit almost like that of Cúdnid, but differs in the involucrum being involute; of Molo- 
póspérmum, but the calyx is toothless, the commissure less contracted, and the furrows marked with many stripes; of Myrrhísa, but the vittae are more numerous, and the carpophore is bipartite to the base.

1 V. Tolúcce'ssis (D. C. prod. 4. p. 231.) Vél. H. Native of Mexico, in the mountains near Tolucuca. Ligústicum Tolu-
cénsè, H. B. et Kunth, nov. gen. amer. 5. p. 19. t. 424. Cú-
nidum Tolucénsè, Spreng. syst. 1. p. 388.

Toluca Velea, Pl. 2 feet.

Cult. This plant will require some shelter in severe winters. It will be easily increased by seed or by dividing at the root.


LIN. SYST. Pentándria, Digýnia. Margin of calyx obsolete. Petals obovate, emarginate, with an inflexed point. Fruit compressed from the sides. Seed involute, covered by a double membrane; the outer membrane acutely keeled by 5 equal sharp ribs, which are hollow inside: the inner membrane closely adnate to the seed. Vittae wanting. Carphophore cleft at the apex.—Perennial villous herbs, having a strong scent of anise. Roots fusiform. Leaves ternately decompound; leaflets pinnati-


1 M. Odo-ra'ta (Scop. l. c.) leaves rather villous beneath.

Vol. III.
Long-styled Osmorhiza. Fl. July, Aug. Clr. 1806. Pl. 1 foot. 2 O. brevistylis (D. C. prod. 4. p. 232.) styles short, conical, tapering at the base and apex, one-half shorter than the breadth of the fruit. 2. H. Native of North America, in the United States and Canada, and in woody places on the west side of the Rocky Mountains; and from the mouth of the Columbia to Observatory Inlet, in lat. 55° on the north-west coast. Hook. fl. amer. bor. 1. p. 272. t. 97. Myrrhis Clatoni, Torr. fl. un. st. 1. p. 310. exclusive of many synonyms. Urspernum hirsutum, Bigl. fl. bost. ed. 2. p. 112. Umbels usually of 3-4 rays. Leaves of involucra linear-lanceolate, deciduous. The root, according to Bigelow, has an ungrateful scent, similar to that of Aralia nudicaulis; but according to Torrey it has a sweet anise scent.

Short-styled Osmorhiza. Pl. 2 feet.

§ 2. Involucra and involucels wanting.


Bertero’s Osmorhiza. Pl. 2 feet.

Cult. See Myrrhis, p. 592. for culture and propagation.


Lin. syst. Pentandra, Digynia. Teeth of calyx 5, stiff, permanent. Petals obcordate, with an inflected point. Styles short, conical, diverging, permanent, stiff. Fruit cylindrical, without a beak; mericarps with 5 primary flatish white ribs; furrows flat, having one vitre in each; and the commissure having 2. Seed unknown.—Quite glabrous herbs, natives of the Levant. Stems branched. Leaves pinnate; leaflets multifold: lobes linear-setaceous. Umbels compound, of from 5 to 16 rays. Leaves of involucra 5-7, multifold; of the involucels linear-subulate, rarely cut. Pedicels stiff, thickening after flowering. This is a very distinct genus, but from the structure of the seed being unknown, the place which it should occupy in the order is doubtful.

G. baueri (D. C. l. c. t. 3. f. K.) leaves of involucra multifold; most of the involucels are fertile; fruit terete, crowned by the calycine teeth, which are conical and elongated.—Native of Armenia, ex herb. Tourn. about Amadan in Persia, ex herb. Oliv. et Brug. Myrrhis Armenia folius Mei seu focioili semini brevi. Tourn. herb. Herb quite glabrous, erect. Root terete, nearly simple. Stem furrowed, a foot high. Leaves nearly like those of Daucus setisfolius, having the petioles dilated at the base. Central umbel of 15-16 rays, lateral ones of 10-12.

Carrot-like Grammosciadium. Pl. 1 foot.


Cult. The species will grow in any common soil, and will be easily increased by seed.

Tribe XVI.

Smyrneae (this tribe contains plants agreeing with the genus Smyrnium in character), or Cumin, hosepermum paucijugae turgide, Koch, umb. 133. D. C. prod. 4. p. 232. Fruit turgid, usually compressed or contracted from the sides; mericarps with 5 ribs: the lateral ribs marginating, or situated in the front of the margin; the ribs sometimes nearly obliterated. Seed involute, or with a furrow inside, semilunar or compound. —Habit of plants and inflorescence variable; the genus Exco- cantha and Echinophora agree in habit with Eryngium, in consequence of having spinose leaves; Lagace agrees with Actii- nutes in the one-seeded fruit; Pleurosporum with Astrantia in the utricular fruit.

CXLVI. LAGECIA (from λαγός, lagos, a hare, and οικός, oikos, a house; the place where a hare lies; the seeds enveloped in the hairy involucrum have been likened to young leverets in a hare’s form). Lin. gen. no. 285. Gertr. fruit. 1. p. 103. t. 23. f. 3. Lag. am. nat. 2. p. 106. D. C. prod. 4. p. 233.—Cuminoides, Tourn. inst. t. 155.

Lin. syst. Pentandra, Digynia. Lobes of calyx large, pectinated. Petals obcordate, bifid, shorter than the calyx; lobes anned. Ovarium bilocular, one of the cells abortive; the fruit is therefore ovate, and crowned by the calyx, hence there is a furrow on one side indicating the place of the abortive cell. Seed marked with a furrow on one side, and therefore appearing involute.—An annual erect herb. Leaves pinnate; leaflets ovate, uniform, alternate, coarsely toothed; teeth anned. Peduncles opposite the leaves. Umbels compound, of many rays. Umbellules 1-flowered. Leaves of involucrum 8-10, pectinated, of the involucels 4, also pectinated. Flowers pedicelate, within the involucel, white. Fruit downy.

1 L. cuminoides (Lin. spec. 294.) O. H. Native of Galatia, Persia, Greece, Candia, Lyibia, Spain, &c. in corn fields and vineyards. Smith, fl. grc. t. 245. prod. 1. p. 160. Schkuhr, handb. 1. t. 45. Linn. ill. t. 142. Sabb. hort. 4. t. 55. Planch. icon. t. 135.—Mor. hist. 3. sect. 9. t. 13. umb. t. 1. f. 13. Umbels nodding before flowering, but at length becoming nearly globose. The seeds are mostly all abortive in the plants cultivated in gardens.


Cult. The seeds should be sown in autumn, soon after they are ripe; otherwise if this is deferred till spring, they commonly remain a year, and sometimes two or three years before they grow.


Lin. syst. Pentandra, Digynia. Margin of calyx 5-toothed. Petals profoundly obcordate, nearly bipartite; lobes involute on the margin at the base, and excavated on the side, undulated and reflexed above. Fruit obovate-ovate, hairy; mericarps nearly terete, bluntly 5-ribbed. Carpophore bifid at the apex. Seed marked with a furrow on the inside, therefore the albumen is probably involute.—A branched herb, native of the Levant. Stems erect, white. Leaves pinnate, having the scent of thyme when bruised; leaflets many-parted; segments trifid, acute. Umbels of 3-4 rays. Umbellules dense, many-flowered. Leaves of involucrum 3-4, trifid; lobes usually tridentate. Leaves of
involucres numerous, cuneiform, trifid. Flowers equal, hermaprodotic, white.

1 O. orientalis (D. C. prod. 4. p. 234.) O. H. Native about Bagdad, on the banks of the Euphrates, where it was detected by Olivier and Bruguier. Oliviera decumbens, Vent. Hort. cels. t. 21. Stems white, decumbent in Ventenat's figure, but stiff and erect in the spontaneous specimens. Lower and floral leaves clothed with soft velvety villi.

Eastern Oliviera. Fl. May, July. CIt. 1816. Pl. 1 foot.

Cult. The seeds of this plant only require to be sown in the open border in spring or autumn, in a warm sheltered situation.

CXLVIII. ANISOSCIA'DIUM (from anisos, anisos, unequal, and sicadion, sicadion, an umbel; in reference to the lobes of the calyx and petals being unequal in the outer and inner flowers of the umbel). D. C. Coll. mem. v. p. 63. t. 15. Propr. 4. p. 234.

Lin. syst. Pentándria, Digynia. Lobes of calyx in the outer flowers of the umbels, large, ovate, and foliaceous; in the central flowers stiff, hooked, and mucronate-formed; in the inner ones all wanting or tooth-formed. Petals very unequal, outer ones large, obcordate bifid; inner ones small. Fruit rather pubescent, oblong-cylindrical, crowned by the calyx, and 2 stiff conical erect styles. Mericarps semi-terete, one of which is usually abortive; ribs 5, very blunt; vittae one in each furrow, brown, but none in the commissure. Albumen involute.—An herb, native of the Levant. Root simple. Stems diffuse, stiff, dichotomously branched, puberulous when examined by a lens. Leaves petiolate, pinnate; leaflets deeply pinnatifid; lobules short, hardly acute. Branches opposite the leaves. Involucra of 4-5 leaves, which are unequal, oblong, acute, and at length rather spinaceous. Rays of umbel 4-5, stiff, a little longer than the involucres. Leaves of involucres 4-5, oval, spreading, permanent, unequal. Flowers white, 7-10, sessile, stiff.

1 A. orientale (D. C. l. e. t. 15.) O. H. Native of the Levant, between Bagdad and Aleppo, where it was collected by Olivier and Bruguier.

Eastern Anisosciadium. Pl. spreading.


Lin. syst. Pentándria, Digynia. Margin of calyx 5-toothed. Petals obovate, emarginate, with an inflexed point; or the outer ones are larger and bifid. Styles in the female flowers elongated (f. 65. h.), filiform, 2, rarely 3. Fruit ovate, nearly terete (f. 65. h.), enclosed in a hollow receptacle, furnished with a short emersed beak. Mericarps with 5 depressed equal undulated ribs. Vittae one in each furrow, covered by a cobbled membrane. Albumen deeply involute (f. 65. j.)—Perennial herbs. Leaves bipinnatifid; segments cut. Umbels terminal; the flowers of the ray male, and joined together at the base before flowering, having the receptacle glanding them; the female flowers solitary and central. Involucra and involucres constantly of many leaves.

Sect. I. LEUCO'PHORA (from leu'cos, leucos, white, and φερει, pherei, to bear; in reference to the white flowers of the species). D. C. prod. 4. p. 235. Flowers white. Petals obcordate, glabrous, nearly equal. Lobes of leaves pungent, terete or conical.

1 E. spinosa (Lin. spec. 314.) Plant glaucous, finely downy; leaves pinnate; leaflets subulate, trifid, stiff; leaves of involucres and involucres spinose. 2 H. Native along the Mediterranean, in the sand by the sea side. Said to have been found by Ray on the sea coast of Lancashire, and by Mr. Blackstone between Faversham and Sea Salter; between Whitstable and the Isle of Thanet, by Sandwich, and near Westchester by Gerard; but it has been since searched for without success; it was therefore nothing but the common samphire that was found in the above mentioned habitats. Cav. icon. 2. t. 127. Smith, fl. gree. t. 265. eng. bot. 2413. D. C. Coll. memb. v. t. 16.—Mor. ox. sect. 9. t. f. 1. Root fusiform, edible. Flowers white. (f. 65.)

Var. β, pubescens (Guss. prod. fl. sic. 1. p. 309.) Stem pubescent, deeply furrowed; leaves scabrous; rays of umbels pilosely pubescent. 2 H. Native of the Levant.


2 E. platy'loba (D. C. prod. 4. p. 235.) Plant smoothish or pubescent in the upper part; leaves petiolate, pinnate; leaflets 3-4-cleft; lobes lanceolate, flattish, divaricate, spinose; leaves of involucres lanceolate, spinous. 2 H. Native of Persia, about Teheran. Stems angular, flexuous. Umbels small, when young, pubescent. Flowers white.

Broad-lobed Sea-parsnip. Pl. 3/1 to 1 foot.

3 S. trichophyll'a (Smith, in Rees' cyc. vol. 12. no. 3.) leaves biternate; segments filiform, channelled, acute, unarmed. 2 H. Native of the Levant, in stony places at the foot of Mount Ararat; and of Persia, in the province of Aderbeydjan, where it was gathered by Szovits. Umbels turbidly mucrous, about the size of those of E. spinos'a, of a deep purple while young; petals white. Perhaps this plant is the same as E. orientalis piceanifolium, Vaill. herb. The plant has a strong smell of galbanum according to Szovits.


Sect. II. CHRYSOPHORA (from χρυ'sos, chrysoe, gold, and φερει, pherei, to bear; in reference to the yellow flowers). D. C. prod. 4. p. 235. Flowers yellow. Petals ovate, barbately ciliated; the outer ones of the umbel rather radiant. Lobes of leaves flat, foliaceous, toothed at the apex. According to Fischer it is probably a distinct genus.

4 E. tenufolia (Lin. spec. 344.) Plant pubescent; leaves bipinnate; leaflets pinnatifid or cut, cuneate, unarmed at the apex. 2 H. Native of Apulia, Sicily, Greece, Tauria, and about Smyrna and Constantinople, in fields; and of Persia, in the province of Erivan, in dry saltish places. Sibth. and Smith, fl. gree. 266. prod. 1. p. 175. Stev. mem. soc. mosc. 3. p. 249 and 258. D'Ur'v. enum. 29.—Moris. oxon. sect. 9. t. 1. f. 2. Pluk. am. t. 11. f. 1. The fruit is similar to the rest of the species. A much branched glaucous plant.


Cult. These plants not producing seeds in this country are increased by cuttings of the roots or stems. Place them in a warm situation and a dry soil, or else cover them in winter, to prevent the frost from destroying them.

CL. EXOACANTHA (from exo, eko, without, and ak'anta, akanta, a spine; in allusion to the leaves of the involucres being spinose, and situated on the outside of the umbellules). Labill. Fl. syr. dec. 1. p. 10. t. 2. Lag. am. nat. 2. p. 106. D. C. prod. 4. p. 295.
LIN. SYST. PENTANDRIA, DIGYNIA. Flowers polygamous, central ones fertile, the rest sterile. Calyx in the sterile flowers, with obsolete margins. Petals obcordate, indented, equal. Young fruit of the sterile flowers obovate, and striated; those of the central flowers much larger, ovate, and somewhat papillose, crowned by 15 elongated stiff bristles. Seed unknown.—An herb, native of the Levant. Leaves pinnate: leaflets of the radical leaves ovate, toothed, rather cut; of the cauline leaves lanceolate-linear, acute. Umbels terminal, compound; umbel-lules on short peduncles. Leaves of involucre 10-12, large, channelled, spinose, longer than the rays, spreading; leaves of involucels 7-11, spinose, situated on the outer side of the umbel-lules, and longer than them, very unequal, 1 of which is very long, 2-4 are middle-sized, and 2-4 are bristle-formed. Flowers white.—This very singular genus is allied to Echinophora and Arctopus from the inflorescence, but the fruit is scarcely known. Perhaps the fruit is said to be crowned by 15 bristles, because the calyx is 5-parted, and each of these parts again trifid.

I. HETEROPHYLLA (Labill. l. c.). F. Native of the Levant, at Nazareth.

Variable-leaved Exoacantha. Pl. 2 feet.

 Cult. The seed of this plant ought to be sown in a pot, and the plants when of sufficient size to be potted separately; and in the second year, about the month of May, they may be planted out into the open border, where they will flower and seed freely.

CLI. ARCTOPUS (from apcoros, arkos, a bear, and pous, pous, a foot; this singular plant is beset with spines, which have been compared to the claws of a bear). Lin. hort. clif. 495. gen. no. 1165. Lam. ill. t. 865. Gaertn. fil. carp. 3. p. 14. 182. f. 4. D. C. prod. 4. p. 236.—Aprádus, Adans, fam. 2. p. 182.

LIN. SYST. PENTANDRIA, DIGYNIA. Flowers polygamo-dieicose. Margin of calyx 3-toothed. Petals lanceolate, with an incurved acute entire acumens. Stamens in the male flowers twice the length of the corolla, antheriferous. Stylopodium flat. Styles 2, very short, deciduous. Ovarium abortive. Stamens in the female flowers none. Styles 2, thickened at the base, and divaricate at the apex. Fruit ovate, beaked, crowned by the calyx, and con-fermumated with it from the base to the middle, having one side depressed and naked, with a furrow, not separable into two parts, but bilocular, with one of the cells abortive; the fruit is therefore 1-seeded from abortion, roundish, convex on one side, and concave with a furrow on the other.—A perennial herb, native of the Cape of Good Hope. Radical leaves pressed close to the ground in a stellate manner, with flat petioles, and roundish trifid limbs; the lobes toothed and spiny-ciliate. Male umbels compound, pedunculate, sterile, but mixed with a few female flowers; umbel-lules nearly globose; involucres usually of 5 leaves, which are joined together after flowering. Female umbels sessile, fertile, surrounded by the 4 or 5 concrete leaves of the involucrums, which are coriaceous, reticulated, and spiny toothed, girding the fruit. Petals white.

1 A. ECHINATUS (Lin. spec. ed. 2. vol. 2. p. 1513.) G. Native of the Cape of Good Hope, on hills about Cape Town, &c. Thunb. fil. cap. 255. Ker, bot. reg. t. 705.—Burman. afr. 1. t. 1. —Pluk. mant. t. 271. f. 5. The roots are used with success at the Cape in cases of siphils; but upon trial here some years since they were found to be less efficient than sarsaparilla.

Rough Arctopus. Fl. May, June. CIt. 1774. Pl. 1 foot.

 Cult. This plant should be grown in a mixture of peat, sand, and loam; and it may either be increased by dividing the plant or by seed.

CLI. CACHRYS (one of the names given by the Romans to the Rosemary. According to Morison, the name was derived from καθρίς, καθαίρειν, to burn, on account of the carminative qualities of the plants). Tourn. inst. t. 172. Lin. gen. no. 394. D. C. coll. mem. v. p. 65. prod. 4. p. 236.—Cachrys and Hippomátrárum, Lin. hort. herol. 1. p. 271. Koch, umb. 156. f. 36, 37.—Cachrys species, Spreng.

LIN. SYST. PENTANDRIA, DIGYNIA. Margin of calyx 5-toothed, or rarely obsolete. Petals ovate, entire, involute or inflexed at the apex. Stylopodium depressed, short, hardly distinct in the mature fruit. Fruit turritg, the transverse section nearly terete, or somewhat didymous; mericarps with 5 thick ribs, variable in the different sections. Commisure nearly equal to the breadth of the mericarps. Seed constituting a free nucleus, covered with copious vitre, deeply involute. Cotyledons of embryo diverging.—Perennial herbs. Leaves decussate. Umbels numerous. Involucra and involucres of many leaves. Flowers yellow.

SECT. I. EUCACHRYS (from eu, well, and cachrys; this section contains what are supposed to be the true species of the genus). D. C. prod. 4. p. 236. Cachrys, Koch. umb. 1. c. Margin of calyx obsolete. Ribs of fruit broad, thick, obtuse, sometimes so very broad at the base as hardly to be distinct. Prickles, bristles, or tubercles none.

1 C. MACROCARPA (Lam. crass. 1. (1783) 256.) plant glabrous; leaves decompound; leaflets multifid, linear-setaceous, divaricate; leaves of involucral and involucres few, entire; fruit globose, with very blunt, hardly distinct, smooth ribs.


2 C. MACROCARPA (Ledebe. fl. ross. alt. ill. t. 313. fl. alt. 1. p. 365.) radical leaves ternate: leaflets bipinnate or tripinnate: pinnula ternate or palmate: segments entire or 3-parted: lobes linear or oblong; involucral and involucres of many leaves; fruit oval; mericarps glabrous, 11-angled.

2. H. Native of Siberia, on hills in the Kirghisian steppe, at Uskamengogors, and between Bucktorninsk and Lake Noor-Saisen. Root rather woody, supini. Stems many from the same root, striated furrowed, pubescent, branched at top. Leaves a foot long and more than a foot broad. Umbels of 5-10 rays, but usually of 8. Leaves of involucral ovate or lanceolate, short membranous; of the involucres of unequal sizes. Flowers yellow, all hermaphro- dite in the primordial umbels; but in the lateral ones they are polygamous, the outer ones fertile, and the inner ones for the most part sterile. Calyx very minute. Petals yellow, oblong, connate, reflexed, hardly keeled on the inside. Stylopodium pulvinulate. Fruit large, compressed from the sides; mericarps with 5 thick keeled ribs. Carphophore bipartite, free.

Large-fruitd Cachrys. Pl. 1 to 2 feet.

3 C. ODONTÁLOCA (Pall. itin. 3. p. 720. t. g. f. 1, 2, 3. ed. gern. 3. append. no. 75. t. 9. ed. gall. in 5to. append. no. 309. t. 78. f. 1.) leaves decompound, clothed with hoary pubescence; leaflets linear, short, rather trifid; stem naked; leaves of involucral and involucres few, undivided; fruit oblong, having the mericarps somewhat compressed from the back, and hardly furrowed.

2. H. Native of Siberia, Tauria, and Caucasus, in very arid muddy places. Biebr. fl. turc. 1. p. 217. suppl. 216. Hoffm, umb. 1. p. 176. t. 3. f. 2. and f. 4. d. e. f. Cachrys calceolus, Pall. itin. 3. p. 663. 3. Cachrys unornamentatum, Hoffm. 1-leaved, ex vet.; few-leaved, ex Pall. Fruit oblong, smooth, and ribless on the outside, as in C. levisiata, but cylindrical, not
nearly globose. The Cossacks of the Jail chew the seeds for pain in the teeth, and obtain relief by the copious salivation which follows their use.

Tooth-ache Cachrys. Pl. 1 foot.

4 C. Peucedanoides (Desf. fl. alt. 1. p. 250.) leaves decomposed; leaflets filiform, stiffish, rather pubescent; leaves of involucra pinnatifid; of the involucres undivided; fruit oval, with smooth obsolete ribs. 4. H. Native of Algiers, in corn fields. This species differs from C. levi-gaûta in the leaves of the involucra being multifid, and in the leaves being pubescent.

Peucedanum-like Cachrys. Pl. 1 foot.

5 C. VAGINATA (Led. fl. ross. alt. ill. t. 9. fl. alt. 1. p. 366.) radical leaves bipinnate; leaflets pinnate-parted: segments oblong-linear, acute; lower leaflets and segments approximating the rachis; sheaths of cauleine leaves, ventricose; involucrum almost wanting; involucres of many leaves; fruit didymous; mericarps nearly globose. 4. H. Native of Siberia, on the mountains of Dolenkara, in the Kirghisian steppe. Stems rather flexuous, unequally stripped. Umbels of 10-20, unequal, spreading rays. Leaves of involucres linear-lanceolate, with membranous margins. Margin of calyx obsolete denticulated. Petals whitish, nearly orbicular, emarginate, with an flexed acumcn, keeled inside.

Sheathed-petioled Cachrys. Pl. 1½ foot.

6 C. ALPINA (Bieb. fl. tur. 1. p. 217. suppl. 216.) plant glabrous; leaves decomposed; leaflets linear, elongated; leaves of involucra and involucres very short, undivided; fruit oval, having the mericarps a little furrowed and striate, the strie crenulated. 4. H. Native of Tauria, on the tops of mountains. Hoffm. umb. 1. p. 176. C. Libanotis, Pall. ind. tur. Allied to C. Libanotis and C. levi-gaûta, but differs in the fruit not being perfectly smooth in C. levi-gaûta, nor deeply furrowed as in C. Libanotis. Perhaps this and the two preceding plants belong to the following section.


Sect. II. EGOMÀ RATHRUM (from aîa aîgos, a goat, and μαραθόν, marathron, fennel; goats' fennel). D. C. Prod. 4. p. 297. - Hippomârathrum, Link, 1. c. and Koch, diss. but not of Riv. - Hippomârathrum, Koch, in litt. Margin of calyx 3-toothed. Ribs of fruit very thick, obtuse, almost filling the furrows, more or less tubercular, papillos, wrinkled, or tomentose, rarely smooth.

7 C. LIBANOTIS (Link spec. p. 335.) plant glabrous; leaves decomposed; leaflets trifid, linear, rather pungent: superior ones opposite: upper ones trifid; leaves of involucra and involucres numerous, undivided; fruit ovate; mericarps very bluntly 5-ribbed. 4. H. Native of Mauritania, Sicily, but not in France. Schkuhr, handb. t. 65. good. Hippomârathrum Libanotis, Koch, in litt. Hippom. Siculam, Bocc. sic. t. 18. - Mor. ox. sect. 9. t. 1. f. 6. umb. t. 3. lower figure. C. vêrro, Lob. icon. t. 783. f. 2. C. Sicula γ, Guss. prod. 1. p. 359. and perhaps C. phaesesphêma, Ten. prod. xix. syn. 120. is also referable to this plant.


8 C. PTEROCHLENA (D. C. Prod. 4. p. 237.) plant glabrous; leaves decomposed: leaflets trifid, keeled, stiff, divericate, with the margins and keel scabrous; central umbels furnished with divided leaves of involucra, and the lateral ones with undivided leaves of involucra; leaves of involucres all undivided; fruit nearly globose; mericarps with 5 thick blunt ribs, which are granularly mucrinated on every side, having the furrows between the ribs deep and very narrow. 4. H. Native of Barbary, Italy, and Greece, ex Vâhl. Salzen; of Sicily, Spain, and the island of Cyprus, ex Sibthorp. C. Sicula, Lin. spec. p. 335. exclusive of Bocc. syn. Desf. fl. atl. 1. p. 240. Sibth. et Smith, fl. grac. t. 278. Hippomârathrum Siculam, Link. enum. 1. p. 271. Koch, l. c. Flowers yellow, as in the rest of the species.


9 C. caîsà (Pers. ench. 1. p. 311.) plant glabrous, or nearly so; leaves multifid, trichotomous: ultimate segments short, nearly conical; leaves of involucra and involucres linear, very short; fruit nearly globose, granular from papillae; ribs of fruit thick, almost closing the furrows. 4. H. Native of Palestine and of Eastern Caucasus. C. crispa, Spreng. in Schultes, syst. 6. p. 443. Hippomârathrum crispum, Koch, umb. 136. C. microcârpa, Stev. in litt. 1819. but not of Bieb. C. nudicâtulis, Godet, in litt. 1829. Perhaps the Caucasian plant and the Palestine one are distinct. Flowers yellow.


10 C. ASPIELLÔLIA; leaves scabrous; petioles 6 times divided, furrowed; leaflets tripartite: segments stiff, subulate, trigonal, or somewhat pentagonal, channelled above; involucra and involucres of 5 short lanceolate leaves; mericarps granular, with rather prominent ribs, and distinct furrows. 4. H. Native of Caucasus, by the sea, in the province of Baku, near Kaljari. Hippomârathrum aspillerium, Ledeb. in litt. Meyer, verz. pl. p. 131. Echinophora? Caspin, D. C. Prod. 4. p. 235. Segments of leaves short, hardly 2 lines long, thick, and stiff, by which it is easily distinguished from C. crispa.

Ample-leaved Goat's-fennel. Fl. 2 to 3 feet.

11 C. LONGILÔBA (D. C. Prod. 4. p. 237.) plant smoothish; leaves multifid, trichotomous; leaflets linear, stiffish, elongated; leaves of involucra and involucres linear, short; fruit nearly globose, granular from papillae: with thick ribs: which almost close the furrows. 4. H. Native of Persia, among rocks on the mountains about Seidkhodzi, where it was collected by Szowits. Flowers and fruit like the Caucasian variety of C. crispa, but the ultimate lobes of the leaves are very slender, about 2 inches long, not 2 lines as in that plant.


12 C. INVLVUCRA'TA (Pall. in Willd. herb. ex Schultes, syst. 6. p. 447.) plant glabrous; leaves ternately tripartite: leaflets cuneiform, jagged, acute; leaves of involucra and involucres lanceolate, membranous; fruit spongy, tubercular from papillae all over. 4. H. Native of Persia. This species is hardly known, but from the character given it is nearly allied to the preceding species. Stem branched at the base. Leaves three times tripartite.

Involucrated Goat's-fennel. Pl. 2 feet.

13 C. ERİNHSTHA (D. C. Prod. 4. p. 238.) leaves multifid, and are, as well as the stems, quite glabrous; lobes or leaflets trichotomous: segments linear-subulate, stiffish; rays of umbel puberulous; umbellules crowded with flowers; calyx and fruit tomentose. 4. H. Native of Persia, in gravelly places at Badalan. This is a very distinct species, from the fruit being nearly an inch long, and tomentose, with thick obtuse ribs, and very narrow furrows.


14 C. ACA'ULIS (D. C. Prod. 4. p. 238.) radical leaves bipinnate; petioles and scapes clothed with short white hairs; leaflets multifid, smoothish: lobes linear, soft, short; rays of umbel 4-5, puberulous, sometimes proliferous; leaves of involucra and involucres linear, with membranous margins; umbellules crowded with flowers; calyces glabrous. 4. H. Native of Persia, on arid hills at the Lake Ormiah, in the province of Aderbeidjan, where it was collected by Szowits. Herb small, with a fibrous neck. This is a very distinct species, allied to the preceding, but the fruit is unknown.

Stemless Goat's-fennel. Pl. ½ foot.
UMBELLIFIERÆ. CLII. CACHrys. CLIII. PRangos.

15 C. HUMILIS (Schousb. maroc. p. 118.) plant glabrous; leaves supra-decompound, fleshy; leaflets linear, trifid, mucronate; leaves of involucre and involucre's numerous, lanceolate, undivided; fruit furrowed, smoothish. 2. H. Native of Barbary, near Cape Spartel, mixed with Crithmum maritimum. Perhaps belonging to a different section. "Humble Goat's-fennel. Pl. ½ foot.


17 C. PUNGENS (Jan. pl. excis. Guss. prod. 1. append. p. 7.) plant glabrous; leaves decomposed; segments or leaflets filiform, linear, acute, somewhat pungent, elongated; leaves of involucre and involucre's linear; fruit ovate, with distant somewhat winged crested ribs, and broad concave furrows. 2. H. Native of Calabria and Sicily, in the sand on the sea shore. C. Sicula, longifolia, Guss. prod. fl. sic. 1. p. 360. Segments of the leaves elongated, 1-3 inches long.

Var. b. echinocephala (D. C. prod. 4. p. 283.) leaves decomposed; leaflets trifid, lanceolate-linear, acute, rather scabrous from short scattered down, especially on the margins; leaves of involucre and involucre's lanceolate-linear, acuminate, entire, of the involucre deflexed, of the involucre's equal in length to the umbellules; fruit obscurely ribbed; ribs tubercular, somewhat echinately crested. 2. H. Native of Sicily, and in fields about Naples, and probably of Greece and Spain. C. Sicula, Ten. fl. neap. prod. 19. C. Sicula var. a, Guss. prod. fl. sic. 1. p. 359. There is sometimes a one branched leaf at the base of the rays of the umbel, which may be taken for an involucre. It is perfectly distinct from C. petrochoilea; the upper leaves are opposite as in it, but the segments are broader, and striated beneath by elevated nerves. Leaves of involucre broadest at the base. Pungent Goat's-fennel. Pl. 1 to 3 feet.

 Cult. The species of Cachrys are only to be increased by seeds, which should be sown in autumn. A deep light soil suits them best.


Lin. Syst. Pentandria, Digynia. Margin of calyx 5-toothed. Petals ovate, entire, involute at the apex. Stylodipodium depressed, hardly prominent in the fruit. Transverse section of fruit nearly terete; commissure broad. Mericarps compressed from the back, with 5 smooth ribs, which are thick at the base, and ending each in a vertical membranous wing on the back. Seed girdled by copious vittae. Albumen involute.—Perennial herbs, with terete stems. Leaves decomposed; leaflets or segments linear. Umbels numerous. Flowers yellow.

1 P. PABULARIA (Lindl. 1. c. Wall. pl. rar. asiat. 3. t. 212.) plant glabrous; leaves supra-decompound; segments linear; leaves of involucrum and involucrums simple; fruit corky; mericarps with 5 ribs, which are expanded into crested wings. 2. H. Native of the temperate parts of the East Indies, about Imfal and Droz. This plant is called prangos at Imfal and Droz. It is employed in the form of hay as winter fodder for sheep and goats, and frequently for neat cattle, but its seed, when eaten by horses, is said to produce inflammation in the eyes, and temporary blindness. The properties of prangos, as a food, appear to be heating, producing fatness in a space of time singularly short, and also destructive to the Fuscio hepatica, or liver flake, which in Britain, after a wet autumn, destroys some thousands of sheep by the rot, a disease which has hitherto proved incurable. The last-mentioned properties of the plant, if they be retained in Britain, would render it especially valuable to our country. But this, taken along with its highly nutritious qualities, its vast yield, its easy culture, its great duration, its capability of flourishing on lands of the most inferior quality and wholly unadapted to tillage, impart to it a general utility of probable utility, unrivalled in the history of agricultural productions. When once in possession of the ground, for which the preparation is easy, it requires no subsequent culture, save that of cutting and converting the foliage into hay. Of the duration of the plant there are several facts. Seeds having been transported westward along with those of yellow lucern above 40 years ago, and sown on the eastern frontier of Kashmir, where they vegetated, and of which the plants of the first growth still remain in a flourishing condition. In another instance, the seeds were transported eastward, and sown upon rocks near Molbee, where the plants flourished for about 40 years, but in consequence of a long period of drought the prangos perished along with the crops of that district in general. From various facts it is conceived not unreasonable to presume, that by the cultivation of this plant moors and wastes, hitherto uncultivated, and a source of disgrace to British agriculture, may be made to produce large quantities of winter fodder, and that the yield of the highlands, and of downs enjoying a considerable depth of soil, may be trebled. As the prangos has hitherto been of spontaneous growth alone, practices a greater addition to the acreage of probable utility of the country may be adopted at a future time; but from a view of its habits, Mr. Moorcroft ventures to suggest that the seeds should be dibbled into holes singly, at an inch deep and a foot apart. Yellow lucern, which is also a spontaneous production of the country of the prangos, is of a constitution more hardy than that of the lucern of Europe, and requires no other culture than that necessary for sowing it, and lasts in vigour for a long series of years. It is submitted that, as it naturally grows along with the prangos, it would be well to imitate this habitue. The joint yield is vastly greater than that of the richest meadow land, and is produced on a surface of the most sterile nature, in regard to other herbage.

Fodder Prangos. Pl. 2 to 3 feet.

fruit than the Asiatic ones, but they are probably hardly varities. Flowers yellow, as in the rest of the species.

**Giant-fennel-like Prangos.** Clt. 1752. Pl. 1 to 2 feet.

3 C. Cylindracea (D. C. prod. 4. p. 238) leaves supra-decompound, rather hairy; segments or leaflets linear, divaricate; leaves of involucre as involucels umbilidior, linear; fruit cylindrical, expanded into membranous, entire, subulbulated wings; mericarps 5 times longer than their diameter. \( \checkmark \). H. Native of Calabria. Cachrys cylindrica, Guss. in litt. 1829. Fruit an inch long; the section of the mericarps are not semicircular, as in *P. ferulacea*, but somewhat depressed on the back.

**Cylindrical-fruited Prangos.** Pl. 1 to 2 feet.

4 U. Uloptera (D. C. prod. 4. p. 239) leaves decumponent, glabrous, with the petioles trichotomous; segments or leaflets linear; leaves of involucre and involucels spreading; fruit ovate, with very curved membranous wings. \( \checkmark \). H. Native of Persia, on rocks at Seidhodzi, in the province of Aderbeidjan, where it was collected by Szovits. Allied to *P. ferulacea*, but evidently distinct from it in the fruit being one-half smaller; in the wings being much more curled and white, and in the umbelles being more dense.

**Curled-winged-fruited Prangos.** Pl. 1 to 2 feet.

5 Thapsioides (D. C. prod. 4. p. 340) leaves supra-decompound, glabrous; leaflets or segments subulate, stiffish, shining; leaves of involucre and involucels subjacent, undivided; fruit ovate; having the ribs expanded into thick wings. \( \checkmark \). H. Native of Mount Atlas. Thapsioides thyrsoides, Desf. fl. alt. 1. p. 252. t. 68. Thapsioides Atlanticaeum, Poir. suppl. 3. p. 304. Thapsia Laspii, Spreng. in Schultes. syst. 6. p. 613. It differs from *Thapsioides* in the petals being yellow, not white, oblong, not margined. Ribb of fruit few.

**Thapsia-formed Prangos.** Pl. 2 to 3 feet.

6 Anisopetala (D. C. prod. 4. p. 240) plant glabrous; leaves decumponent; lobes or segments linear, short; stem nearly naked; leaves of involucre and involucels lanceolate, acute, entire; mericarps of fruit compressed from the back, oblong: with the ribs expanded into wings, the 3 dorsal ribs attenuated at the base, and somewhat concrete, the 2 lateral ones marginating and broader than the rest. \( \checkmark \). H. Native of Syria, near Nazareth. It is allied to *Cachrys odontalgica*, but differs in being glabrous, and in the fruit being winged. Calyx with 5 short teeth.

**Unequal-petalled Prangos.** Pl. 2 to 3 feet.

7 E. Eucululacea (Meyer, verz. pflanz. p. 131) plant quite glabrous; leaves supra-decompound; segments setaceous; leaves of involucre and involucels lanceolate; wings of mericarps flat: furrows naked. \( \checkmark \). H. Native of Caucasus, among rocks or in stony places, on the higher mountains of Talsuch, at the elevation of 2000 or 3000 feet.

**Fennel-like Prangos.** Pl. 2 to 3 feet.

**Cult.** The species of *Prangos* are of easy culture, but grow best in a dry soil. They are only to be increased by seeds, which should be sown in the autumn.

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**Lin. syst. Pentandria, Digi'nia.** Margin of calyx oblate. Petals orbiculate, with an inflexed point. Fruit ovate, villously tomentose; mericarps with 5 thick, very blunt ribs, and narrow furrows. Seed covered over all with numerous very fine vitex, convex on the outside, and with a deep involute furrow on the inside. — Perennial herbs, hoary from villous tomentum in every part; referrible to *Hermas* or Heracleum in habit. Leaves pinnate; leaflets lobed; leaves ovate, toothed, dentate. Umbels and umbelles many-flowered, involucrata. Flowers white. This genus is easily distinguished at once from *Cachrys*, in the petals being white and obcordate.

1 M. Tomentosa (Koch, in litt. 1828. D. C. prod. 4. p. 241) leaves pinnate, with 3-5 large, broadly ovate, toothed, cut leaflets: ultimate leaflets confluent; all tomentose beneath, and nearly glabrous above; leaves of involucre and involucels numerous, elongated, linear, undivided; fruit ovate; mericarps bluntly 5-ribbed, tomentose all over. \( \checkmark \). H. Native of Barbary and Sicily. Cachrys tomentosa, Desf. atl. 1. p. 249.
UMBELLIFERÆ.  CLVI. MAGYDARIS.  CLVII. HERMAS.  CLVIII. CONIUM.


Tomentose Magydaris. Fl. June, July. Clt. 1823. Pl. 3 ft. 2 M. ambigua (D. C. prod. 4. p. 241.) leaves pinnate, with 5 oval-oblong crenulated leaflets, which are glabrous above, and scabrous on the nerves beneath, as well as on the petioles: ultimate ones distinct; leaves of involucre and involucels numerous, lanceolate-linear, undivided; fruit ovate, woolly. 2. H. Native of Mauritania, near Tangiers. Cächrys ambigua, Salzm. pl. exsic. 1825. This species is intermediate between the preceding and following; and to find the first, and to find the last in the analog of the leaves.  

Ambigous Magydaris. Pl. 3 feet. 3 M. panacina (D. C. prod. 4. p. 241.) leaves on long petioles, some of them undivided, oval-oblong, and toothed: others are pinnate, with the ultimate segments confluent, all scabrous beneath on the nerves, and on the petioles; leaves of involucre and involucels numerous, deflexed, undivided; fruit oblong, beset with spreading villi, hardly furrowed. 2. H. Native of Spain. Cächrys panacifölia, Vahl, symb. 1. p. 25. Brot. fl. lus. 1. p. 43. Athamánta panaciföia, Spreng. umb. spec. 1. p. 140.—Tüero, Gius, hist. 2. p. 93.  


Cult. See Perángos, p. 375. for culture and propagation.  


LIN. Syst. Pentândria, Digýnia. Margin of calyx 5-parted, foliaceous, permanent. Petals oval-oblong, acute, keeled, entire, equal. Fruit ovate; mericarps rather inflated, compressed from the back, 5-ribbed, the dorsal rib exerted, the two middle ones larger, and the 2 marginating ones small, and placed under the commissure; vitreous many in the furrows, which are broad. Seed elliptic, somewhat concave on the inside, and probably revolute, not adnate to the tegument.—Cape herbs, having the leaves clothed with white tomentum. Leaves undivided, hardly toothed. Umbels compound, nearly globose, of many rays. Involucels numerous, of many leaves; involucels of 3 leaves. Rays of umbellules many; outer ones bearing sterile male flowers: the inner one or three bearing hermaphrodite flowers; the pedicels of the sterile or abortive flowers setaceous and permanent after the inflorescence, forming as it were an involucre to the fertile flowers. Lateral umbels sterile, male. Flowers white or purple.  

1 H. gigantea (Lin. fili suppl. 435.) radical leaves on long petioles, oval or oblong, somewhat serrated, clothed with dense soft tomentum on both surfaces. 2. H. Native of the Cape of Good Hope. Thunb. nov. act. petrop. 14. p. 529. t. 11. fl. cap. 249. Bupleürum gigántium, Thunb. prod. 50. Leaves from the dense tomentum usually entire. The upper part of the plant and umbels glabrous. Leaves purple, ex Thunb. The wool scraped from the leaves is used for tinder at the Cape of Good Hope, as that from Artemisia is in China and Japan.  


2 H. villósa (Thunb. nov. act. petrop. 14. p. 531. fl. cap. 249.) leaves ovate-oblong, acute, somewhat cordinate at the base, stem-clasping, toothed, glabrous above, and clothed with white tomentum beneath. 2. G. Native of the Cape of Good Hope, on the Table Mountain. Burn. afr. t. 71. f. 2. Bupleürum villósum, Lin. spec. 343. Burn. fl. cap. p. 7. H. depauverata, Lam. dict. 3. p. 121. ill. t. 351. f. 1. Stem tomentose between the leaves, and glabrous above. There is also tomentum under the bracteas and involucre. Stems purple.  

Varr. β, depauvera (D. C. prod. 4. p. 242.) leaves on short petioles, velvety beneath from short rubrifulent tomentum; involucre and bracteas glabrous at the base. 2. G. Native of the Cape of Good Hope. Hermas depauverata, Lin. mant. 299. Perhaps a proper species.  


Capitale-flowered Hermas. Pl. 1 1/2 foot. 4 H. quinquedentata (Lin. fili suppl. p. 436.) leaves almost radical, petiolate, ovate, ovate or obovate, obtuse, ciliated, naked above, but clothed with white tomentum beneath; stem sub-tomentose even to the apex. 2. G. Native of the Cape of Good Hope, on the Table Mountain. Bupleürum quinquedentata, Thunb. nov. act. petrop. 14. p. 533. t. 12. fl. cap. 249. Leaves of involucre striated with 3 longitudinal nerves. Corolla white. Stem filiform. Umbels nearly globose.  


Cult. A mixture of peat, sand, and loam is the best soil for the species of Hermas, and they may be either increased by seed or cuttings.  

CLVIII. CONIUM (said by Linnaeus to be from vonæ, or vonæ, konis, or konia, dust or powder; but the application of the term is not evident). Lin. gen. no. 469. Hoffm. umb. p. 99. t. 1. f. 3. Lag. am. nat. 2. p. 103. Koch, umb. p. 155. f. 40.—Cicúta, Tourn. inst. t. 160. Gärtn. fruct. 1. t. 22. Lam. dict. 2. p. 3.  

LIN. Syst. Pentândria, Digýnia. Margin of calyx obsolete. Petals obcordate, somewhat emarginate, with a short infolded edge. Fruit ovate, compressed from the sides; mericarps with 5 prominent equal undulate-crenulated ribs: lateral ones marginating; furrows with many strize, but without vitte. Carphophore bifid at the apex. Seed with a deep narrow furrow, and as if it were complicate.—Biennial poisonous herbs, natives of Europe. Root fusiform. Stem terete, branched. Leaves compound. Involucre of 3-5 leaves; involucels diminidate. Flowers white, all fertile.  

1 C. maculatum (Lin. spec. 349.) leaves of involucels lanceolate, shorter than the umbellules, 2. H. Native throughout the whole of Europe, in cultivated ground, among rubbish, and on dung hills; also of the eastern parts of Asia, North America, and Chili, where it has been introduced; plentiful in some parts of Britain. Schkuhr, handb. t. 62. Bull. herb. t. 63.
UMBELLIFERÆ. CLVIII. CONIUM. CLIX. VICTATIA. CLX. ARRACACHA.


Cicuta maculata, Lam. fl. fr. 3. p. 104. Cicuta major, Lam. dict. 2. p. 3. Coriandrum Cicuta, Crantz, austr. 24. Coriandrum maculatum, Roth, fl. germ. 1. p. 130. Cicuta, Hall. helv. no. 766. Riv. pent. irr. 75. Blackw. t. 451. Lob. icon. 732. f. 1. Cicuta domestica, Mor. umb. 18. c. sect. 9. t. 6. f. 1. Co-rium tenuifoliim, Mill. dict. no. 2. Stem hollow, green, but often of a livid colour, marked with dark spots. Hemlock is obviously distinguished from all other umbelliferous plants by its spotted stem, by the dark and shining green colour of the bottom leaves, and particularly by their disagreeable smell when bruised. According to Linnaeus, sheep eat the leaves, and horses, cows, and goats refuse it. Ray informs us, that the thrush will feed upon the seeds even when corn is to be had. Hemlock has been stigmatised as one of the most noxious of vegetable poisons, has for many years been considered as a highly useful and powerful article of the Materia Medica, and it has been proved that though highly deleterious when imprudently used, yet in small doses it has been productive of considerable benefit in cases which have resisted the usual methods. The first physician who endeavoured to bring hemlock into repute as a medicine was Baron Stoerck, of Vienna, who announced its extraordinary effects in the most inveterate chronic disorders in 1760. The whole plant is a virulent poison, but varying very much in strength, according to circumstances. When taken in an over-dose, it produces vertigo, dimness of sight, difficulty of speech, nausea, fetid evacuations, anxiety, tremors, and paralysis of the limbs. But Dr. Stoerck found that in small doses it may be taken in great safety, and that, without at all disordering the constitution, or even producing any sensible operation, it sometimes proves a powerful remedy in many obstinate disorders. In scirrhous, the internal and external use of hemlock has been found useful, but mercury has been generally used at the same time. In open cancer it often abates the pain, and is free from the constipating effects of opium. It is likewise used in scrofulous tumours, and in other ill-conditioned ulcers. It is also recommended by some in chin-cough, and various other diseases. Its most common and best form is that of the powdered leaves, in the dose at first of 2 or 3 grains a day, which in some cases has been gradually increased to upwards of 2 ounces a day. An extract from the seeds is said to produce giddiness sooner than that from the leaves.

Hemlock should not be gathered unless its peculiar smell be strong. The leaves should be collected in the month of June, when the plant is in flower. The leaflets should be picked off, and the footstalks thrown away. The leaflets are then to be dried quickly in a hot sun, or rather on tin plates before a fire, and preserved in bags of strong brown paper, or powdered and kept in close vessels, excluded from the light; for the light soon dissipates their green colour, and with it the virtues of the medicine. The narcotic seeds are most active and uniform when perfectly ripe. When the fresh root is wound, it yields a bitter and acid juice, which Stoerck found to excite in the tongue swelling, stiffness, violent pain, and transient paralysis. Pfaff is of opinion, that the virtues of the hemlock reside in a volatile principle, which, however, he was not able to obtain separate. Dr. Paris says, that the medicinal activity of the plant resides in a resinous element, which may be obtained in an insulnat form by evaporating an ethereal tincture made with the leaves on the surface of water. It has a rich dark green colour, and tastes of hemlock in perfectiction. A dose of half a grain will produce vertigo and headache.

Var. β, striatum (Tratt. arch. 1. t. 24.) stem diffuse, much branched, very straight; umbels and umbellules proliferous.

CLX. VICTATIA (named after M. Vicat, who has wrote upon poisonous plants). D. C. prod. 4. p. 243.—Sison species, Wall.

Linn. syst. Pentantheria, Digna. Margin of calyx entire. Petals unknown. Styles short, at length diverging. Fruit ovate-oblong. Mericarps almost semi-terete, with 5 filiform ribs: and broad flat furrows containing many small vitre each: commissure narrow. Carpophore thick, rather biform at the apex. Albulmen furnished with a furrow in the commissure, convex on the outside.—A glabrous erect herb, native of Nipal. Leaves petiolate, bipinnatifid; leaflets bipinnatifid: lobes linear, acute, slender. Stems sparingly leafy at the base; the rest naked. Umbels terminal, without any involucrum, of many rays; rays unequal. umbellules of the shorter ones sterile. Involucres wanting, or very small, and of few leaves. Habit of Conium, but the character is near that of Arracacha. Fruit almost like that of the genus Pimpinella, but differs in the seed being curved.


Hemlock-leaved Vicatia. Pl. 1½ foot. Cult. This plant will grow in any soil or situation, and will be easily propagated by seed.


Linn. syst. Pentantheria, Digyna. Margin of calyx obsolete. Petals lanceolate or ovate, entire, with an inflected point, curved above the middle nerve. Stylodium conical, thick; styles diverging, at length reflexed. Fruit ovate-oblong, somewhat compressed from the sides; mericarps with 5 equal, not crenulato ribs: lateral ribs marginating: vitre many in the furrows. Albulmen nearly semi-terete, furnished with a furrow in the commissure.—Perennial South American herbs, of a salubrious quality. Roots tuberous, thick, edible. Leaves pinnate or bipinnate: leaflets deeply toothed, lower ones triplicate. Umbels opposite the leaves or terminal. Involucrum wanting or of one leaf: involucres of 3 leaves. Flowers polygamous; those of the rays hermaphrodite, and those of the disk male or imperfect. Petals white. This genus is nearly allied to Conium, but differs in the form of the petals, and in the ribs of the fruit being entire, not undulately crenulato.

1 A. esculenta (D. C. prod. 4. p. 244.) leaves pinnate; leaflets 5, broadly ovate, acuminate, deeply pinnatifid, profusely serrated: the 2 lower leaflets petiolate, subterminal; involucrum wanting; ribs of fruit obtuse. 2. F. Native of 3 C.

The first account which reached our country of this interesting and valuable plant was published in the first volume of the Annals of Botany, about the year 1805, from a communication made to the editors of that excellent work by Mr. Vargas, a native of Santa Fe de Bogota, who at that period was residing in London. The arracacha is one of the most useful vegetables in that part of South America; in some parts of the country it is called *apij*, from its resemblance to celery. The roots immediately divide into 4 or 5 branches, and each of these, if the soil be light, and the season favourable, will grow to the size of a cow’s horn. This root yields a food, which is prepared in the same manner as potatoes, is grateful to the palate, and so easy of digestion, that it constitutes the chief aliment of the sick; starch and pastry are made from its fecula; and the roots, reduced to a pulp enter into the composition of certain fermented liquors, supposed to be efficacious as tonics. In the city of Santa Fe, and indeed wherever it can be procured, the arracacha is as universally used as the potatoe is with us. The cultivation of this plant requires a deep black soil, that will easily yield to the descent of the large vertical roots. It is propagated by planting pieces of the root, in each of which is an eye or shoot; these acquire in 3 or 4 months a size sufficient for culinary purposes, though if permitted to continue 6 months in the ground, they attain to immense dimensions, without any injury to their flavour. The colour of the root is white, yellow, or purple, but all the varieties have the same quality. Like the potatoe, the arracacha does not thrive in the hotter regions of America, for in such parts the roots acquire no size, and are indifferent in flavour, and sometimes run altogether to stems. In the countries which are there called temperate, being less hot than those at the foot of the Cordilleras, this vegetable sometimes succeeds; but never so well as in the elevated region of those mountains, where the mean heat is between 58° and 60° of Fahrenheit. Here it is that these roots grow the most luxuriant, and acquire the most delicious taste. Before Vargas this plant was not mentioned by any other American writer, except by Alcedo, who notices it in a few words, at the end of his "Diccionario Geogràphico-historico de las Indias Occidentales O America." According to the late Baron de Schack, the arracacha is an essential article of food, not only to the poor, but to the rich, throughout Santa Fe and New Granada, and is everywhere cultivated as carrots are with us. It is also cultivated abundantly in the Caracas and the adjacent mountainous country. Plants of the arracacha have been introduced to this country, but have not succeeded, although every situation, temperature, and soil have been tried; they have only produced at best a few leaves, and at the end of the year or less have perished altogether. Mr. Shepherd of Liverpool alone has been so fortunate as to have a few plants flowering in his garden.

*Excedent Arracacha*. Fl. Ju. Jul. Cl. 1823. Pl. 1 to 2 ft. 2 A. moschata (D. C. Prod. 4. p. 244.) leaves bipinnate, or tripinnate; leaflets pinnatifid, lobes ovate, acutish, serrated; involucre of 1-3 jagged leaves; ribs of fruit acute. 2 H. Native of South America, in the province de los Pastos, near Teindela, where it is called by the inhabitants *Sucharachaca*. Herb smelling of musk. Conium moschatum, H. B. et Kunth, nov. gen. amer. 5 p. 14. t. 420.

*Musk Arracacha*. Fl. June, July. Clt. 1824. Pl. 2 ft. Cult. These plants are of easy culture if kept from the frost; they may be either increased by seed or dividing at the root.


2 P. Uralsís (Hoffm. l. c.) vittae one in each furrow of the fruit; ribs very acute. 2 H. Native of Siberia, on the Ural Mountains. Liguistícum Gmel. sb. 1. t. 45. This plant differs from *Pleuropósernum Austríacum* in the rays of the umbel being evidently velvety when examined by a lens; the colour of the leaves is more glaucous; the petals more obtuse at the apex, and flat.

*Ural* Pleuropósmum. Pl. 2 to 3 feet.

3 P. Kämtsháchíacu (Hoffm. l. c.) vittae 2 in the furrows of the fruit; ribs somewhat denticulated; membranes almost cohering between themselves. 2 H. Native of Kamtschatka. Petals obovate, with somewhat undulated margins, a little inflexed at the apex. A plant agreeing with this was found about Irkuts in Siberia, but differs in the leaves of the involucre being sometimes multifid, as is sometimes the case in *P. Austríacum*.

*Kamtschatka* Pleuropósmum. Pl. 2 to 3 feet.

4 P. Archangélicá (Ledd. fl. alt. 1. p. 369.) 2 H. Native of Siberia. This plant is not well known. It has the habit exactly of Archangélica officínális, and grows in the same places with it. The fruit is grey or dirty yellow.

Archangélica-like Pleuropósmum. Pl. 4 to 6 feet.

*Cult.* Any common soil will suit these plants; and they may either be increased by dividing at the root or by seed.

**CLXII. HYMENOLE'NA** (from hymen, a membrane, and chlaina, chlaina, a cloak; in reference to the ribs of the fruit...

L. Syst. Pentandria, Digynia. Margin of calyx obsolete. Petals obvate, entire, flat or attenuately inflexed at the apex. Fruit ovate or oblong; mericarps with 5 exerted nearly equal winged ribs; vittae 2 in the commissure, which is flat, and one in each furrow. Seed with a furrow in front, convex on the outside. Carpophore bipartite.—Perennial glabrous herbs, natives of the mountains of Nipaul. Leaves decomposed. Umbels terminal, of many rays. Involuca and involucels of many leaves, which are membranous, and are usually toothed or cut. This genus is allied to Melopospermum on the one hand, and Pleurospérmum on the other; it differs from the first in the commissure being flat, in the ribs being equally winged, and in there being no empty canal before the commissure, &c.; and from the last in the fruit having the membranes joined together, and from both in the obsolete margin of the calyx. Perhaps this genus should be divided into two, from the oblong or ovate fruit of the species, and from the seeds being angular or convex on the outer side; but in most of the species the fruit is not sufficiently known.

1 H. Angelicoödes (D. C. prod. 4. p. 245.) leaves ternate; leaflets tripartite: lobes oval-lanceolate, acuminate, toothed: teeth ovate, mucronate; leaves of involucra and involucels lanceolate-linear, acuminate, entire, with membranous margins. 2. H. Native of Nipaul, on the highest mountains at Kamaon and Gosaingsthan. Ligústicum angelicooides, Wall. mss. Habit, when dried, almost of Ligústicum Scóticum. Fruit oblong, 5 lines long, somewhat compressed from the sides. Seed with very prominent angles, as in Melopospermum, but the commissure is flat and bivittate. Leaves of involucels 6-8 lines long, membranous.

Angelica-like Hymenolaena. Pl. 1 to 2 feet.

2 H. Rotundata (D. C. prod. 4. p. 245.) leaves ternate, rarely trinerved; leaflets ovate-roundish, obtuse, toothed: teeth roundish, hardly mucronate; leaves of involucra 1-2, of the involucels 4-7, linear-lanceolate, acute, membranous, entire. 2. H. Native of Nipaul, on Gosaingsthan and Himalaya. Ligústicum rotundatum, Wall. mss. Petioles broadly dilated at the base, many-nerved, those of the radical leaves very long, and those of the cauline ones gradually shorter, till at length the uppermost ones are very short. Leaves sometimes tripartite.

Roundish-leaved Hymenolaena. Pl. 2 to 3 feet.

3 H. Fumila (D. C. prod. 4. p. 245.) leaves pinnate; leaflets 5, ovate, deeply pinnatifid: lobes equally toothed: teeth roundish, mucronate; stems scape-formed, nearly naked; leaves of involucra 2-3, of the involucels 4-5, lanceolate, acute, membranous, entire. 2. H. Native of Nipaul, at Gosaingsthan. Ligústicum pinnulatum, Wall. mss. Herb a foot high in when in flower. Leaves radical, or 1-2 rising from the base of the stem. Umbels of 7-8 rays. Leaves of involucra sometimes drawn out into a small cut leaf.

Dwarf Hymenolaena. Pl. 1 foot.

4 H. Dentata (D. C. l. c.) radical leaves ternate, with trifid petioles; leaflets bipinnatifid; cauline leaves bipinnate: leaflets ovate, acute, serrated; leaves of involucra 1-3, of the involucels 7-8, lanceolate, acuminate, membranous, undulated-serrulatus. 2. H. Native of Nipaul, at Kamaon and Gosaingsthan. Ligústicum dentatum, Wall. mss. Leaves membranous. Rays of umbel 5-8, angular, somewhat puberulous. Leaves of involucels exceeding the flowers.

Var. β, crassa (D. C. l. c.) cauline leaves pinnate: leaflets tripartite: lobes ovate-oblong, irregularly and deeply toothed; umbels of 15-18 rays: rays scabrous; leaves of involucra 5-6, lanceolate, serrated, of the involucels 7-8, obovate, erose-serrrated, tipped by a mucrone. 2. H. Native of Nipaul.

Toothed-leaved Hymenolaena. Pl. 1 to 2 feet.

5 H. Candollii (D. C. l. c.) leaves pinnate: leaflets petiolate, ovate, deeply pinnatifid: lobes deeply serrated at the apex; peduncules in fascicles; umbels and umbellules crowded; leaves of involucra and involucels many, obovate, obtuse, membranous, large, entire. 2. H. Native of Nipaul, on the Himalaya, at the temple of Boddinath. Ligústicum Candollii, Wall. mss. Herb hardly a foot high, agreeing with Pleurospérmum in habit. Upper leaves membranous, emulating the leaves of the involucra. Leaves of involucrum nearly an inch long.

De Candolle’s Hymenolaena. Pl. 1 foot.

6 H. Brunoni (D. C. l. c.) leaves capillaceously multifid; segments linear, acute; leaves of involucra 5-6, membranaceously dilated, multifid at the apex: of the involucels 6-8, membranous, some of which are undivided, with the middle nerve simple: and others are trifid, with the middle nerve trifurcate. 2. H. Native of the mountains of Nipaul, on the Himalaya, Kamaon, and Gosaingsthan. Ligústicum Brunonii, Wall. mss. There are varieties of this having the leaves of the involucels smaller, length of the flowers, and larger exceeding the flowers.

Brown’s Hymenolaena. Pl. 1 to 2 feet.

7 H. Govaïnana (D. C. prod. 4. p. 246.) leaves pinnate: leaflets deeply pinnatifid: lobes oblong-linear, acute; leaves of involucra 5-7, multifid, much shorter than the rays of the umbels; leaves of involucels membranous at the base and margin, multifid at the apex, and exceeding the flowers. 2. H. Native of the Snowy Mountains of Smirnora. Ligústicum Govaïnánun, Wall. mss. Leaves like those of A’pium. Rays of umbel 7-8, unequal. Stem striated.

Govaï’s Hymenolaena. Pl. 1 foot.

8 H. Benthami (D. C. l. c.) leaves pinnate: leaflets 5-7, ovate, cuneate at the base, coarsely toothed, trifid or tripartite: teeth mucronate; leaves of involucra foliaceous, oblong, deeply toothed, much shorter than the rays of the umbels; involucels about the length of the flowers. 2. H. Native of Nipaul, at Gosaingsthan. Ligústicum Benthami, Wall. mss. Fruit ovate; mericarps somewhat compressed from the back, with broad furrows and narrow winged ribs. Seed convex on the back.

Bentham’s Hymenolaena. Pl. 1 foot.

9 H. obtusísculum (D. C. l. c.) leaves pinnate: leaflets 5-7, ovate, deeply pinnatifid, bluntly toothed: leaves of involucra foliaceous, dilated at the base, and multifid at the apex, a little shorter than the rays of the umbels; leaves of involucels oblong foliaceous, deeply toothed. 2. H. Native of Nipaul, at Gosaingsthan. Ligústicum obtusísculum, Wall. mss. Fruit ovate; mericarps semi-ovate, with broad furrows, and undulate-toothed narrow-winged ribs. Carpophore thick, bipartite. Seed semi-ovate, obtuse on the back.

Bluntish-seeded Hymenolaena. Pl. 1 foot.

Cult. See Pleurospérmum, p. 578. for culture and propagation.

C. Syst. Pentandria, Digynia. Margin of calyx 5-toothed. Petals obvate, somewhat emarginate, with an inflexed point. Fruit contracted from the sides, didymous; mericarps reniformy globose, with 5 filiform, slender, equal ribs: the lateral ribs placed in front of the margins; vitre broad, one in each furrow. Seed involutely semi-lunar.—Perennial herbs. Lower leaves trinervately cut; upper ones often reduced to the scale-formed

3 2

UMBELLIFERÆ. CLXII. HYMENOLENA. CLXIII. PHYSSOSPERMUM. 379
Leaves of involucra and involucres many. Flowers white. The stem does not adhere to the fruit in the young state, but when ripe it does, whence the name is congruous when the fruit is mature.

1 P. aquilegifolium (Koch, l. c.) lower leaves trるために, glabrous; leaflets cuneate-lanceolate, deeply toothed: uppermost ones reduced to the sheaths, each sheath bearing 3 linear, nearly entire leaflets. H. Native of Cornwall, in thickets, among bushes, and in hedges; in great plenty in the neighbourhood of Bodmin. Ligusticum Cornubianum, Lag. spec. p. 329. Smith, engl. bot. t. 683. Smith, icon. pict. t. 11. Phosphospermum commutatum, Spreng. umb. spec. t. 4. fl. 8. exclusive of many synonyms. Danα aquilegifolia, Lag. am. nat. 2. p. 97. ? ex synonyme of Spreng. Cornwall Saxifrage, Petiv. herb. brit. t. 36. f. 9. Castle are so fond of the plant that they eat it down to the ground. The root contains a yellow resinous juice.


4 P. Angelicelgefolium (Guss. ind. sem. 1825. prod. fl. sicc. 1. p. 356.) stem furrowed, nearly naked; radical leaves binate, with the ramifications not divaricate: leaflets of the lower leaves ovate, of the superior ones oval-oblong, 2-3-parted, dentately serrated, glabrous above, and pubescent beneath. H. Native of Sicily, on shady gravelly parts of mountains. Leaves like those of Angelica sylvestris.

Angelica-leaved Phosphospermum. Pl. 2 to 3 ft.

Cult. See Peleospermum, p. 378. for culture and propagation.

CLXIV. SMYRNIUM (from Smyrna, Smyrna, a synonyme of Ἀργος, the odour of myrrh is common to many umbellular plants, among others the Myrrha odorata, for which reason it is so named). Lag. am. nat. 2. p. 101. Koch, umb. p. 133. f. 38, 39. D. C. prod. 4. p. 247.—Smyrnium species, Lin. and Spreng.

Lan. Syst. Pentántia, Digínia. Margin of calyx obsolete. Petals lanceolate or elliptic, entire, acuminate, with an inflexed point. Fruit contracted from the seed, the fleshy from the mericarps being reniformly globose; mericarps with 3 dorsal, rather prominent sharp ribs, and 2 lateral, nearly obliterated marginal ones; vitæ many in the furrows. Carophore bipartite. Seed involute.—Erect, biennial, glabrous herbs. Roots fleshy. Leaves variable. Umbels terminal. Involutione variable. Flowers yellow or greenish-yellow, usually polygamous.

1 S. olsus-tratum (Lin. spec. 376.) stem terete; calule leaves ternate; leaffets ovate, serrated; involucres very short. H. Native of Middle and South Europe, in humid places; as in France, Spain, Italy, Belgium, and Britain. It is rather a maritime plant, and is found near our coast in various places, as about Scarborough Castle, and about Dover; it is common in Anglesea and in all the western counties, and in the flat parts of Gloucestershire, as also in many places of Dorsetshire. It occurs also about many inland towns, as Notting-ham, York, Bury, Newmarket, and about Mackereell's Tower, Norwich. In several places of Cambriageshire, Worcestershire, Kent, and Middlesex. In Scotland upon the coast of Dunglass, on the edge of Berwickshire. Lam. ill. 204. Smith, engl. bot. t. 290. S. Mathioli, Tourn. inst. 316.—Lob. icon. 708. f. 2. Moris. sect. 9. t. 4. The whole herb is of a pale bright green, in flavour something like celyer. Lower leaves binate: upper ones ternate. Petioles inflated. Umbels globose. Flowers greenish white. The plant was formerly eaten in various parts of Europe, either as a salad or pot herb, whence, and from its blacness, the name olsustrum, from olsus and ater. Ray says it was called Alexanders, because in Italy and Germany it had long been denominated herba alexandrina; having been supposed to have been brought from Alexandria. It flowers in May, and by the middle of July the stalks are dried up, but remain laden with large black seeds.

Olsustrum or Common Alexanders. Fl. May. Britain. Pl. 2 to 4 feet.

2 S. apiſfolium (Willd. spec. 1. p. 1468.) stem terete; calule leaves cuneiform, obtuse, trifid, toothed: involucra and involucres wanting. H. Native of Candia. Schultes, syst. 6. p. 440. S. Créticum paludifolium, Tourn. cor. 23. S. Créticum, Mill. dict. no. 4. Perhaps only a variety of the preceding. Stem angular, glabrous. The lower leaves of this plant are much smaller than those of the preceding, and more like those of smallage; the umbels are also smaller, and the seeds are less.

Smallege-leaved Alexanders. Fl. May. Citt. 1731. Pl. 2 to 3 ft.

3 S. rotundifolium (Mill. dict. no. 2.) stem terete; calilne leaves stem-clasping, orbicular, quite entire, or hardly toothed. H. Native of the islands in the Mediterranean; as in Corse, Sicily, Cos, &c. on the mountains. Moretti, pla. ital. dec. 2. p. 9. S. Dodonei, Spreng. umb. spec. 24. exclusive of many of the synonyms. S. Créticum, Math. ed. Valgr. 1570. p. 515. f. 2. S. Mathioli, Presl. del. plag. p. 127. but not of Tourn. S. ranorum, D'Urville, enum. no. 278. S. perfoliatum a, Lam. dict. 3. p. 266. S. Ægypticum, Lin. amen. 4. p. 270. probably belongs to this species, which has 2 single coroaate, quite entire leaves on the floral branches, as in it. Root tuberously fusiform, black on the outside, with a sweet taste. Leaves pale green; lower ones ternately decoumpound: leaflets ovate, deeply serrated, for the most part atteneuated at the base. Lower calule leaf 3-lobed.


Perfoliate-leaved Alexanders. Fl. May, June. Clt. 14 foot. 5 S. Eoroedoiides (H. B. et Kunth, nov. gen. amer. 5, p. 16). leaves somewhat binate; leaves oblong, sharply serrated; umbels of 10-12 rays; involucre and involucels of one seed. 6 H. Native of Mexico, near Moran, at the height of about 4000 feet; and on the Cordilleras de Quahilapa. Sisox agogoeooidoe, Spreng. syst. 1. p. 886. Flowers yellow. Fruit didymous, hardly compressed; vittae small; ribs filiform; funicles broad, recurved; albumen involute.

Gout-weed-like Alexanders. Pl. 1 foot.

† A doubtful species.

6 S.? Lateral (Thunb. fl. cap. 2. p. 206). leaves pinnate and ternate; leaflets obovate, deeply lobed, mucronately toothed; umbels lateral, nearly sessile; involucels few-leaved. 6 G. Native of the Cape of Good Hope. Petals white, inflexed. Fruit globose, pubescent. This plant evidently does not belong to the present genus, but to what genus it belongs is unknown.

Lateral-umbelled Alexanders. Pl. 1 foot.

Cult. The species will grow in any kind of soil in which the seeds may be sown.

CLXV. EULOPHUS (from ev, ev, well, and lophe, lophs, a crest; in reference to the stripes as well as the ribs of the fruit being rather prominent). Nutt. in litt. 1825. D. C. coll. mem. v. p. 69. t. 24. f. M. prod. 4. p. 248.

Lyn. syst. Pentandra, Digynia. Margin of calyx 5-toothed, at last falling off after flowering. Petals unknown. Fruit somewhat contracted from the sides, rather didymous; mericarps ovate, with 5 hardly prominent ribs: the funnels between the ribs furnished with 3 convex stripes each, which are more prominent than the ribs, they are hollow inside, and replete with oil, from sustaining oleiferous canals; commissure bearing 4 similar stripes or vittae. Seed semilunar, filling the mericarp; carpophore bipartite.—Glabrous herbs. Leaves multifid; lobes linear, elongated. Terminal umbels large, of 10 rays, fertile; the lateral ones opposite, and sterile. Involucre and involucels of many linear acute leaves. Flowers many, abortive. This genus is very nearly allied to Physospermum, but differs in the fruit being covered with many vittae, as in Sugiunia.

1 E. Americana (Nutt. in litt.).—Native of North America, in the Arkansa territory. Root composed of fascicles of oblong tubers. Stem terete, fistular.

American Euophus. Pl.

Cult. See Sugiunia above for culture and propagation.


Lyn. syst. Pentandra, Digynia. Margin of calyx entire. Petals obcordate, with a short, inflexed, obtuse point. Stylodium thick, conically cylindrical, parallel; styles filiform, bent upwards. Fruit somewhat didymous; mericarps ovate, contracted at the raphe, scarcely compressed from the sides, with 5 filiform ribs, and flattish-convex funnels, each funnel forming 2-3 vittae. Commisurate flasht, containing 4-6 vittae. Albumen furnished with a funicle inside.—Herb glabrous. Radical leaves on long petioles, which are hardly dilated at the base, ternate; leaflets pinnate: segments pinnatifid: lobes diverging, lanceolate, acute. Stem branched, rather dichotomous, terete. Upper leaves reduced to quite entire, or undivided, elongated ligula. Umbels terminal, without involuca, of 9-10 rays; umbellules 12-15-rayed; involucels of a few small, linear leaves. Flowers white.—This genus is allied to Eulophus and Physospermum from habit and character, but differs from both in the calyx being toothless, in the form of the stylodium, and in the want of involucra. From habit and the somewhat didymous fruit it comes also very near Astoma.


Cult. Sow the seeds in autumn, in the open ground; they will grow in any common soil.

SUBORDER III. COELOSPERMAE (from κοιλος, koilos, hollow, and σπέρμα, sperma, a seed; from the seeds being involucrally curved from the base to the apex, and therefore forming a hollow on the inner side). D. C. prod. 4. p. 249. Albumen involucrally curved from the base to the apex, excavated in front.

Tribe XVII.

CORIANDREÆ (this tribe contains plants agreeing with Coriandrum in important characters). Koch, umb. p. 82. D. C. prod. 4. p. 249. Fruit globose or didymous, with 2 subglobose mericarps. Mericarps with 5 primary, depressed, or flexuous ribs; the lateral ribs placed before the accessory margin; the 4 secondary ribs are more prominent than the primary ones; all wingless. Seeds involute, or curved from the base to the apex, hence they are excavated in front.


Lyn. syst. Pentandra, Digynia. Margin of calyx obolute. Petals obovate, emarginate, with an inflexed point; outer petals nearly equal, or radiating and bifid. Fruit didymous: mericarps somewhat globose ventricose, granularly wrinkled, marked with 5 impressed obsolete stripes: the 2 lateral stripes semicircular, and placed before the accessory margin. Vittae none. Commissure furnished with 2 holes. Seed involute from the base to the apex. Carpophore bipartite, adnate on both sides.—Feitl h. ribs, with suctately angular stems; and decomposed leaves; having five segments. Umbels of 2-3 rays. Involuca and involucels wanting, or of one leaf. Flowers white.


Cult. The seeds only require to be sown in the open border.

CLXVIII. ASTOMA (from a priv. and στομα, stoma, a mouth; this genus differs from Bifora in the want of the 2 holes in the commissure; hence the name). D. C. coll. mem. v. p. 71. t. 17. prod. 4. p. 249. but not of Gray.

Lyn. syst. Pentandra, Digynia. All as in Bifora, but the
fruit is more evidently didymous; the commissure narrow, neither perforated nor dilated at the apex; and the styles rather divergent.—A glabrous herb, at first sight appearing like a species of Seseli. Stem terete, striated, erect, branched. Superior leaves bipinnatifid: with a few linear, nearly subulate, elongated, quite entire segments. Umbels by threes, pedunculate at the tops of the branches: the 2 lateral ones axillary and opposite, 6-8-rayed: but the central umbel is 10-12-rayed. Leaves of involucrum 5-6, lanceolate, entire, acuminate. Umbrellae of 10-12 flowers; involucres of 4-5 leaves. Flowers white, all hermaphrodite. This is an intermediate genus between Bifora and Astréma; from the first it differs in the commissure being imperfect, in the fruit being smaller, and in the involucra and involucels being of many leaves; and from the last in the margin of the calyx being obsolete, in the fruit being without ribs, and exactly didymous.

1 A. seseliófolium (D. C. l. c.). H. Native of Egypt, or rather of Syria, where it was gathered by Donati. Coriandrum seseliófolium, D. C. The fruit of this plant is 5 times smaller than in the other genera of Coriándera, and exactly didymous. Mericarps nearly globose.


Cult. See Bifora, p. 381. for culture and propagation.

CLXIX. ASTREMA (from a priv. and ῥημα, rema, a hole; there are no holes in the commissure, as in the genus Bifora). D. C. coll. memb. v. p. 71. t. 18. prod. 4. p. 250.

Lin. syst. Pentándria, Digínia. Teeth of calyx 5, acute, small, permanent. Petals obovate, emarginate, nearly equal, with an inflexed segment. Fruit nearly didymous; mericarps nearly globose, ventricose: marked with 5 rather prominent small ribs. Vitæ none. Commissure narrow, closed. Seed involute from the base to the apex.—An herb with a furrowed stem, having the angles acute and dentely mucricated under the umbels. Leaves multifid, with linear segments. Umbels and umbrellae of 5-8 rays. Involucera and involucels of many linear-setaceous, undivided leaves. This genus is intermediate between Coriánderum and Bifora. The flowers are equal and the fruit is didymous as in Bifora, and the fruit is spigid, 5-ribbed, and the calyx 5-toothed, as in Coriánderum sativum.

1 A. AMERICAUM (D. C. l. c.). H. Native of North America, in the southern provinces at the Red River. Coriánderum Americanum, Natt. in litt.

American Astréma. Pl. 1 to 2 feet.

Cult. See Bifora, p. 381. for culture and propagation.


1 C. satívum (Lin. spec. p. 367). H. but in gardens sometimes C. Native of corn-fields in the Levant, Tartary, Greece, Italy, and the south of France. The plant, although found wild in Essex, where it has been long cultivated, is not a native of this country. Smith. engl. bot. t. 67. fl. grce. t. 285. Blackw. herb. t. 176. Hayne, arz. gew. 7. t. 13. Brunn. hist. 1. p. 203. Mart. rust. t. 141. Rivin. pent. irr. t. 71. Woody. med. bot. 492. t. 181. Planch. icon. t. 294. Moris. hist. 5. p. 259. sect. 9. t. 11. f. 1. The culture and management of the coriander consists in sowing the seeds on a light rich soil in September. Twenty pounds of seed will sow an acre. When the plants come up, thin them to 6 or 8 inches distance every way, and next spring stir the soil with a pronged hoe. In August the seed will be ripe, and if great care be not used, the largest and best part of the seed will be lost. To prevent this, women and children are employed to cut plant by plant, and to put it immediately into cloths, in which it is carried to some convenient part of the field, and there threshed upon a sail cloth. A few strokes of the flail get the seeds clean out, and the threshers are ready for another bundle in a few minutes. In Essex it is sometimes cultivated with farinæ and tease. See Carum cárvi. The produce of coriander is from 10 to 14 cwt. on an acre. It is used by the distillers for flavouring spirits; by the confectioner for incrusting with sugar; and by the druggists for various purposes, for all of which it is said to have a ready sale. Coriander seeds are strong and disagreeable when fresh; but by drying become sufficiently grateful. They are recommended as carminative and stomachic; they are also used to cover the taste of senna, and in spices as currie powder, and seasoning for black puddings: formerly they were steeped in wine, and then dried to render them milder.

Var. β? microcoryum (D. C. prod. 4. p. 250.) fruit one half smaller than that of the species; segments of the leaves very slender and short. H. Native of Mexico, at Tampico. Perhaps a proper species.


Cult. Sow the seeds in the autumn or spring in the open ground.

CLXXI. CYMBOCA/RPUM (from κυμβος, kymbos, a hollow, and κωρος, koros, a fruit; in reference to the shape of the mericarps, which are hollow in front). D. C. ex Meyer, verz. pflanz. p. 132.

Lin. syst. Pentándria, Digínia. Margin of calyx obsolete. Petals equal, obcordate; with an inflexed point. Stylopodium depressed; styles reflexed. Fruit nearly globose; mericarps solid, hemispherical: 5 primary, filiform ribs, which are often obliterated: the lateral ones of these merging into secondary ribs none. Vitæ wanting. Carphophore bipartite, free in the middle, but adnate at the base and apex. Seed excavated in front.—A small, annual fétid plant. Leaves decomposed, with short, linear segments. Umbels opposite the leaves. Leaves of involucera and involucels linear. Flowers white.

1 C. anethóides (D. C. ex Meyer, verz. pflanz. p. 132.) H. Native of Caucas, in stony places on the mountains of Talusch, near Swant, about 2000 feet above the level of the sea.

Fennel-like Cymbocarpum. Pl. 1 foot.

Cult. For culture and propagation see Bifora, p. 381.

N. B. The two species of Coriánderum cultivated in China and Cochín-china, are mentioned by Loreno in his fl. coch. p. 292. under the names of C. sativum and C. testúculatum: but the first differs from the true C. sativum in the involucers being of one leaf; and the second differs from the true C. testúculatum or Bifora, from the involucra and involucels being multifid, and in the fruit being sweet scented.

Tube of calyx adnate to the ovarium: with the limb entire or toothed. Petals 5-10, alternating with the calycine teeth, valvate in estivation, rarely wanting altogether. Stamens equal in number to the petals, rarely double that number, inserted beneath the margin of a large epigynous disk; anthers bilocular, petalate. Ovarium adnate to the calyx: with 2 or more cells, containing each only one ovulum. Styles many, simple, sometimes distinct and diverging, sometimes joined in one, rarely wanting; stigmas simple. Berry 2-15-celled, crowned by the entire or toothed limb of the calyx; having as many 1-seeded cells as there are styles. Seeds angular, erect, with a crustaceous testa, and a membranous endopelure. Embryo small, inverted, surrounded by copious fleshy albumen: having a superior radicle, which is twice the length of the cotyledons.—Trees or shrubs, rarely herbs. Stems frutescent, often scabdent, adhering by root-formed fibres to other substances, as in ivy. Leaves alternate, extispulate, petiolate, simple or compound. Petioles long, always dilated and thickened at the base. Flowers axillary or terminal, umbellate or capitiate; the umbels or heads often disposed in a racemose or paniculate manner: having involucres usually present.

The order Araliaceæ approximates Umbelliferaæ, but differs from it in the inflorescence being often imperfectly umbellate; in the styles being usually many; in the fruit being baccate, and usually plurilocular, always without vitta; and in the parts of the fruit not being separable; in the albumen being fleshy, and in the embryo being nearly the length of the albumen. It also comes near Ampelidææ, but differs in the stamens in Araliaceæ alternating with the petals, not as in Ampelidææ opposite them, in the leaves being extispulate, and in the inflorescence never being opposite the leaves, as well as in the calyx adhering to the ovary, not free from it. The genus Hedera has often been confused with Cuprifilialææ, but agrees best with the present order, in the free petals and structure of the fruit.

The flowers have no beauty, but the foliage of many is extremely fine. The medicinal properties are much the same as those of Umbelliferaæ, except the fruit, which differs in virtues, as it does in botanical structure. The bark of many of the species exudes an aromatic gum-resin, as in Arália umbellfera and others. The roots are tonic, with, in some cases, the flavour of parsnip. The famous Ginseng, which is produced by a species of Pánax, is reputed to have powerful tonic, restorative, and even aphrodisiac qualities; but it is probable that these have been greatly exaggerated. The plant has perhaps some really invigorating power when fresh, which after the statements made by Father Jartoux cannot reasonably be doubted.

Synopsis of the genera.

1 Adóxa. Calyx 2-3-cleft. Corolla rotate, 4 (f. 66. a.) -5-cleft. Stamens 8-10. Styles 4-5 (f. 66. b.). Berry 4-celled 4-seeded. Seed girded by a membranous border.


3 Cussonia. Margin of calyx entire, or with 5-7 acute teeth. Petals 5-7. Stamens equal in number to the petals. Ovarium crowned by a broad disk. Styles 2-3, short. Fruit 2-3-celled, roundish, nearly dry.


5 Gilsbe'ria. Margin of calyx entire, drawn out beyond the ovary. Petals 5-16. Stamens double the number of the petals, 2 in front of each petal. Styles 8-12, short, rather concreet at the base. Fruit 8-12-celled, 8-12-ribbed, nearly dry.


10 Scioda'phyllum. All as in Arália, but the petals are joined together in the form of a calyptra at the apex.

11 He'dera. Margin of calyx elevated or toothed. Petals 5-10, not cohering at the apex. Stamens 5-10. Styles 5-10, conniving, or joined in one. Berry 5-10-celled.

12 Paratro'pia. All as in Arália or Hedera, but differs in the stigmas being sessile, at first approximate, and immersed in the epigynous disk.


I. ADO'XA (from a priv. and doxa, doxa, glory; without any appearance. This plant covers the places where it grows, but the flowers are hardly to be seen, being of the same colour as the leaves). Lin. gen. no. 501. Guettm. fruct. 2. p. 141. t. 112. f. 9. Lam. ill. t. 320. D. C. prod. 4. p. 251.—Moschettrella, Tourn. inst. t. 68.

Lin. syst. Octándria, Tetrasygium. Tube of calyx adnate to the ovary, with 2-3 deep segments. Corolla of one petal, wheel-shaped, in 4-5 (f. 66. a.) deep ovate, acute, spreading segments, longer than the calyx. Stamens 8 or 10; anthers roundish. Ovarium half superior. Styles 4-5 (f. 66. b.), short, united at their base, which is permanent. Berry globose, its lower half invested with the permanent calyx, whose segments surround the middle part, of one cell, pulpy inside. Seeds 4, ranged round the
central pulp, compressed, surrounded by a vertical membranous border. The terminal flower is only 4-cleft, with 8 stamens: the rest 5-cleft; hence according to the rule assumed by Linneus, this genus is placed in Octandria.—A smooth herb of humble growth, with twice ternate leaves, and terminal capitulate green flowers. (f. 66. a.)

I. MOSCHATELLA (Lin. spec. p. 327.) 1. H. Native of Europe and Siberia, even to Dahuria, in groves, thickets, and under hedges; plentiful in Britain in the same situations; in North America in the woods between lat. 54° and 64°, and the Rocky Mountains between lat. 42° and 46°. Smith, engl. bot. t. 453. Curt. fl. lond. t. 26. Fl. dan. 94. Moschatella tetragona, Mœnch. meth. 478.—Lob. icon. 674. f. 2.—Cord. hist. 1732. f. 513. Gerard. emac. 1091. Root of several white imbricated concave scales, producing fibres and runners from their interstices. Stem angular. Radical leaves twice ternate, on long stalks; cauline ones ternate, on long stalks. Flowers with a musk scent, when moist, forming a round head. (f. 66. a.)


The plant will grow freely under the shade of trees; and will be easily increased by the offsets.

II. PANAX (from παν, pan, all, and ακος, akos, a remedy; that is to say, a remedy for all diseases; in allusion to the miraculous virtues which is attributed to P. quinquifolium, the ginseng of the shops). Lin. gen. no. 1106. Lam. ill. t. 860. D. C. prod. 4. p. 255.

Lin. syst. Polygânia, Dicœa. Flowers polygamous. Margin of calyx very short, obsolescent 5-toothed. Petals 5 (f. 67. a.). Stamens 5, inserted along with the petals under the margin of the disk, alternating with them. Styles 2-3, short. Fruit fleshy, compressed, orbicular, or didymous (f. 67. c.), 2-celled: cells coriaceous chartaceous, 1-seeded.—Herbs, shrubs, and trees, having the leaves and inflorescence variable. The habit of the species is heterogeneous, but the characters of those that are perfectly known agree.

§ 1. Herbaceous plants, with tuberous roots; and verticillate, petiolate, palmately-compound leaves.—Aureliiana, Cat. car. append. t. 16.—Araliâstrum, Vaill. sern. p. 43.

1 P. QUINQUIFOLIUM (Lin. spec. 1512.) root fusiform, a little branched; leaves with 5 leaflets, which are stalked from the top of the common petiole; peduncle of umbel shorter than the petiole; styles and seeds 2. 2. H. Native of North America, in shady mountain woods, from Canada to Carolina; and of the north of Asia, in Tauria; and the north of China. Sims, bot. mag. 1333. Bigel. med. bot. 2. t. 29. Woody med. bot. t. 99. Blackw. 513. —Lafit. gins. 51. t. 1. Catesb. car. 16.—Trew, ehet. t. 6. f. 1.

Jartoux, in phil. trans. 20. p. 237. Herb larger than the following species. Flowers yellowish. Berry globose, depressed, red. This plant is a native of Chinese Tartary, and also of North America. In the former country it has been gathered as an invaluable drug from time immemorial. In 1709 the Emperor of China gave orders to 10,000 Tartars to go in quest of the root, and to bring as much as they could find; every one was to give two pounds of the best to the emperor, and to sell the rest for the same weight of fine silver. The roots, which are said to bear some resemblance to the human form, are gathered and dried, and enter into almost every medicine used by the Tartars and Chinese. Osbeck says that he never looked into the apothecaries' shops, but they were always selling ginseng, that both poor people and those of the highest rank made use of it, and that they boil half an ounce in their tea or soup every morning, as a remedy for consumption and other diseases. Jartoux relates that the most eminent physicians of China have written volumes on the medicinal powers of this plant, asserting that it gives immediate relief in extreme fatigue, either of body or mind, that it dissolves putrid humours and, renders respiration easy, strengthens the stomach, promotes appetite, stops vomiting, removes hysteric, hypochondriacal, and all nervous affections, giving a vigorous tone of body, even in extreme old age. The French in Canada use the root for curing the asthma, and as a stomachic. After all, our physicians say that we have no proof of the efficacy of ginseng in Europe, and that from its sensible qualities it seems to possess very little power as a medicine. The Chinese name of yan-sam or yan-sam, and the American one garangtonges or garangtologing are both derived from the fancied resemblance in the root.


Three-leaved Ginseng. Fl. May, June. Clit. 1759. Fl. 3 fl. 3 P. pseudo-Ginseng (Wall. in act. soc. med. et phys. calc. 4. p. 117. fl. rar. asiat. 2. p. 130. t. 137.) tubers of roots in fascicles; leaves in threes or fours, quinate or ternate; leaflets lanceolate, ending in a long taper point, petiolate, much attenuated at both ends, doubly and cuspidately serrated, sometimes deeply serrated, beset with hoary bristles along the nerves and midrib; peduncles terminal, usually trifid, about equal in length to the pedicles; flowers hemiphrodite; berries 2-3-seeded. 2. H. Native of Nipan, on the top of Mount Sheopore. Flowers whitish. Styles 2-3. Berry 2-3-seelled, red. This species comes very near to P. quinquifolium or Ginseng, but is not known to possess any medicinal qualities.

False Ginseng. Fl. June. Fl. 1 to 2 feet.

4 P. triplinâta (Wall. cat. no. 4934.) herbaceous, unarméd; leaves triennate; leaflets ovate, acuminate, mucronately serrated, pale beneath, rather downy; panicle long, pubescent; umbellules many-flowered. 2. H. Native of Nipan, at Gosaingtham. P. decompositum, Wall. but not of D. C.

Triplinâta-leaved Panax. Fl. 2 to 3 feet.

§ 2. Prickly shrubs. Leaves terete, or palmately lobed.

5 P. aculeâ'tum (Ait. hort. kew. 3. p. 44.) stem shrubby;

**Prickly Panax.** Fl. Nov. Cht. 1773. Shrub 3 to 5 feet.

6 P. Loureihi a'num (D. C. prod. 4. p. 252.) stem shrubby; branches prickly; leaves of 3 broad, lanceolate leaflets; umbels terminal, dense; petals 4. \( \gamma \). G. Native of China, in the province of Canton. Electronia Chénisii, Lour. coch. p. 162. This is a true species of *Panax*, and probably nothing but *P. aculeatum*. Flowers white. Stamens 5. Berry 2-seeded.

**Loureiro’s Panax.** Shrub 5 feet.

7 P. ho'oribum (Smith, in Rees’ cyc. 26. no. 10.) shrub bushy and very prickly; leaves simple, palately lobed, deeply serrated, cordate; with prickly veins; umbels capitate, racemose; styles and seeds 2. \( \gamma \).

H. Native of the west coast of North America, at Nootka Sound. Abundant on the west side of the Rocky Mountains, from the head-springs of the Columbia to the coast; and of North California, ex Smith; and of the islands of Kadiak and Sitka, according to Steven. Styles 2, short. Fruit orbicular, pulpy. Racemes hispid. Flowers polygamous. Aralia occidentalis, Willd. herb. ex Stev. The entangled stems of this remarkable plant are described as a great impediment to travellers in the woods of North America.

**Hook. fl. bor. amer. I. p. 273. t. 98. (f. 68.)**

**Horrid Panax.** Shrub. Prickly.

8 P.? Hanila (D. C. prod. 4. p. 252.) stem arborescent, prickly; leaves cordate, 5-lobed, toothed, coriaceous, glabrous; umbels globose, tomentose, disposed in racemose panicles. \( \gamma \). F. Native of Nipaul, at Narrain-hetty. Hedera Hanila, Hamilt. in D. Don, prod. nep. 187.

**Hanila Panax.** Tree.

§ 3. **Shrubby, unarmed.** Leaves simple, undivided.


**Shell-leaved Panax.** Cht. 1820. Shrub 10 to 12 feet.

10 P. Heynianum (Wall. cat. no. 4927.) shrubby, unarmed; leaves broad, roundish-cordate, petiolar, quite entire, coriaceous, glabrous; branches of panicle in clusters; umbellules few-flowered. \( \gamma \). S. Native of the East Indies.

**Heyne’s Panax.** Tree.

11 P. simplex (Forst. prod. no. 399.) stem fruticose; leaves lanceolate, serrated; umbels compound. \( \gamma \). G. Native of New Zealand. Perhaps the same as *P. simplicifolium*, Dietr. garrn. lex. 6. p. 633.

**Simple-leaved Panax.** Shrub.

§ 4. **Unarmed shrubs, with digitate leaves.**

12 P. atenuatum (Swartz, prod. p. 54. fl. ind. occ. 1. p. 562.) stem shrubby, unarmed; leaves petiolar, digitate; stipulas intrapetiolar, membranous: leaflets 5, rarely 3, petiolate, ovate, narrowly acuminate, crenated, glabrous; umbels terminal; branches racemiflorous. \( \gamma \). S. Native of Guadaloupe and St. Christopher. Racemes shorter than the leaves. Fruit compressed, indehiscent, obtuse, hardish, 2-seeded, rarely 3-seeded. Flowers hermaphrodite, all fertile. Style bifid, rarely trifid.

**Attenuated-leafletted Panax.** Cht. 1823. Shrub 10 to 12 ft.

13 P. arboreum (Forst. prod. 398.) stem arboreous, unarmed; leaves digitate, petiolate; leaflets 5, obovate, serrate-toothed; umbels compound; rays of umbel elongated. \( \gamma \). G. Native of New Zealand. Lin. fil. suppl. 441.

**Arboreous Panax.** Tree.

14 P.? Gaudichaudii (D. C. prod. 4. p. 253.) shrub glabrous, unarmed; leaves digitate, petiolate; leaflets 3-5, oblate-lanceolate, cuneate at the base, acute, and quite entire at the apex, or bluntly somewhat toothed; umbels panicled, rising from the upper axes of the leaves, length of leaves. \( \gamma \). G. Native of the Sandwich Islands, in temperate places. Aralia trigyna, Gaud. voy. p. 474. t. 98. This species is very nearly allied to *P. Lessoni*. Petioles not dilated at the base. Peduncles having the branches umbellately disposed at the apex, the rest scattered. Leaves scattered along the branches. Styles 3, very short, almost concrete.

**Gaudichaud’s Panax.** Tree.

15 P.? Lessoni (D. C. prod. 4. p. 253.) shrub glabrous, unarmed; leaves digitate, petiolate; leaflets 3-5, oblate-lanceolate, cuneate at the base, acute, and quite entire at the apex, or bluntly somewhat toothed; umbels panicled, rising from the upper axes of the leaves, length of leaves. \( \gamma \). G. Native of the Sandwich Islands. Flowers and fruit unknown.

**Ovate-leaved Panax.** Tree.

17 P.? Platyphyllum (Hook. et Arn. in Beech. voy. pt. bot. 1. p. 84.) stem arborescent, glabrous, unarmed; leaves petiolate: superior ones opposite; leaflets 3, on long petioles, oval-elliptic, obtuse, remotely and sharply serrated, coriaceous; peduncles terminal, bearing umbels which are disposed in panicles; pedicels very short; styles 3; fruit globose-trigonal, 3-seeded. \( \gamma \). G. Native of the Sandwich Islands. Flowers and fruit unknown.

**Ovate-leaved Panax.** Tree.

18 P. Glabra (Hook. et Arn. in Beech. voy. pt. bot. 1. p. 84.) stem arborescent, glabrous, unarmed; leaves petiolate: upper ones opposite; leaflets 3, on long petioles, ovate, quite entire, coriaceous. \( \gamma \). F. Native of the Sandwich Islands. Flowers and fruit unknown.

**Broad-leaved Panax.** Tree.

19 P. Glabra (H. B. et Kunth, nov. gen. amer. 5. p. 10.) stem arborescent, unarmed; leaves petiolate, digitate; leaflets 5, petiolulate, elliptic-oblong, acute at the base, quite entire, glabrous; panicle terminal; umbellules few-flowered. \( \gamma \). S. Native of South America, near La Vente Grande de Caraccas.

**Smooth Panax.** Tree 20 feet.

19 P. Longipetiolatrum (Pohl, in litt. ex D. C. prod. 4. p. 253.) stem arborescent, unarmed; leaves on long petioles, digitate, glabrous; leaflets 5-9, oblong, acuminate, acute at the base, entire, or acutely toothed, membranous, on long petioles: adult ones glabrous, but when young clothed with rusty tomentum beneath. \( \gamma \). S. Native of Brazil.

**Long-petiolated Panax.** Tree.
20 P. splendens (H. B. et Kunth, l. c. p. 11.) stem arbores, unarmed; leaves digitate, on long petioles; leaflets 9, petiolulate, somewhat oblong, cuspitate acuminate, rounded at the base, or somewhat cordate, sharply and doubly toothed, rather hispid above and silky beneath.  h. S. Native of South America, in the temperate parts of Popayan. Aralia micans, Willd. in Schultes, syst. 6. p. 701. Flowers and fruit unknown.

Spleen-leaved Panax. Tree 20 feet?

21 P. serratum (Wall. in herb. Moricand. ex D. C. prod. 4. p. 253.) stem shrubby, unarmed; leaves on long petioles, digitate; leaflets 7, petiolulate, oblong-lanceolate, acuminate, rather bluntish at the base, somewhat serrated, pale beneath, glabrous on both surfaces in the adult state.  h. G. Native of Nipaul.

Umbs many, disposed in a racemose manner.

Serrate-leaved Panax. Shrub.

22 P. tomentosum (Wall. in herb. Moricand, ex D. C. prod. 4. p. 254.) stem shrubby, unarmed; leaves on long petioles, digitate; leaflets 5-7, petiolulate, oblong-lanceolate, quite entire, acuminate, somewhat attenuated at the base, glabrous above, and tomentose beneath.  h. G. Native of Nipaul. Flowers like those of P. serratum, and perhaps, with that species, ought to be excluded from P. tomentosum.

Tomentose Panax. Shrub.

23 P. speciosum (Willd. spec. 4. p. 1126.) stem arbores, unarmed; leaves petiolate, digitate; leaflets 7-10, petiolulate, ovate-oblong, rounded at the base, acute and quite entire at the apex, flat, clothed with silky tomentum beneath; panicles terminal, crowded; umbels of 12-15 flowers.  h. S. Native of Caracas and Porto-Rico, on sterile hills. P. spinosa, Poir. suppl. 2. p. 778. P. undulatum, H. B. et Kunth, nov. gen. amer. 5. p. 11. t. 417. f. 2. Panicle very showy, rather silky. Petioles 3 feet long; leaflets nearly a foot long.

Showy Panax. Tree large.


25 P. sericeum (Pohl, in litt. ex D. C. prod. 4. p. 254.) stem arbores, unarmed; leaves digitate; leaflets 6-7, nearly sessile, oblong, obtuse, cuneate, with a revolute entire margin, coriaceous, silky from very fine rusty down beneath; racemes umbelliferous, panicled, clothed with silky rusty down.  h. S. Native of Brazil. P. vinossus, Schlecht. ex Pohl.

Silky Panax. Tree.

5. Shubby or herbaceous plants. Leaves pinnate, bipinnate, and pinnately decomposed.

26 P. Anisatum (D. C. prod. 4. p. 254.) stem shrubby, unarmed; branches very hispid; leaves impari-pinnate: with 5-7 oval, quite entire leaflets, which are acute at both ends; umbels terminal, compound.  h. S. Native of the Moluccas, and other Indian islands. Anisatum Moluccænum, Rumph. amb. 2. p. 132. t. 42. Fruit rather digymous, with the scent of anise-seed.

Anise-scented-seeded Panax. Shrub 10 feet.

27 P. Leschenaultii (D. C. prod. 4. p. 254.) stem shrubby, unarmed; leaves pinnate: with 5 petiolulate, broadly ovate, narrowly acuminate, acutely serrated, glabrous leaflets; umbels compound, bracteate.  h. F. Native of the East Indies, on the Nellighery mountains, where it was gathered under the name of Solé maliquet. Calyx bluntly 5-toothed.

Leschenault’s Panax. Tree.

28 P. Desiccum (Wall. cat. 4937.) unarmed; leaves pinnate; leaflets 5, broad-ovate, acuminate, smooth, spinulose serrated, rather obtuse at the base; panicle umbellate, compound, spreading; umbellules of many flowers.  h. G. Native of Nipaul.

Two-paired-leafletted Panax. Tree.

29 P. pinnaatum (Lam. dict. 2. p. 715.) stem shrubby, prickly; rachis of leaves jointed, furnished with hooked prickles, particularly at the joints; leaflets ovate, acuminate, serrated, beset with bristly hairs on both surfaces, particularly on the nerves; panicle long, downy; umbellules many-flowered.  h. S. Native of the East Indies.

Armed Panax. Shrub.

30 P. Pragranum (Roxb. hort. beng. p. 21.) stem shrubby, unarmed; leaves decomposed, having the petiole many times oppositely branched: the ultimate branches of the petiole trifoliolate; leaflets ovate, acuminate, entire, petiolulate, the middle one the longest; panicles loose: ultimate branches short, bearing few-flowered umbellules.  h. G. Native of Nipaul. Hédera fragrans, D. Don, prod. fl. nepal. 187. but the leaves are not truly ternate, nor the margins serrately serrated, nor any ways glaucous beneath.


32 P. obtusum (Blum. bijdr. p. 880.) stem shrubby, unarmed; leaves supra-decomposed; leaflets obovate-roundish, entire, or deeply parted, repandly and cuspitate serrated; umbels compound, terminal.  h. S. Native of Java, where it is called Kodong-dong.

Obtuse-leafletted Panax. Shrub.

33 P. Samber firefight (Sieb. pl. exsic. nov. holl. 2. no. 256.) stem shrubby, unarmed; leaves pinnate; leaflets petiolate, oval-oblong, acuminate, coarsely and dentately serrated: ultimate ones deeply trifid; panicle corymbose: with the branches umbelliferous at the apex.  h. S. Native of New Holland. Styles 2, acute.

Elder-leafed Panax. Shrub.

34 P. Decompositum (Wall. in herb. Moricand. ex D. C. prod. 4. p. 255.) stem herbaceous? unarmed; leaves impari-pinnate, of 2-4 pairs of petiolulate, ovate, acuminate, sharply serrated, glabrous, or rather scabrous leaflets; umbels decomposed.—Native of Nipaul. Umbellules many-flowered; pedicels 4-5 lines long.
ARALIACEÆ. III. CUSSONIA.

IV. MARALIA. V. GILIBERTIA.

_Decompond-umbellated Panax._ Pl. 2 to 3 feet.

_Cult._ The hardy species of this genus grow best in peat, and are increased by dividing at the root. The other species grow well in a mixture of loam and sand: and are increased by cuttings which should be planted in sand, with a hand-glass placed over them.


**Linn. syst. Pet.-Heptandria, Di-Trigynia.** Margin of calyx entire, drawn out beyond the ovary. Petals 5-10. Stamens the same number as there are petals, and alternating with them. Ovary 5-10-celled, crowned by a broad disk above. Style short, thick, conical or pyramidal, composed of 3-10 joined ones, which are erectly conning at the apex at first, but at length diverging a little. Fruit fleshy.—Shrubs or small trees. Leaves variable. Flowers umbellate, disposed in racemose panicles.

This genus differs from Gastônia in the stamens being equal in number to the petals, not double that number as in that genus; and in the style being thick and pyramidal, hardly divided at the apex, not parted to the base, and stellate.

1 _G. umbella_ (Ruiz et Pav. fl. per. 3. p. 75. t. 312.) leaves simple; petioles unarmed; limb ovate-oblong, obsolescently denticulated, glabrous; umbels terminal, compound. _G._ G. Native of Peru, in the groves of Munna. Calyx 7-toothed. Petals 7. Style thick, conical; stigmas 7, at lengths spreading a little. Fruit 7-celled. Wangenheimia umbellata and Ginânía umbellata, Dietr. ex Steud. _Umbellate-flowed Gilbertia._ Tree.


3 _G. repanda_ (D. C. l. c.) leaves or leaflets broadly ovate, feather-nerved, coriaceous, glabrous on both surfaces, bluntly somewhat attenuated at the base, on short petioles, with repand-toothed margins; flowers umbellate. _G._ S. Native of the Mauritius. Margin of calyx short, entire. Ovary sulcate, conical in the superior part. Style hardly any; stigmas 5-7, very short, nearly stellate. The leaves or leaflets being detached from the specimen examined, it is doubtful whether the leaves are simple or compound; but from analogy we would rather consider them as compound. _Repand-toothed-leaved Gilbertia._ Shrub.


5 _G. panícula_ (D. C. l. c.) leaves or leaflets broadly ovate, obtuse, feather-nerved, quite entire, coriaceous, glabrous; flowers paniculate, disposed in racemes along the branches of the panicle. _F._ S. Native of the Mauritius and Bourbon. The leaves or the leaflets, whichever they may be, are about a foot long, and 6 inches broad. Panicle 6-8 inches long. Flowers on short pedicles. Margin of calyx entire; flower-bud conical, obtuse, 10-angled. Petals 10, valvate. Stamens 10, alternating with the petals. Style thick, conical, hardly 8-10-lobed at the apex. Ovary 8, rarely 9-10-celled. _Panicled Gilbertia._ Tree.

3 d 2
ARALIACEÆ. VI. GASTONIA. VII. POLYSCIAS. VIII. TORICELLIA. IX. ARALIA.

† A species not described.

6 G. saururoides (D. C. I. c.) ½. S. Native of the Moluccas. Gastrocné saururoides, Roxb. hort. Beng. p. 90. Saururus-like Gilbertia. Tree. Cult. Shrubs and trees, having handsome foliage. The soil best adapted to grow these is a mixture of sand, loam, and peat; and cuttings are readily rooted, if planted in sand under a handglass in heat.


VII. POLYSCIAS (from πολύς, poly, many, and σκεύος, skia, a shadow; in reference to the numerous umbels). Forst. gen. p. 63. t. 32. Lam. dict. 5. p. 559. ill. t. 329. with a figure. D. C. prod. 4. p. 257.

LIN. SYST. Pent-Octandria, Tri-Pentagynia. Margin of calyx short, denticulated. Petals 5-7, but usually 8, lanceolate, spreading. Stamens equal in number to the petals, and alternating with them. Style wanting; stigmas 3-5, short, erectly spreading. Berry globose, crowned by the margin of the calyx and stigmas, 4-celled, 4-seeded. Leaves pinnate. Umbels compound or verticillately proliferous; umbelles of many rays, flat. The rest unknown. A very doubtful genus, but probably only a species of Araúla.

1 P. pinna′ta (Forst. l. c.) ½. G. Native of the islands in the Southern ocean. P. umbellāta, Spreng. ex Steud. nom. 546. A plant has been sent by La Billardière from New Zealand, under the name of Polysciās, which rather disagrees with the description given by Forster of his plant, in the branches of the panicle being verticillate, and in the umbelles being 5-7-flowered. Margin of calyx nearly entire. Disk fleshy, covering the ovary. Styles 2-3, erect, approximate, acute. Leaflets oblong, obtuse at the base, and acuminated at the apex, with somewhat denticulate margins. Pinnate-leaved Polysciās. Tree or shrub. Cult. See Cussònia. p. 387. For culture and propagation.

VIII. TORICELLIA (in honour of Dr. Toricelli, who prepared a barometer for the measurement of mountains, and therefore has done something towards the geography of botany). D. C. prod. 4. p. 257.

LIN. SYST. Pentandria, Tetragynia. Margin of calyx acutely 5-toothed. Petals 5, oblong, attenuated at the base, and uncinately incurved at the apex. Stamens 5; filaments very short; anthers ovate. Styles 4, straight, short. Berry nearly dry, ovate, crowned by the calyx, 4-celled. Seed unknown. — A small mountain shrub: with terete white glabrous branches, ringed with ciliate. Leaves alternate, exstipulate, simple, cordate, roundish, membranous, palmately 5-nerved, coarsely and acutely toothed, somewhat 5-lobed, pubescent along the nerves and nerves; petals rather dilated at the base. Panicle terminal, many flowered. Flowers abortive or polygamous, or the number of the parts are rather variable. This genus is nearly allied to Polysciās.

1 T. tiliifolius (D. C. prod. 4. p. 257.) ½. H. Native of Nipaul, on the highest mountains. Sambucus? tiliifolia, Wall. mss. Leaves 5-6 inches in diameter, on petioles 3 inches long. Line-tree-leaved Toricecellia. Shrub 1 to 2 feet. Cult. This shrub will grow very well in the open ground, and it may be increased by cuttings or seeds.

IX. ARALIA (a name of unknown meaning, under which there is a species was sent to Fagon from Quebec, in 1764, by one Sarrazin, a French physician). D. Don, prod. fl. nep. 185. in a note. Kunth, nov. gen. amer. 5. p. 8. in a note. D. C. prod. 4. p. 257. — Arália species of Lin. and other authors. — Arália veræ, Blum. bijdr. 869.

LIN. SYST. Pentandria, Pentagynia. Margin of calyx very short, entire or toothed. Petals 5, free, and expanded at the apex. Stamens 5. Styles 5, expanded, spreading diveraciously. Berry 5-celled, usually torose. Pyrene chartaceous. — Herbs and shrubs, indigenous to North America, with compound leaves; and umbellate white flowers, which are usually disposed in panicles.

§ 1. Unarmed species.

1 A. nudicaulis (Lin. spec. 393.) plant stemless; radical leaf one, with a trifid petiole; impari-pinnate divisions, bearing each 5 ovate acute serrated leaflets; scape trifid at the apex, shorter than the leaf; each division bearing a many-flowered umbel, without any involucre. 2. H. Native of North America, from Canada to Carolinia, and from Lake Huron through the woody country to lat 46°, and the Rocky Mountains; and of Newfoundland. Lam. dict. 1. p. 224. Torr. fl. un. st. 1. p. 327. Big. fl. bost. ed. 2. p. 122. Rafin. med. bot. 1. t. 8.— Plak. al. t. 238. f. 5. Petals white, reflexed. Stamens exerted. Styles 3-5, short, erect, distinct. The Crees use the root of this plant as a remedy against the venereal disease, under the name of nampos-ootelephek, i.e. rabbit-root; and also apply the bruised bark of its root to recent wounds. — Richardson. The roots were formerly brought over and sold for sarsaparilla, and some of the inhabitants of Canada make use of it as such, but it is very different from the true sort. A. nudicáulis, Blum. bijdr. p. 870. introduced into Java from Japan, is distinct from our plant. Naked-stemmed Arália. Fl. June, July. Cist. 1731. Pl. ½ to 1 foot.

2 A. racemosâ (Lin. spec. 395.) stem herbaceous, smooth, diveraciously branched; petioles tripartite, the partitions bearing each 3-5, ovate or cordate, acuminate, serrated, smooth leaflets; peduncles axillary, and disposed in a terminal raceme, umbelliferous; involucrum small, of few leaves. 3. H. Native of North America, from Canada to Virginia, in rocky shady situations; throughout Canada, &c. from Lake Huron to the Saskatchewan. Schkuhr, handb. 1. t. 86. Hayn. term. bot. t. 38. f. 5.— Corn. can. t. 75.— Moris. hist. sect. 1. t. 2. f. 9. Petals greenish-white, spreading. Styles 5, short, erect, hardly recurved at the apex. Fruit 5-ribbed. Stamens equal in length to the petals. The plant is called spikenard in North America, and is highly esteemed as a medicine. Axillary branches leafy.
ARALIACEæ.


3 A. Hu'MILIS (Cav. Ícon. 4. p. 7. t. 318.) stem herbaceous, glabrous, a little branched; leaves impari-pinnate, pubescent: leaflets cordate, acute, serrated; umbels disposed in terminal racemes; involucra very short, of many leaves. H. G. Native of New Spain. The fruit, according to Cav. Ícon. is nearly globose. Styles 5, erect, rather distant. Stem variegated with brown tubercles. Petals green.

*Humble Aralia.* Pl. 1 1/2 foot.

4 A. PUBESCENS (D. C. cat. hort. monsp. 1813. p. 80.) stem woody, unarmed, glabrous, branched; leaves impari-pinnate, pubescent; leaflets ovate-lanceolate, serrated, attenuate at the base; and acuminate at the apex; umbels numerous, disposed in a terminal raceme; involucra very short, of few leaves. H. G. Native of New Spain. A. scabra, Presl, in herb. Henke. Petioles not dilated into auricles at the base. Styles 5, divaricately recurved. Fruit globose, dark purple.


5 A. hISPIDA (Michx. fl. bor. amer. 1. p. 185.) stem suffruticoso, very hispid at the base from bristles; leaves bipinnate; leaflets ovate, acute, deeply serrated, glabrous; petioles hispid; umbels on long peduncles; involucra of many short sessile leaves. H. H. Native of North America; in stony woods in New England, &c.; on high mountains in Pennsylvania and Virginia; Canada, from Lake Huron to the Saskatchewan; Hudson's Bay, and of Newfoundland. Vent. hort. cels. t. 41. Sims, bot. mag. t. 1085. Lodd. bot. cab. 1806. A. Muhlenbergiana, Schulz, syst. 6. p. 704. does not differ from this species. The shrub is called *Wild-elder.* Stem panicleately branched at top.


† Unarmed species, which are not sufficiently known.


*Cordate-leaved Aralia.* Pl. ?

7 A. Japonica (Thumb. fl. jap. 128.) stem shrubby, unarmed; leaves petiolate, 7-nerved, 7-lobed; lobes ovate, serrated at the apex; panicles terminal; peduncles umbelliferous. H. H. Native of Japan, near Nagasaki. Banks, icon. Kämpf. t. 10. Styles 5, diverging. Berry striated. Petals ovate, acute, reflexed (Thumb.). Leaves coriaceous, glabrous in the adult state, but when young woolly on both surfaces. (Blum. bijdr. p. 371.) Petals white.

*Japan Aralia.* Shrub 5 to 6 feet.

8 A. Scheffleræa (Spreng. ping. 1. p. 28.) stem shrubby, smooth; leaves on long petiolo, digitate; leaflets 5, petiolulate, lanceolate, attenuate at the base, serrated, glabrous on both surfaces. H. G. Native of New Zealand. Scheffleræa digitata, Forst. gen. t. 23. Lam. ill. t. 221. Petals 5, nearly spatulate, erect, not as in the genus Sciadophyllum, cohering into a calyx-trumpet at the apex. Styles 8-10, diverging, not erect, as in Hédera. Berry 8-10 angled.

*Scheffler's Aralia.* Shrub.

9 A. ÓCOPHYLLA (Lour. coeh. p. 187.) stem almost arborescent, unarmed; leaves petiolate, digitate: leaflets 8, oblong, obtuse, quite entire, glabrous; panicles umbellate. H. G. Native of Cochin-china. Flowers yellow, of 5 petals. Stigmas 5, sessile. Berry ovate, 5-seeded. Perhaps a species of *Polyscias.* Panicle large, ending in umbels, which are without involucra.

*Eight-leafletted Aralia.* Shrub 10 feet.

10 A. PALMATA (Lam. dict. 1. p. 224. but not of Lour.) stem shrubby, unarmed; leaves petiolate, pinnately 9-nerved, 9-cleft: lobes lanceolate, serrated; berry succulently angular, 6- to 8-celled. H. S. Native of the Moluccas.—Rumph. amb. 4. t. 43. Perhaps a species of *Polyscias* or *Hédera.* Umbels crowded, terminal.

*Palmate-leaved Aralia.* Shrub.

11 A. ? MCANS (Willd. herb. ex Spreng. syst. 1. p. 933.) leaves digitate; leaflets or lobes 10, subcordate, oblong, acuminate, mucronately toothed, hispid above, and silky beneath; heads disposed in racemes. H. S. Native country unknown. Perhaps a species of *Hédera.*

*Glittering Aralia.* Tree or shrub.

§ 2. Prickly species.

12 A. spinosa (Lin. spec. p. 392.) stem arborescent, and are, as well as the petioles, prickly; leaves doubly and triply pinnate; leaflets ovate, acuminate, deeply serrated; panicles much branched, beset with velvety stellate down; umbels numerous; involucra small, of few leaves. H. H. Native of North America, in fertile low woods; of Carolina and Virginia; likewise in the Illinois country. Wats. dendr. bit. t. 116. Comm. hort. amat. 1 t. 47. Pl. 102 and 103. A tree about 8-12 feet high, with a simple stem. Petals white, reflexed. Styles 5, divergent, arched. Fruit 5-ribbed. Known under the name of *anglica-tree.* The berries used in an infusion of wine or spirits are a remarkable medicine for relieving rheumatic pains.

Var. ß. înermis (Presl, fl. amer. sept. 1. p. 209.) stem spinose, glaucous; petioles unarmed. H. H. Native of South Carolina, near Charleston.


13 A. MONTANA (Blum. bijdr. p. 870.) stem arborescent, and are, as well as the petioles and base of the leaves, prickly; leaves compo咄nd; leaflets ovate, acuminate, obliquely subcordate at the base, doubly serrated, hairy on both surfaces; panicles branched; flowers umbellate. H. S. Native of Java, on the mountains of Seribu, where it is called *Kibokoyana.*

*Mountain Aralia.* Shrub 8 to 10 feet?

14 A. CHINEÆSIS (Lin. spec. 393.) Blum. bijdr. p. 870.) stem arborescent, and are, as well as the petioles, prickly; leaves bipinnate, compound; leaflets ovate-oblong, acuminate, unequally rounded at the base, sharply serrated, villous; panicle branched; flowers glomerate, H. S. Native of Java, on the mountains (Blum.), China (Lin.), Lour. coeh. 187. Styles diverging, revolute. Petioles villous, bearing a few straight prickles. The figure in Rumph. amb. 4. t. 44. cited by Linæus for this plant, is a species of *Leœa.* Loureiro describes the plant as very troublesome to travellers, with its numerous crooked prickles, as it climbs in the hedges. According to him the corolla is white. Styles scarcely any.

*China Aralia.* Tree 10 to 12 feet.

15 A. ERINAÆCA (Hook. in Brewst. edit. journ. sc. 1827. p. 64.) stem very spiny; leaves nearly palmate, very acute: lobes cut; petioles and nerves of leaves spiny; umbellules globose, disposed in racemes. H. H. Native of the west coast of North America, in Queen Charlotte's islands.

*Erinaæcaus Aralia.* Shrub.

16 A. ÓNTOMYLLA (Thumb. fl. jap. 128.) stem arborescent, prickly; leaves digitate: leaflets 5, ovate, acute, somewhat petiolate, serrated at the top; umbels simple, pedunculate. H. H. Native of Japan. *Panax spinosus,* Lin. fill. suppl. 441. ex Lam. dict. 2. p. 715.

*Five-leafletted Aralia.* Tree.

Cult. The hardly herbaceous species of *Aralia* grow best in peat or vegetable mould, and are increased by dividing at the
root, or by seed. The hardy shrubby kinds also grow best in peat-earth, and are very ornamental and curious; they are increased by seeds brought from the places of their natural growth, which do not vegetate until the second year; or by slips of the roots. The other species being either green-house or stove plants, require to be grown in pots, in a mixture of loam, peat, and sand; and cuttings of them root readily under a hand-glass.


Lin. syst. Pentándria, Pentagyния. All as in Aralia, but the petals cohere in the form of a calyptra at the apex, notwithstanding it ought perhaps still to be joined with Aralia.

§ 1. Leaves simple, undivided.

1 S. hu'ımile (Blum. bjjdr. p. 785.) shrub parasitical, diffuse; leaves simple, ovate-oblong, acuminated, distinctly serrated, coriaceous, glabrous; racemes terminal; flowers umbellate, tetrastichous. portlet S. Native of Java, in woods on Mount Salak.

Humble Sciodaphyllum. Shrub diffuse.

§ 2. Leaves simple, palmate-lobed.

2 S. pal'matóm (Blum. l. c. p. 785.) stem arborescent, prickly; leaves membranous, glabrous, palmately 5-parted: segments lanceolate, serrated from the middle to the apex; racemes axillary; flowers umbellate, with 8-12 stamens. portlet S. Native of Java, in humid parts of woods on the mountains, where it is called tkakura'niyu by the natives. Fruit hemispherical, 6 lines in diameter.

Palmate-leaved Sciodaphyllum. Tree.

§ 3. Leaves trifoliate.

3 S. sca'ndens (Blum. bjjdr. p. 787.) stem shrubby, scandent; leaves trifoliate; leaflets lanceolate, much acuminated, quite entire, coriaceous, glabrous; the middle one on a long petiole; racemes crowded, terminal, divaricate; flowers umbellate, pentandrous. portlet S. Native of Java, in woods on Mount Tjerantimaj.

Scendent Sciodaphyllum. Shrub cl.

4 S. parásiticum (Blum. bjjdr. p. 787.) stem shrubby, parasitical; leaves ternate: leaflets oblong, acuminated, obtuse at the base, remotely serrated, coriaceous, glabrous, nearly veinless; racemes axillary and terminal, solitary or twin; flowers umbellate, hexangular. portlet S. Native of Java, at the foot of Mount Salak, where it is called Ramo-giling hunte. Parasitic Sciodaphyllum. Shrub parasitical.

§ 4. Leaves digitate.

* East Indian species.

5 S. suba've'ne (Blum. bjjdr. p. 786.) stem fruticose; leaves digitate; leaflets 3-5, oblong, acuminated at both ends, coriaceous, nearly veinless; racemes crowded, terminal, diverging; flowers umbellate, pentandrous. portlet S. Native of Java, on Mount Salak, in woods, where it is called Ramo-hunte by the natives.

Nearly-veinless-leaved Sciodaphyllum. Shrub.

6 S. tomentósum (Blum. bjjdr. p. 877.) stem pubescent; leaves digitate; leaflets 5-7, oblong, acuminated, rounded at the base, shining above, but clothed with stellate tomentum beneath; racemes panicled, axillary, and terminal; flowers umbellate, pentandrous. portlet S. Native of Java, in woods on Mount Burangrang.

Var. β, farinósium (Blum. bjjdr. p. 785.) leaflets 7, ending in a long taper-point each. portlet S. Native of the west of Java, in mountain woods, where it is called Pangany tapok. Actinophyllum farinosum, Blum. cat. hort. butit. p. 43.

Tomentose Sciodaphyllum. Shrub.

7 S. elípticum (Blum. bjjdr. p. 787.) stem shrubby, scandent; leaves digitate; leaflets 5-7, rarely 3, elliptic, acutish at both ends, coriaceous, glabrous; panicle terminal, divaricate; flowers umbellate, pentandrous. portlet S. Native of Java, at the foot of Mount Salak, where it is called Ramo-gunti by the natives. Petals purplish.

Elliptical-leafletted Sciodaphyllum. Shrub el.

8 S. divarica'tum (Blum. bjjdr. p. 787.) stem arborescent, sometimes scandent; leaves digitate; leaflets 5-9, petiolulate, oblong, bluntish at both ends, glabrous, racemes panicled, terminal; flowers umbellate, pentandrous. portlet S. Native of Java, on the mountains in humid woods, in the province of Buitenzorg, where it is called Ramo-giling or Sanga-banaah. Actinophyllum divaricatum, Blum. cat. hort. butit. p. 42. and in flora 1825. p. 147.

Divaricate Sciodaphyllum. Shrub cl.

9 S. lu'cidentum (Blum. bjjdr. p. 877.) stem arborescent; leaves digitate; leaflets 11-12, oblong, acuminated, rounded at the base, coriaceous, glabrous; racemes crowded, terminal, divaricate, glabrous; flowers umbellate, pentandrous. portlet S. Native of Java, on the top of Mount Salak.

Shining Sciodaphyllum. Tree.

** American species.

10 S. Brónu'ii (Spreng. syst. 1. p. 953.) stem arborescent; leaves digitate; leaflets 7-11, nearly umbellate, petiolulate, oblong-lanceolate, glabrous, unequal; racemes compound, very long, nutant; flowers nearly capitate, pentandrous; corollas hemispherical. portlet S. Native of Jamaica, on the mountains in woods. Sciodaphyllum, Browne, lam. 195. t. 19. f. 1. Aralia Sciodaphyllum, Swartz, prod. 55. Hédera Sciodaphyllum, Swartz, fl. ind. occ. 1. p. 519. Schultes, syst. 5. p. 510. Vitis heptaphylla, Lin. mant. p. 212. Ex Smith, exclusive of the country. The central leaflets of the leaves are smallest. Anthers purple.

Browne's Sciodaphyllum. Clt. 1793. Tree 10 to 15 feet. 11 S. cónci'cum (Poir. dict. 6. p. 746.) stem shrubby; leaves digitate; leaflets 7-13, petiolulate, oblong, abruptly acuminated, coriaceous, glabrous, reticulately veined; racemes 2-3, rather velvety; flowers nearly capitate, pentandrous; corollas conical. portlet S. Native of Peru, in groves. Actinophyllum cóncicum, Ruiz et Pav. fl. per. 3. p. 74. t. 309. Heads of flowers about the size of a pea. Corollas of a whitish-red colour. Branches violaceous.

Conical-flowered Sciodaphyllum. Shrub 10 to 12 feet. 12 S. pénta'ndrum (Poir. dict. 6. p. 747.) stem shrubby, somewhat arborescent; leaves digitate; leaflets 7-11, petiolulate, oblong, acuminated at the apex, coriaceous, glabrous above, but beset with stellate pell beneath; racemes 1-3, woolly; flowers pentandrous, corollas conical. portlet S. Native of Peru. Actinophyllum pentándrum, Ruiz et Pav. fl. per. 3. p. 75. t. 311. Corollas of a whish purple colour; anthers yellow. Berry whitish, about the size of a cherry. Leaflets dark-brown beneath. Racemes pale-reddish.

Pentandrous Sciodaphyllum. Clt. 1820. Tree 18 to 20 ft. 13 S. angula'tum (Poir. dict. 6. p. 745. exclusive of Browne's synonyme,) stem arborescent; leaves digitate; leaflets 7-11, petiolulate, oblong, acuminated, concave at the base, shining above,
but clothed with powdery velvety rusty down beneath; racemes elongated, granular; flowers capitate, with 7-9 stamens; corollas obovate, angular, and truncate. \( g \). Native of Peru and New Granada, on shady hills. Actinophyllum angulatum, Ruiz et Pav. fl. p. 73. t. 307. H. B. et Kunth, nov. gen. amer. 5. p. 9. Heads of flowers about the size of a walnut, yellowish. Berry dark purple, cuneiform, angular. Styles 4-6.

**Angular Sciodaphyllum.** Tree 20 to 30 feet.

14 S. pedicella'tum (Poir. dict. 6. p. 746.) stem scandent; leaves digitate: leaflets 9-15, petiolulate, oblong, acuminate, somewhat sinuately undulated, and concave at the base, glabrous; racemes many; flowers pedicellate, articulate on the pedicels; corollas hemispherical. \( g \). Native of Peru, in groves at Manuna. Actinophyllum pedicellatum, Ruiz et Pav. fl. pers. 3. p. 73. t. 308. Stem rooting, filled with medullae; branches purplish. Racemes purplish, a foot long. Stamens 6-7. Berries angularly globose, greenish purple.

**Pedicellate-flowered Sciodaphyllum.** Shrub cl.

15 S. acuminat'us (Poir. dict. 6. p. 746.) stems scandent; leaves digitate: leaflets 7-11, petiolulate, oblong, obliquely acuminate, coriaceous, glabrous, reticulately veined; racemes 2-5, tomentose; flowers pentandrous and ovoid, capitate; corollas hemispherical, apiculate. \( g \). Native of Peru, in groves. Actinophyllum acuminatum, Ruiz et Pav. fl. pers. 3. p. 74. t. 310. Corollas yellow, disposed in heads, which are a little larger than a pea. Styles 5.

**Acuminated-leaved Sciodaphyllum.** Shrub cl.

16 S. anomala'tum (G. Don, in Loud. hort. brit. p. 112.) arboreus; leaves digitate: leaflets 5-7, oblong-lanceolate, acuminate at the apex, smooth and green on both surfaces: outer ones the smaller; umbels capitate, panicled; branches green and smooth. \( g \). S. Native of Trinidad, in woods. Carolinae insignis, Hortul. Flowers whitish yellow. Largest leaflets 1 foot long.

**Anomalous Sciodaphyllum.** Clt. 1817. Tree 20 feet.

17 S. quindiu'ense (D. C. prod. 4. p. 261.) stem shrubby, scandent; leaves digitate: leaflets 7, oblong, acuminate, quite entire, glabrous; umbels 4-flowered, racemose; flowers with 8-10 stamens. \( g \). Native of the Andes, about Quindiu, at the height of 3300 feet above the level of the sea. Aralîa Quindiuensis, H. B. et Kunth, nov. gen. amer. 5. p. 8. t. 417. f. 1. Styles 3-10, spreading. Petals cohering at the apex. Fruit 8-10-ribbed. Perhaps a species of Aralîa.

**Quindiu Sciodaphyllum.** Shrub cl.

Cult. All the species are worthy cultivating in gardens for the sake of their fine handsome large foliage. A mixture of loam, peat, and sand is a good soil for them; and they are easily increased by cuttings under a hand-glass in sand, placed in a moderate heat.

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**XI. HE'DERA (a name for which many etymologies have been offered. The best explanation is, that it has been derived from hêdru, cord in Celtic, lierre in French. The English name of ivy is derived from the Celtic word im, green, from its being always green. The word ivi is given to Táxus by the French, hence also the English name of the genus Yew.)** Swartz, fl. ind. occ. p. 518. D. Don, prod. nep. p. 186. Gertrn. fruct. 1. t. 26. D. C. prod. 4. p. 261.—Araliâ sect. Gymnapetra, Blum. bijdr. p. 671.—Hédera and Aralîa species Lin. and all other authors.

**Lin. syst. Pent-Deccandria, Pent-Decagynia.** Margin of calyx elevated or toothed. Petals 5-10, not cohering at the apex in the form of a calyptra. Stamens 5-10. Styles 3-10, conniving, or joined in one. Berry 5-10-celled.—Climbing or erect shrubs. Leaves simple or compound. Flowers umbellate or capitate.

§ 1. Leaves simple, undivided, or lobed.

1 H. Herlix (Lin. spec. 292.) stems climbing, throwing out roots from the side by which it is placed to any substance; leaves coriaceous, glabrous, shining, with 5 angular lobes; those on the old upright branches, which form the tops of the plants, ovate, acute, quite entire; umbels simple, pubescent. \( g \). Native of Europe. Common ivy is a valuable ornamental evergreen climbing shrub. It is useful for covering walls and sides of houses, or training into fancy shapes, as of human figures, &c. on skeletons of wire-work, or trained up to a stake, so as to form a standard; but when ivy has reached to the top of any support, the branches shorten, and become woody, forming themselves into large bushy heads, and the leaves become entire and more of an oval shape, and not divided into lobes like the lower ones, and in this state they produce flowers at the end of every shoot. The berries are black at maturity. The flowers are yellowish, and appear late in the season, and in consequence is much resorted to by bees and flies, when little other food is to be had. The berries increase during the winter, are full formed in February, and ripen in April; furnishing food for wild pigeons, blackbirds, thrushes, &c. in the spring. Blackbirds, and several other birds, build their nests in the stumps of ivy twigs. Sheep are fond of the leaves, especially during severe weather. The ancients held ivy in great esteem, and Bacchus is represented crowned with it to prevent intoxication; and Homer describes his heroes as drinking out of a cup made of the wood. Haller says, that the leaves are given in Germany as a specific in atrophus in children. Common people apply them to issues and corns. The berries are aperient and emetic. The wood is soft and porous, so as to transmit liquids if turned of a sufficient degree of thinness. The roots are used by leather-cutters to whet their knives upon. The whole plant is rather aromatic; and a very fragrant resin exudes from the old stems when bruised. The specific name Hélix is derived from vixea, vixil, to encompass or turn round; in reference to the twining stems.

**Var. β, Canariénisis (D. C. prod. 4. p. 261.) pedicels clothed with stellate down; floral leaves ovate; fruit black; leaves of the rooting branches 5-lobed, with white veins. \( g \). Native of Europe, in woods, hedges, and on old buildings. Hédera Hélix, Lin. spec. 292. Smith, engl. bot. t. 1267. Curt. lond. fasc. 1. t. 16. Fl. dan. t. 1027. Bull. fr. t. 135. Drev. and Hayne, pl. europ. t. 66. There is a variegated-leaved variety of this in the gardens.

**Var. γ, chryscocarpa (D. C. prod. 4. p. 261.) pedicels beset with lepidopted pubescence; floral leaves subcordate; those of the creeping branches 5-lobed, larger than those of the common ivy; fruit red. \( g \). Native of the Canary Islands. Hédera Canariensis, Willd. in berl. mag. 2. p. 170. t. 5. f. 1. Schultes, syst. 5. p. 508. In the gardens this is called Irish Ivy.


2 H. corima'osa (Choisy, mss. in herb. D. C. ex prod. 4. p. 262.) stem arboresous, bushy; leaves cordate, acute, bluntly 5-angled, when young velvety on the nerves beneath, but in the adult state glabrous on both surfaces; flowers corym-
ARALIACEÆ. XI. Hedera.

9. H. racemosa L. Native of the Canary Islands, where it has been probably introduced, and is called Pipto de St. Augustin. This is probably nothing but the Irish ivy of the gardens.


11. H. multiflora (D. C. prod. 4. p. 262.) stem arborescent, unarmed; leaves long petiolar, oblong-elliptic, acuminate, somewhat cuneate at the base, quite entire, membranous, glabrous, with pinnate nerves: the 2 lower nerves remote from the rest, parallel with the margin, and rising from an acute angle; racemes panicked, diverging; heads globose. H. Native of Brazil, where it was collected by Schott. Aralia multiflora, Pohl, in litt.

Many-flowered I. Tree 10 to 12 feet.


Many-flowered I. Tree 10 to 12 feet.

13. H. ovata (Wall. cat. no. 4911.) stem unarmed; leaves ovate, elliptic, quite entire, coriaceous, ending in a short blunt point, rusty beneath; peduncles axillary, solitary, and terminal, umbellate; umbels many-flowered. H. Native of Madras.

Ovate-leaved I. Shrub.


Ovate-leaved I. Tree or shrub.

15. H. avicennifoá (D. C. prod. 4. p. 263.) arborescent; leaves oblong-lanceolate, acute at the apex, and acutish at the base, quite entire, coriaceous, glabrous above, but clothed with white tomentum beneath; coriaceous; flowers capitate. H. Native of South America, in the province of Quito, between Tambo de Burgay and Delay, at the altitude of 4000 to 5000 feet. Aralia avicenniifolia, H. B. et Kunth, nov. gen. amer. 5. p. 2. t. 2. Aralia tarchanathiifolia, Willd. in Schultes, syst. 6. p. 698. Styles 5-9, short, connivent. Avicennia-leaved I. Tree.

16. H. cupánènès (D. C. l. c.) stem arborescent, unarmed; leaves ovate, acuminate, cuneate at the base, quite entire, somewhat 3-nerved, membranous, glabrous, shining. H. Native of Cumaná, in shady places at Mount Cocolar, at the elevation of 1200 feet. Aralia Cumananensis, H. B. et Kunth, nov. gen. amer. 5. p. 3. Flowers and fruit unknown.

Cumanan I. Tree.


Catalepa-leaved I. Tree or shrub.

18. H. septemérivia (D. C. l. c.) stem arborescent? unarmed; leaves ovate, acuminate, rounded at the base, 7-nerved, rather coriaceous, glabrous; racemes panicked; heads globose. H. Native of New Granada, at the altitude of 4000 feet. Aralia septemérivia, H. B. et Kunth, nov. gen. amer. 5. p. 3. Said to be hardly distinct from H. capitata. Style 1.

Pendulous-umbellate I. Cht. 1824. Tree 12 to 15 feet.

6. H. Umbellata (D. C. prod. 4. p. 262.) stem frutescent, unarmed; leaves ovate, lanceolate, acuminate, rarely serrate; peduncles umbellate, trifid; umbels capitate, nearly globose. H. Native of Jamaica, on the mountains. Poéodo-santumum Aboimense, Rumph. amb. 2. p. 54. t. 12. Aralia umbellata, Lam. dich. 1. p. 226. Schultes, syst. 6. p. 697. There is a yellow gum issues from this tree, which becomes blackish on drying, and is sweet scented, which is called Saruru in Aboimana. Flowers whitish.

Umbelliferous I. Tree.

7. H. cuneata (D. C. prod. 4. p. 262.) stem arborescent, unarmed; leaves petiolate, broadly oblong, acute, quite entire, cuneate at the base, membranous, glabrous, with pinnate nerves: the 2 lower nerves parallel with the margins, rising from an acute angle; umbels terminal, of many rays; heads half globose. H. Native of Brazil, where it was collected by Schott. Aralia umbellata, Pohl, in litt. but not of Lam.

Cuneate-leaved I. Tree small.

8. H. Nutans (Swartz, fl. ind. occ. 1. p. 514.) stem arborescent, unarmed; leaves elliptic, acutish, coriaceous, entire; umbels nodding, hemispherical; peduncles erectish. H. Native of the south of Jamaica, on the tops of the Blue Mountains. Very like H. pendula, but the peduncles are shorter, the peduncles shorter, the petioles reflexed, and the petals reflexed. Style short, 5-angled.

Drooping-umbellate I. Tree 4 to 15 feet.

9. H. ramiflora (D. C. prod. 4. p. 262.) stem arborescent, unarmed; leaves petiolate, acute, quite entire, membranous, glabrous, hardly cuneate at the base, with pinnate nerves: the 2 lower nerves parallel to the margin, and rising from an acute angle; racemes few, rising from the old branches; umbels semiglobose. H. Native of Brazil, where it was collected by Schott. Aralia ramiflora, Pohl, in litt. Flowers 15-16 in each umbel, pedicellate.

Branch-flowered I. Tree 10 to 15 feet.


Many-spined I. Tree.


Tree Iy. Tree 10 to 15 feet.

Seven-nerved-leaved Ivy. Tree or shrub.

19 H. Turbacinis (D. C. l. c.) stem arboreous; leaves on long petioles, acute at the base, membranous, glabrous, of one colour; some of them are undivided, and others are trifid at the apex: with the lobes or segments entire and acuminate: having the recesses between the lobes rounded. \( H. \) S. Native of New Granada, in hot places near Turbaco, where it is called Arbol de Guaco. Aralia Turbacensis, H. B. et Kunth, nov. gen. amer. 5. p. 3. Flower and fruit unknown.

Turbaco Ivy. Tree 40 to 50 feet.

20 H. discolor (D. C. l. c.) stem arboreous; leaves petiolate, rather coriaceous, glabrous, rounded at the base, shining above, and of a rusty-purplish colour beneath: some of them undivided and 1-nerved, and others are 2-nerved and trifid at the apex: having the lobes or segments somewhat acuminate, the intermediate one the longest; racemes panicked; heads globose. \( H. \) S. Native of New Granada. Aralia discolor, H. B. et Kunth, nov. gen. Amer. 5. p. 4. Flowers and fruit not sufficiently known.

Discoloured-leaved Ivy. Tree or shrub.

21 H. argentina (D. C. l. c.) stem arboreous, unarmed; leaves petiolate, coriaceous, glabrous and shining above: but marked by silvery dots beneath: some of which are undivided and 1-nerved, and others are 2-nerved and trifid at the apex: having the lobes or segments somewhat acuminate: the intermediate lobe remotely serrated; racemes panicked; heads of flowers globose. \( H. \) S. Native of South America, along with H. argentina. Aralia argentina, H. B. et Kunth, nov. gen. Amer. 5. p. 5. Styles 3, convining. Petals white.

Silvery-dotted Ivy. Tree 15 to 20 feet.

22 H. crassineria (D. C. l. c.) stem arboreous; leaves petiolate, acute at the base, coriaceous, glabrous above and shining, densely beset with rusty dots beneath: some entire, ovate-oblong, and others 3-lobed and somewhat acuminate; racemes panicked; heads globose. \( H. \) S. Native of South America, with H. argentina. Aralia crassinervia, H. B. et Kunth, nov. gen. Amer. 5. p. 5. Styles 3-6, convining.

Thick-nerved-leaved Ivy. Tree.

23 H. obtusifolia (D. C. l. c.) stem arboreous; leaves petiolate, truncate roundly at the base, 5-nerved, coriaceous, glabrous and shining above, but beset with fuscose dots beneath: some entire, ovate-oblong, and others 3-lobed and somewhat acuminate; racemes panicked; heads of flowers elliptic-globose. \( H. \) S. Native of temperate places towards Loja, at the altitude of 3300 feet. Aralia obtusifolia, H. B. et Kunth, nov. gen. Amer. 5. p. 5. Willd. in Schultes, syst. 6. p. 699. Petals white, glabrous. Styles 4, convining.

Blunt-nerved-leaved Ivy. Tree or shrub.

24 H. angulatis (D. C. prod. 4. p. 263.) stem arboreous; leaves 5-angled, obtuse, tomentose beneath; flowers capitata. \( H. \) S. Native of South America, Humb. et Bonpl. Aralia angulatiss, Willd. in Schultes, syst. 6. p. 698.

Angular-leaved Ivy. Tree.

25 A. plataniifolia (D. C. l. c.) stem arboreous; leaves petiolate, coriaceous, glabrous above and shining, but clothed with rusty tomentum beneath, truncate at the base, 7-nerved, 7-cleft at the apex: lobes or segments glabrous, acuminate, quite entire; racemes panicked; heads of flowers globose. \( H. \) G. Native of Peru, on the western declivity of the Andes. Aralia plataniifolia, H. B. et Kunth, nov. gen. Amer. 5. p. 6. t. 415. Willd. in Schultes, syst. 6. p. 699. Tree 15-20 feet. Styles 4-5. Petals white, tomentose on the outside.

Platanaus-leaved Ivy. Tree 15 to 20 feet.

26 H. acerifolia (D. C. prod. 4. p. 264.) stem arboreous; leaves 5-lobed, acuminate, quite entire, glabrous, shining lepidodendron and of a different colour beneath. \( H. \) S. Native of South America, Humb. and Bonpl. Aralia acerifolia, Willd. in Schultes, syst. 6. p. 699. The rest unknown. This is the same as H. argentina, according to Sprengel.

Maple-leaved Ivy. Tree.

27 H. jatrophiaphylla (D. C. l. c.) stem arboreous; leaves petiolate, coriaceous, glabrous above, but clothed with fuscous tonmentum beneath, corolate at the base, 7-nerved, deeply 7-cleft: segments or lobes lanceolate-oblong, acuminate, narrowed at the base and quite entire. \( H. \) S. Native of New Granada. Aralia jatrophiaphylla, H. B. et Kunth, nov. gen. Amer. 5. p. 6. Leaves almost like those of Manihot. This species approaches very near H. plataniifolia.

Jatropha-leaved Ivy. Tree.


Reticulated-leaved Ivy. Tree.

29 H. cheirophylla (D. C. l. c.) stem unknown; leaves palmately 5-cleft, cream-coloured beneath: lobes or segments acuminate, toothed; heads of flowers disposed in racemes, clothed with villous tomentum. \( H. \) S. Native of South America. Aralia cheirophylla, Spreng. syst. 1. p. 955.

Hand-leaved Ivy. Tree or shrub.

30 H. floribunda (D. C. l. c.) stem arboreous; leaves petiolate, glabrous above, but clothed with canescent tomentum beneath, 7-9-parted: segments or lobes acuminate, remotely and sharply toothed; racemes panicked; heads elliptically globose. \( H. \) S. Native of New Granada, in temperate parts, at the altitude of 3600 feet. Aralia floribunda, H. B. et Kunth, nov. gen. Amer. 5. p. 6. t. 416. Aralia Umboldti pii, and A. incisa, Willd. in Schultes, syst. 6. p. 699. ex Kunth. Styles short, convining, somewhat diverging after flowering. Leaves so deeply parted as nearly to be compound.

Bundle-flowered Ivy. Tree 15 to 20 feet.


Climbing Ivy. Shrub cl.

§2 Leaves compound; leaflets divided to the top of the petiole, digitately or palmately disposed.

32 H. ferruginea (D. C. l. c.) stem arboreous; leaves on long petioles, digitate; leaflets 7, petiolate, oblong, acuminate and cuspidate, rounded at the base, quite entire, coriaceous, glabrous above, but clothed with fine tomentum beneath; when young clothed with rusty wool; racemes panicked; heads somewhat elliptically globose. \( H. \) S. Native of South America, in the province of Quito, between Paramo de Saraguru and Ota, at the altitude of 3600 feet. Aralia ferruginea, H. B. et Kunth, nov. gen. Amer. 5. p. 7. Willd. in Schultes, syst. 6. p. 701.


33 H. Xalapensis (D. C. l. c.) stem arboreous; leaves on long petioles, digitate; leaflets 5-7, glabrous, shining above, but dotted beneath, lanceolate-oblong, acute, narrowed at the base, and quite entire, rather coriaceous; racemes panicked; heads of flowers nearly globose. \( H. \) G. Native of Mexico, on the mountains near Xalapa, at the altitude of 2000 feet. Aralia Xalapensis, H. B. et Kunth, nov. gen. Amer. 5. p. 8. Aralia digitata, Willd. in Schultes, syst. 6. p. 701. ex Kunth. Petals glabrous. Styles joined in one.
ARALIACEÆ.

34. **Xalaxa Ivy. Tree.**
35. **H. Echinophyllum (Cham. et Schleg. in Linnaea. 5. p. 174.)** leaves membranous, smoothish above, except on the middle nerve, but clothed with lax stellateomentum beneath; floral leaves entire and lobed: lower leaves compound, of 5 nearly cuneate-ovate, acuminate leaflets; heads of flowers globose. ɣ S. Native of Mexico in woods near Hacienda de la Laguna. Middle leaflet a foot long and 7½ inches broad.

**Globe-thistle-like Ivy.** Shrubs.

36. **H. undulatum** (Hamilt. in D. Don, prod. fl. nep. p. 187.) stem arborescent, unarmèd; leaves digitate; leaflets 7, radiate, petiolate, elliptic-oblong, acuminate, coriaceous, quite entire, glabrous, glaucous beneath, round at the base; umbels glabrous, racemously panicled. ɣ G. Native of Nipal, at Narain-Hetty, where it is called Cailushi by the natives.

**Tall Ivy.** Tree.

37. **H. subcordatum** (Wall. cat. no. 4916.) stem shrubby; leaves on long petioles, digitate; leaflets 5-6, petiolate, smooth, oblong-lanceolate, acuminate, undulated; paniculate; umbellules few-flowered: lateral ones opposite: terminal ones umbellate. ɣ G. Native of Silhet. Fruit oblong. Reticulated.

**Undulate-leaved Ivy.** Shrubs or trees.

38. **H. esculifolia** (Wall. cat. no. 4913.) stem shrubby; leaves digitate; leaflets 7, obvolute-ovate, acuminate, clothed with rusty pubescence beneath: outer ones the smallest, all serrated; racemes lateral; umbellules pedunculate, many-flowered. ɣ H. Native of Nipal.

**Horsetail-leafed Ivy.** Shrubs or trees.

38. **H. tomentosa** (Hamilt. in D. Don, prod. fl. nep. p. 187.) stem arborescent, unarmèd; leaves digitate; leaflets 7-9, petiolate, oblong-lanceolate, acuminate, coriaceous, quite entire, acute at the base, densely clothed with tomentum beneath, as well as the peduncles, petioles, and younger stems; umbellules rising in clusters, pedunculate. ɣ F. Native of Nipal.

**Tomentose Ivy.** Tree.

39. **H. subcordatum** (Wall. cat. no. 4917.) stem shrubby; leaves on long petioles, trifoliolate; leaflets petiolate, membranaceous, ovate, somewhat cordate at the base and acuminate at the apex; panicles numerous; flowers disposed in long slender racemes. ɣ G. Native of Silhet. Flowers small, spreading.

**Subcordate-leaved Ivy.** Shrubs or trees.

40. **H. floribunda** (Wall. cat. no. 4912.) stem beset with short, conical prickles; leaves digitate; leaflets 7, on long petioles, elliptic, acuminate, clothed with rusty tomentum beneath while young; racemes long; umbellules on long peduncles, rusty as well as the rachis. ɣ G. Native of Silhet.

**Bulbed-flowered Ivy.** Shrubs or tree.

41. **H. aculeata** (Hamilt. in D. Don, prod. fl. nep. p. 187.) stem arborescent, prickly; leaves digitate; leaflets 7, radiate, elliptic-oblong, acuminate, serrated, puberulous beneath, acute at the base; umbellules tomentose, racemose. ɣ G. Native of Nipal, at Narain-Hetty. Tree tall and thick. Flowers white.

**Prickly Ivy.** Cl. 1820. Tree.

42. **H. teretistalcatra** (Vahl. symb. 3. p. 42.) stem arborescent; leaves petiolate, digitate; leaflets 5-7, radiate, petiolate, elliptic, quite entire; panicule diffuse, terminal; umbellules disposed in racemes. ɣ S. Native of Ceylon, Penang, Silhet, and Nipal, in groves and woods. Arâlia digitata, Roxb. Pepl. 6. Style 1. Fruit angular. Allied to Unìjala of Rheed. Hort. maj. 7. t. 28.

**Torpentine Ivy.** Tree.

43. **H. rugosa** (D. C. prod. 4. p. 267.) stem shrubby, parasitical; leaves digitate; leaflets 5-7, ovate, or oval-oblong, acuminate, obliquely attenuated at the base, quite entire, rugose, clothed with brown stellate tomentum beneath; petiole terminal, very long; flowers racemose. ɣ S. Native of Java, in woods on Mount Gede. Arâlia rugosa, Blum. bijdr. p. 871.

**Wrinkled-leaved Ivy.** Shrubs.

44. **H. simillima** (D. C. l. c.) stem shrubby; leaves digitate; leaflets 5-6, elliptic-oblong, acuminate, rounded at the base, remotely serrated, reticulate, wrinkled and rather downy from stellate pili beneath; petiole terminal, divaricate; flowers racemose. ɣ S. Native of Java, in woods on the mountains. Allied to H. rugosa. Arâlia simillima, Blum. bijdr. p. 171.

**Very similar Ivy.** Shrubs.

45. **H. aromatica** (D. C. l. c.) stem shrubby; leaves digitate; leaflets 5-7, elliptic-oblong, acuminate, for the most part obliquely rounded at the base, glabrous; petals corymbose, lateral; flowers umbellate. ɣ S. Native of Java, on Mount Salak and Gede, &c. where it is called Pangang-pag. Arâlia aromatica, Blum. l. c. p. 871.

**Var. ß: leafless, longer, serrated. ɣ ß. Native of Java, on Mount Salak, where it is called Kirengdong. Blum. l. c.

**Aromatic Ivy.** Shrubs.

46. **H. leptocarpa** (D. C. l. c.) stem shrubby; leaves digitate; leaflets 7-9, oblong-lanceolate, long-acuminated, nearly veinless, shining above; racemes crowded, terminal; flowers umbellate. ɣ S. Native of Java, in the higher woods, on the mountains of Barangrang and Tjerimai. Arâlia dispersa, Blum. l. c. p. 872.

**Yellowish Ivy.** Shrubs.

47. **H. dseirolema** (D. C. prod. 4. p. 256.) stem shrubby, climbing; leaves digitate; leaflets 5-7, oblong, acuminate, rounded at the base, sharply serrated, glabrous; raceme terminal, scurvy; flowers umbellate; fruit 2-seeded. ɣ S. Native of Java, on Mount Gede, where it is called Pangang-divaricus. Arâlia lepidola, Blum. bijdr. p. 872. Perhaps a species of Panax.

**Two-seeded Ivy.** Shrubs.

48. **H. glemorula** (D. C. l. c.) stem arborescent, spinescent; leaves digitate; leaflets 5-7, rarely 3, oblong, acuminate, acute at the base, serrulately towards the apex, smoothish; petiole terminal, very long; flowers glomerulate; ovaries 2-seeded. ɣ S. Native of Java, on Mount Gede, where it is called Pangang. Arâlia glemorula, Blum. bijdr. p. 872. Perhaps a species of Panax.

**Glomerulate-flowered Ivy.** Tree.

49. **H. heterophylla** (Wall. cat. no. 4919.) stem shrubby; leaves digitately compound, with the divisions quinate or terminal; leaflets oval-oblong, acuminate, glabrous; umbellules disposed in racemes, many-flowered, with a woolly bractea at the base of each peduncle; rachis woolly. ɣ S. Native of Penang. Fruit angular.

**Variable-leaved Ivy.** Tree or shrubs.

§ 3. **Leaves compound, pinnate.**

50. **H. paraëtica** (D. Don, prod. fl. nep. p. 188.) stems rooting, parasitical; leaves pinnate; with 5, elliptic, acute, quite entire, nearly sessile, coriaceous, glabrous leaflets, which are glaucous beneath; umbels glabrous, racemose. ɣ G. Native of Nipal, at Narain-Hetty. Arâlia parasitica, Hamilt. miss.

**Parasitical Ivy.** Shrub climbing and rooting.

51. **H. glaucà** (Wall. cat. no. 4921.) stem shrubby, much branched; leaves pinnate; leaflets 5, elliptic-lanceolate, acuminate, glaucous beneath, glabrous; umbellules terminal, solitary or twin, many-flowered. ɣ G. Native of Nipal, at Kamaon. Style simply.

**Glaucescent-leaved Ivy.** Shrubs.

52. **H. jackià**; leaves pinnate; with many pairs of opposite, oblong-lanceolate, petiolate, quite entire, smooth leaflets, which are oblique at the base; rachis jointed; umbels composed...

Cult. All the species of Ivy are of easy culture. The common ivy and its varieties only require to have slips of them planted where they are intended to remain; or to be grown in pots until they are the size required, and then finally planted out: the other hardy species should be treated in a similar manner. The greenhouse and stove kinds will grow in almost any kind of soil, but the lighter the better; and cuttings of them are easily rooted under a hand-glass.

XII. PARATROPIA (σαράπερνεν, paratropo, a bending or crooking; the petioles are knobbed and bent). D. C. prod. 4. p. 265.—Arália, sect. 3. Paratropia, Blum. bijdr. p. 875.

Lin. syst. Pentándria, Monogynía. All as in Arália or Hedera, but differs in the stigmas being sessile, at first approximate, and immersed in an epigynous disk. Shrubs or trees. Leaves compound. Flowers panicked or racemose.

1 P. nodosa (D. C. prod. 4. p. 265.) stem arborescent; leaves impari-pinnate; with many pairs of leaflets; leaflets on short petioles, crenated, glabrous: lower ones roundish-ovate, the rest oblong; panicle terminal, very long. \(\phi\). S. Native of Java, in woods on the mountains in the western provinces, where it is called Kilanget. Arália nodosa, Blum. l. c. Common petioles 5-6 feet long, bent, articulated when dried. Panicle 4-5 feet long. Flowers pendentuous. Nodose-petioled Paratropia. Tree.

2 P. pergamæca (D. C. prod. 4. p. 266.) stem shrubby, parasitical; leaves digitate; leaflets 6-12, oval, acute, rounded at the base, in substance like parchment, glabrous; racemes crowded, terminal, scurfy; flowers subfasciculate. \(\phi\). S. Native of Java, on the higher declivities of Mount Gede. Arália pergamæca, Blum. bijdr. 875. Parchment-leaved Paratropia. Shrub.

3 P. kónda (D. C. l. c.) stem arborescent; leaves digitate; leaflets 6-12, oblong, acute, bluish at the base, and acutish at the apex, in substance like parchment, glabrous; racemes crowded, terminal, divaricate, rather scurfy; flowers umbellate, ovoid-capsulate. \(\phi\). S. Native of the western parts of Java, in woods on the mountains, where it is called Songa-Poana. Arália rigida, Blum. l. c. Var. \(\beta\); racemes incurved, densely clothed with scurf. \(\phi\). S. Native of Java, in the province of Bantam, where it is called Tulak-Tangol. Blum. l. c. Stiff Paratropia. Tree.

4 P. longifóliá (D. C. l. c.) stem arborescent, scandent; leaves digitate: leaflets 9-11, rather large, oblong, acute, rounded at the base, glabrous; racemes crowded, densely clothed with tomentum, terminal, straight; flowers umbellate, with 7-9 stamens. \(\phi\). S. Native of Java, in mountain woods, where it is called, along with many other Araliaceous plants, Ramo-gil ing. Sciodendrimum longifólium, Blum. bijdr. p. 876. Long-leaved Paratropia. Shrub cl.

5 P. Canto nénsis (Hook. et Arn. in Beech. voy. pt. bot. 189.) stem arborescent; leaves on long petioles, digitate: leaflets 5-9, elliptic, acutish at the base, acuminate at the apex, rather coriaceous, glabrous; racemes terminal, furfuraceous; flowers in fascicles, decandrous; stigma sessile, 10-cleft. \(\phi\). G. Native of China, about Canton. Arália octophylla var. Canto nénsis, Lour. coch. p. 187. This species comes very near P. pergamæca. Canton Paratropia. Tree 10 feet.

Cult. Any light soil will suit the species of Paratropia; and cuttings of them will be easily rooted under a hand-glass in heat.

XIII. ARTHROPHYLLUM (from ἀρθρός, arthon, a joint, and φύλον, phyllon, a leaf; in reference to the jointed petals). Blum. bijdr. p. 878. D. C. prod. 4. p. 266.


2 A. diversi-fólium (Blum. l. c.) leaves impari-pinnate, terminate or bipinnate; leaflets oblong, somewhat acuminate, oblique at the base, membranous. \(\phi\). S. Native of Java, in woods, on Mount Salak. Diverse-leaved Arthrophyllum. Tree.

3 A. ellipti-foleum (Blum. l. c.) leaves bipinnate: leaflets elliptico-oblong, acute, oblique at the base, coriaceous. \(\phi\). S. Native of Java, in mountain woods. Elliptico-leafletted Arthrophyllum. Shrub or tree.

Cult. See Paratropia above for culture and propagation.

Order CXXV. HAMAMELIDÆ (plants agreeing with Hamamelis in important characters). R. Br. desc. pl. chin. 1818. p. 3. Adr. Juss. dict. class 8. p. 28. Sweet. hort. brit. 371. D. C. prod. 4. p. 267.—Pet. Th. veg. austr. ed. 2. p. 31. Tube of calyx adhering to the ovarium more or less, 4-lobed (f. 69. a. g.) or repandly toothed. Petals 4 (f. 69. c. i.), linear, elongated, inserted in the calyx, alternating with the calyceine lobes, involutely valvate in restoration: rarely wanting, but probably sometimes changed into stamina. Stamens inserted with the petals, and double their number (f. 69. b.); those alternating with the petals are fertile, and those opposite the petals are sterile and destitute of anthers (f. 69. g.); filaments all short. Fertile anthers inserted by the base, 2-celled, dehiscing in various ways. Ovarium adnate at the base, 2-celled: cells 1-seeded; ovula pendulous. Styles 2 (f. 69. c), very rarely 3. Capsule adnate at the base to the permanent tube of the calyx, 2-celled, 2-valved; valves bifid at the apex. Seed pendulous, with a superior hyalum. Albumen corneous. Embryo straight, slender, with a superior radicle; and foliaceous flat cotyledons, or having their margins rather involute.—Shrubs. Leaves alternate, bipinulate, petiolate, feather-nerved, entire or sinually toothed. Flowers axillary, nearly sessile, in fascicles, usually bracteate, sometimes dioecious or polygamous.

Many of the genera of this order were formerly placed among the Berberidæ and Amentiæceae, but were constituted a distinct order by R. Brown in 1818; but the place which it should hold in the natural system is still doubtful. According to R. Brown, it is intermediate between Bruniæceae and Mâlæae*, (a genus which should have been placed in Alangiæceae, vol. ii. p. 806. But according to Pet. Thouars, it comes nearest to Rhénæceae, and according to Juss. to Haloragiæae. But afterwards it was
placed by R. Brown and Pet. Thouars near Araliaceae and Cornaceae. The order differs from Alangiaceae in the fruit being capsular, not baccate; and from Bruniaceae in the parts of the flowers being quaternary, in the stamens being double the number of the petals, in the insertion and dehiscence of the anthers, and in the cells of the ovary being 1-seeded, &c.; it differs from Araliaceae and Cornaceae in the fruit being capsular, in the number of the parts of the flower, and in the structure of the anthers; and from Amentaceae in the flowers of most of the genera being complete; but the genus Fothergilla agrees with Amentaceae in habit, and in the want of petals; but perhaps in this genus the outer series of the stamens represent the petals.


Lin. syst. Octandria, Monogynia. Tube of calyx adnate to the ovary: limb short, bluntly 6-8-toothed. Petals 6-8, linear, alternating with the teeth of the calyx. Stamens 8, adnate to the epigynous disk, and inserted at the top of the calyx; anthers long, linear. Ovarium 2-celled, biovulate. Style short; stigma 4-toothed. Drupe oval, rather fleshy, umbilicate from the teeth of the calyx: containing a 2-celled nucleus. Seed compressed. Albumen fleshy. Embryo with a superior radicle and flat cotyledons.—A small Asiatic tree. Leaves alternate, exstipulate, petiolate, unequally cordate, acuminate, entire, glabrous, except the nerves on the under side. Flowers on axillary peduncles, somewhat corymbose, whitish or yellowish.

1. *Begonia-leaved Marlea.* Fl. June, July. Cht. 1824. Shrub 5 to 6 feet. Cult. This shrub is easily increased by cuttings in sand under a hand-glass. The soil best adapted for it is a mixture of sandy loam, and peat.

**Synopsis of the genera.**

**Tribe I.**

**Hamamelidæ.** Petals 4 (f. 69. c.), Stamens 8, 4 fertile (f. 69. b.), and 4 sterile (f. 69. g.). Anthers dehiscing by a valve.

1. **Hamamelis.** Calyx 4-lobed, furnished with 3-4 scales on the outside. Ovarium ending in 2-3 styles at the apex (f. 69. l.). Capsule coriaceous, 2-celled (f. 69. c.).

2. **Dicoryphæ.** Calyx 4-lobed. Styles 2. Fruit inclosed in the circumcised calyx, umbilicate at the apex, 2-horned, 2-seeded.


**Tribe II.**

**Fothergillæ.** Petals wanting. Stamens 24, all fertile. Anthers opening by a semicircular chink at the margin.


**Hamamelidæ.** (shrubs agreeing with the genus Hamamelis in important characters). D. C. prod. 4. p. 268. Petals 4. Stamens 8, 4 of which are sterile. Anthers dehiscing by a valve.

1. **Hamamelis (ομοφυλακ, homonelis, a name under which Atheneæus speaks of a fruit resembling an apple; it comes from ομος, omos, like, and μυκης, meleas, an apple-tree; but the present genus is not in any way analogous to the apple).** Lin. gen. no. 169. Juss. gen. p. 288. Lam. ill. t. 88. f. 1. D. C. prod. 4. p. 268.—Triilopus, Milh. act. acad. nat. cur. 8. appendix.

Lin. syst. Tetradria, Digynia. Calyx 4-lobed, adhering to the ovary at the base, furnished with 2-3 scales on the outside. Petals 4 (f. 69. a), long, tongue-shaped, alternating with the teeth of the calyx (f. 69. c). The 4 stamens alternating with the petals, fertile (f. 69. b), with very short filaments: adnate 2-celled anthers; the cells opening by a vertical valve. The 4 sterile stamens (f. 69. g) with very thick filaments and round anthers, one in front of each petal. Ovarium free at the apex, ending in 2 (f. 69. l), rarely in 3 short styles. Capsule coriaceous, half free, 2-celled, 2-valved at the apex; valves biform. Arils 2 in each capsule, coriaceous, 1-seeded, opening by 2 elastic valves above. Seed oblong, shining, with a superior hyalum; albumen fleshy. Embryo with a superior radicle and flat cotyledons.—Small American or Asiatic trees. Leaves alternate, on short petioles, bistipulate, ovate or cuneate, feather-nerved, nearly entire. Flowers nearly sessile, disposed in clusters in the axils of the leaves, girded by a 3-leaved involucrem. Petals yellow.

1. **Hamamelis Virginica** (Lin. syst. nat. p. 535.) leaves obovate, acutely toothed, with a small coriaceous receptacle at the base. 2. **H.** Native of North America, from Canada to Florida, in stony and dry situations, but frequently near water. Mill. ill. t. 10. Duham, arb. 1. t. 114. Schkuhr, handb. t. 27. Lod. bot. cab. 598. Guipp. abb. holzart. t. 75. Rafn. med. bot. 1. t. 45.—Catesb. car. 3. t. 2. This singular shrub, which grows about 10 or 12 feet high, begins to show its yellow flowers in autumn, when all others have dropped their leaves, continues to flower all winter, and forms its fruit the spring following. The flowers are either polygamous, varying to dioecious, monococious, and androgynous; hence the names of Hamamelis dioica, monoica, and androgyna; Wilt. car. 255. The Indians consider this tree as a valuable article in their Materia Medica. They apply the bark, which is sedative and discutient, to painful tumours and external inflammations. A cataplasm of the inner rind is found to be very efficacious in removing painful inflammations of the eyes.

Var. 3. **parisfolia** (Nutt. gen. amer. p. 107.) leaves smaller, oblong-obovate, upper part undulate and grossly crenated: the under side pubescent, rather hairy; segments of the calyx oblong; stamens and perigynous filaments often nearly equal. 3. **H.** From the mountains of Pennsylvania.


2. **H. macrophylla** (Pursh. fl. sept. amer. p. 116.) leaves nearly orbicular, cordate, coarsely and bluntly toothed, sebaceous from dots beneath. 3. **H.** Native of North America, in the
western part of Georgia; and of North Carolina, on the Catawba Mountains. The large leaves punctuated on their under side, with rough tuberules and other marks, give sufficient reason for considering it a distinct species.

**Large-leaved Witch-hazel.** Fl. May, Nov. Ct. 1812. Shrub 10 to 12 feet.

3 **H. Pea'sca** (D. C. prod. 4. p. 268.) leaves oval, acuminate, reeledly toothed above, cuneated at the base, equal. H. Native of Persia, in the province of Lenkeran, where it was collected by Hansen. Adult leaves rather scabrous on the nerves and petioles; the rest glabrous. Flowers unknown. Fruit a little smaller than that of *H. Virginica*, but similar.

**Persian Witch-hazel.** Shrub 10 to 12 feet.

4 **H. Carposus** (R. Br. descrip. pl. clin. 1818. p. 4. with a figure.) leaves ovate, quite entire, unequal at the base, grey on both surfaces from stellate hairs. H. Native of China, near Nankin, and in the island of Cheusan.—Pluk. amalith. 32. t. 368. f. 2. Petals linear, 3-nerved, very much elongated. Anthers with decisional valves; hence it is proposed by R. Br. to form it into a distinct section under the name of *Loropetalum*.

**China Witch-hazel.** Shrub 6 to 10 feet.

**Cult.** The species of Witch-hazel are well adapted for shrubbery; they will grow in any common soil, and are increased by layers or suckers.


**Lin. syst. Tetrandria, Dicygnia.** Tube of calyx oblong, hairy, adhering to the ovary: limb 4-lobed, circumscribed after flowering. Petals 4, inserted in the upper part of the tube of the calyx, joined to the filaments at the base. Stamens 4, fertile, alternating with the petals: filaments broad at the base: anthers oblong, adnate, erect, dehiscing at the sides; and 4 sterile smaller stamens alternating with the first named ones. Styles 2. Pericarp inclosed in the circumscribed calyx, umbilicate at the apex, and 2-horned, inclosing 2 1-seeded coriaceous coccule, which open at the apex. Seed ovate, hanging from the top. Albumen fleshy. Embryo with a superior radicle: and flat cotyledons, having revolute edges.—A small shrub, with twiggly weak branches. Leaves alternate, on short petioles, oblong, feather-nerved, entire, furnished with 2 unequal broad foliaceous stipules at the base. Corymbs terminal, somewhat fasciculate, 7-8-flowered.


**Stipulate-leaved Dictoryphe.** Shrub.

**Cult.** A mixture of sand, loam, and peat will be a good soil for this plant; and young cuttings will strike root in sand under a hand-glass, in heat.

III. **TRICHOCLADUS** (from θρίς, thrizhos, a hair, and κλάδος, klados, a branch; the branches are clothed with stellate hairs.) Pers. ench. 2. p. 597. D. C. prod. 4. p. 269.—Dählia, Thunb. diss. (1792) and in edit. Gcott. 1. p. 108. act. soc. hist. nat. hafn. 2. vol. 1. p. 133. t. 4. but not of Cav. 1791.


Style 1. Capsule ovate, 4-valved, 4-celled. Staminodes, (seed, heads) ovate, glabrous, villous from stellate dots. Leaves opposite, petiolate, ovate, acuminated, entire. Flowers in terminal heads, crowded on a common receptacle. The character is taken from the description of the tree by Thunberg.

1 **T. crassus** (Pers. l. c.) H. Native of the Cape of Good Hope; in the woods of Hout*ui*zak. Dahlia crinata, Thunb. il. cc. et fl. exp. 1. The shrub has the resemblance of a species of *Crotone*.

**Hairy Trichocladus.** Ct. 1823. Shrub 4 to 8 feet.

**Cult.** A mixture of loam and sand is a good soil for this shrub; and young cuttings will root readily in sand under a hand-glass.

**Tribe II.**

**FOTHERGILLA** (this tribe only contains the genus *Fothergilla*.) D. C. prod. 4. p. 269. Petals wanting. Stamens 24, all fertile; anthers dehiscing by a chink. This tribe is intermediate between *Hamamelidae* and *Amenitàceae* from habit.

**IV. FOTHERGILLA** (in memory of John Fothergill, M.D. an eminent physician, and patron of botany; who cultivated a variety of most curious plants in his garden near London.) Lin. fil. suppl. p. 42. Lam. ill. t. 480. Juss. gen. 408. but not of Aublet. D. C. prod. 4. p. 269.

**Lin. syst. Icosandria, Digynia.** Calyx campanulate, adhering to the ovary at the base, somewhat truncate, with 5-7 callose subruptile teeth. Petals wanting. Stamens about 25, inserted in the calyx, club-shaped, exserted; anthers terminal, of the form of a horse shoe, opening by a semi-circular chink at the margin. Ovary 2-celled, 2-ovulate. Styles 2, filiform. Capsule adnate to the base of the calyx, 2-lobed, 2-celled; cells 2-valved at the apex, 1-seeded. Seed bony, pendulous, with a superior hydnum.—A shrub, with alternate, ovobate, feather-nerved, bis-tipulate leaves, clothed with soft starchy down; and terminal ovate spikes of flowers, having a solitary bractea under each flower; those bracteas at the base of the spike are trifid, and those at its apex are nearly entire. Flowers white, sweet-scented, sessile. Anthers yellow.


**Var. a, obtusa** (Sims, bot. mag. 1841. Mill. fig. t. 1.) leaves obovate, crenate at the top, when young clothed with fascicles of down beneath. F. mayor, Lodd. bot. cab. t. 1580. (f. 70.)

**Var. c, acuta** (Sims, l. c.) leaves ovate-oblong, somewhat cordate at the base, very blunt and serrated at the apex, sometimes with an acumen; when young tomentose beneath.

**Var. c, serótina** (Sims, l. c.) leaves oblong, acute, crenately toothed at the top, green beneath.

**Alder-leaved Fothergilla.** Fl. April, May. Ct. 1765. Shrub 3 to 6 feet.
CORNEÆ.

Cult. All the varieties of this shrub are very handsome while in flower and leaf, and are therefore proper for shrubberies. A peat or vegetable soil answers them best; and they may either be increased by layers put down in spring or autumn, or by seed, which is annually received from America.

ORDER CXXVI. CORNEÆ (this order contains plants agreeing with Cornus in important characters). D. C. prod. 4. p. 271.
—Caprifoliaceæ Cornææ, Kunth, nov. gen. amer. 3. p. 430.—
Genera of Caprifoliaceæ, Juss.
Calyx having the tube adnate to the ovary; and the limb superior and 4-lobed (f. 71. c). Petals 4, oblong, broad at the base, inserted in the upper part of the tube of the calyx, regular, valvate in aestivation. Stamens 4, inserted with the petals, and alternating with them; anthers ovate-oblong, 2-celled. Style filiform; stigma simple. Drupe baccate, crowned by the vestiges of the calyx, containing a 2-celled nucleus. Seed pendulous, solitary in the cells. Albumen fleshy. Embryo with a superior radicle, which is shorter than the two oblong cotyledons.—Trees and shrubs, rarely herbs. Leaves of all opposite, except in one species of the genus Cornus, entire or toothed, feather-nerved. Flowers capitate, umbellate or corymbose, naked or involucrated, rarely dioecious from abortion. Flesh or pulp of fruit edible.

This order agrees with Hamamelidaceæ, and Caprifoliaceæ, tribe Sambúaceæ; but differs from the first in the aestivation of the petals being truly valvate; in the stamens not being double the number of the petals; in the style being simple, not double; in the fruit being drupaceous, not capsular; and in the albumen being fleshy, not horny, &c. From Sambúaceæ it differs in the corolla being polypetalous, not gamopetalous; in the parts of the flower being quaternary, not quinary; in the style being exserted, not wanting; in the stigmas being 2, not 3, and in the fruit being drupaceous, not baccate, &c. Cornus differs from Loranthidaceæ in the stamens alternating with the petals, not opposite them.

All the genera of this order have more or less astringent bark; that of Cornus flórida is used in North America in intermittent fevers, as is also that of Cornus sericææ, which, according to Bar-ton, is scarcely inferior to quinina.

Synopsis of the genera.

1 Cornus. Limb of calyx 4-toothed (f. 71. c). Drupe baccate, marked by the vestiges of the calyx, containing a 2-celled, rarely 3-celled nucleus.

2 Votomi'ta. Tube of calyx turbinate; limb 4-toothed. Anthers approximating into a tube, and terminated by a thin membrane. Stigmas 4, oblong. Drupe crowned by the calyx, 1-celled.

3 Mastixia. Limb of calyx 4-5-toothed. Stamens 4-5; anthers didymous. Style short, girded by a disk; stigma obtuse. Drupe umbilicate, containing a 1-seeded nucleus.


I. Corneus. (from cornu, a horn; the wood being thought to be as hard and as durable as horn. Its value as a material for warlike instruments has been celebrated by Virgil.—Bona bello corneus). Tourn. inst. 641. t. 410. Lin. gen. no. 149. Gartn. fruct. t. 20. D. C. prod. 4. p. 271.


§ 1. Nudiflóreæ (from nudus, naked, and flos, a flower; in allusion to the flowers being exinvolutae). D. C. prod. 4. p. 271. Flowers corymbose or panicked, exinvolucrate.

* Leaves alternate.

1 C. alternifolium (Lin. fil. suppl. p. 125.) leaves alternate, ovate, acute, hoary beneath; corynbs depressed, spreading; branches wanting. ß. H. Native of North America, from Canada to Carolina, in shady woods on river banks. Lher. corn. no. 11. Guimp. abb. holz. t. 43. Schmidt. arb. 2. t. 70. C. alternæ, Marsh. Berries purple, globose, about the size of a grain of pepper. Leaves on long petioles. Branches green or reddish-brown.

Alternate-leaved Dogwood. Fl. May, July. Cl. 1760. Tree 15 to 20 feet.

* * Leaves opposite.

2 C. paniculata (Lher. corn. no. 10. t. 5.) branches erect; leaves ovate, acuminate, glabrous, hoary beneath; corynbs thyrsoid; ovarian silky. ß. H. Native of North America, from Canada to Carolina, rare, in swamps and near rivulets among other bushes. Schmidt. arb. 2. t. 08. C. racemosa, Lam. dict. 2. p. 116. C. flémissa, Mill. dict. no. 4. C. citrifólia, Hort. par. Branches pale-purplish. Berries roundish, depressed, watery, white, 3 lines in diameter. The dots on the under side of the leaves, which are only seen through a lens, bear bicuspidate short adpressed hairs. Tube of calyx pubescent.

V. ß. rúbidæ (Ehrh. beitr. 4. p. 16.) leaves elliptic-lanceolate.

V. γ. rúdidiæ (Pursh. fl. amer. sept. 1. p. 109.) racemes sterile, foliiferous.


3 C. tolúca (H. B. et Kunth, nov. gen. amer. 3. p. 430.) branches dichotomous, spreading; leaves ovate-oblong, narrowly acuminate, puberulous on both surfaces, paler beneath; cymes lateral, naked. ß. H. Native of Mexico, on the higher plains about the city of Tolucca. Very like C. paniculata. Compare Cham. ct Schlecht. in Linneæ. 5. p. 171. in which place is a species described which was found about Jalapa, and which is probably referrible to the present plant.

Tolucca Dogwood. Tree or shrub.

4 C. obéngæ (Wall. in Roxb. fl. ind. 1. p. 432.) leaves oblong, acuminate, acute at the base, glaucous and rather scabrous beneath, with many excised glandular on the axils of the ribs and nerves; corynbs spreading, panicked. ß. H. Native of Nipaul, about Narainhetty, Kaimandu, and the valley of Dhooon. C. paniculata, Hamilt. ex D. Don, prod. fl. nep. p. 140. Young shoots clothed with short adpressed hair. Leaves 4-6 inches
long, and 1 to 1 1/2 inch broad; petioles about an inch long. Flowers white or pale-purplish, fragrant. Calyx clothed with adpressed silvery hairs, as well as the pedicels and petals. Drupes ovate-oblong. Ovarium 3-celled.

Oblong-leaved Dogwood. Clt. 1818. Tree 10 to 15 feet.

5 C. stric'ta (Lam. dict. 3. p. 116.) branches straight, fastigate; leaves ovate, acuminated, glabrous, green on both surfaces, when young hardly pubescent beneath; corymbs convex, somewhat panicled. H. H. Native of North America, from Carolina to Canada, on the banks of rivers, frequent; also of Mexico, between Tampico and Real del Monte. Lher. corn. no. 9. t. 4. Schmidt, arb. 2. t. 67. C. fastigiata, Michx. fl. bor. amer. 1. p. 92. C. sanguinea, Walt. but not of Lin. C. cyanocarpus, Genel. syst. veg. 1. p. 257. C. Canadensis, Hort. par. C. caerulea, Meeth. icon. 3. but not of Lam. Branches reddish-brown. Anthers blue. Berries globose, soft, blue on the outside, but white inside.

Var. β, variegata; leaves variegated with white or yellow.


6 C. sanguinea (Lin. spec. p. 171.) branches straight; leaves ovate, acute, smooth and green on both surfaces; corymb flat. H. H. Native of Europe and the north of Africa, in hedges and thickets, especially on a chalk and limestone soil, common; plentiful in Britain in like situations. It is also said to grow in North America near the Lakes of Canada and New York, but has probably been introduced there. Smith, engl. bot. t. 249. Fl. dan. 481.—Dubham. arb. 1. t. 78. C. femina, Rai, syn. 460. Ger. emac. 1467. with a figure. Virga sanguinea, Matth. valgr. 1. p. 236. with a figure. Cam. epist. 159. with a figure. Branches of a dark-red when fully grown. Leaves 2-3 inches long. Flowers greenish-white, unpleasantly scented; petals brown at the sides. Fruit dark-purple, very bitter. Matthioli records that the fruit was obtained from the berries by pressure, after they have first been boiled, which is used for lamps in the country near Trent. The shrub, after a smothered combustion, affords a charcoal, esteemed the best for entering into the composition of gunpowder. It has a variety of names in different parts of the kingdom, as female cornel, dogberry-tree, hound's-tree, prickwood, from its use in making skewers, gater or gaten-tree, gater or gater-tree. The wood was formerly made use of for cart timber and rustic instruments, &c. Mr. Miller informs us, that in his time the fruit was often brought to the markets, and sold for those of lucktchors.

Bloody-branched Dogwood or Wild Cornelian. Fl. June, Britain. Shrub 4 to 5 feet.

7 C. P'urshii; branches straight; leaves ovate, green on both surfaces, and pubescent; corymb spreading. H. H. Native of North America, near the lakes of Canada and New York. C. sanguinea, Pursh, fl. amer. sept. 1. p. 109. Schmidt, arb. 2. t. 66. Flowers with yellow anthers. Berries dark-brown. This differs from the C. sanguinea of Europe in the leaves being pubescent, and in stature.

Pursh's Dogwood or Cornelian. Fl. June, July. Sh. 8 to 12 ft.

8 C. xece'lla (H. B. et Kunth, nov. gen. amer. 3. p. 430.) branches spreading; branchlets pubescent; leaves ovate, acuminated, pubescent and pale beneath, and with minute scattered pili above; cymes naked, spreading. H. H. Native about the city of Mexico. Allied to C. sanguinea.

Tall Dogwood. Tree.

9 C. Al'ba (Linn. mant. p. 40.) branches recurved; branchlets glabrous; leaves ovate, acute, pubescent, hoary beneath; corymbs depressed. H. H. Native of Siberia, at the rivers Obly and Iristsch, among bushes, &c.; North America, from Virginia to Canada, on the banks of rivers and lakes; and of North California. Pall. fl. ross. 1. t. 94. C. stolonifera, Michx.

fl. bor. amer. 1. p. 109. C. sibırica, Lodd. C. Tatárica, Mill. fig. 104.—Amm. r. t. 32. Branches of a fine red colour. Berries white or bluish-white.

Var. β, circinátta; leaves larger, more hairy beneath. H. H. Native throughout Canada, and from Lake Huron to north lat. 69°, Newfoundland, and the north-west coast of America. C. circinátta, Cham. et Schlecht. in Linneáa. 3. p. 159. The berries are lead-coloured according to Dr. Richardson, who further says, they are named by the Creees musquameena, because the bears fatten upon them, and meethkun-peemeneatik and mecanin (red stick berry), and that penguins are fond of them.


Var. β, oblongifólia (D. C. prod. 4. p. 272.) leaves oblong, glabrous above. H. H. C. oblongifólia, Rafin. in litt.


Silky Dogwood. Fl. June, July. Clt. 1683. Shrub to 5 or 8 feet.

11 C. cirrin'áta (L'Her. corn. p. 7. no. 8. t. 3.) branches warty; leaves broadly oval, acuminated, clothed with hoary tomentum beneath; corymbs depressed, spreading. H. H. Native of North America, from Canada to Virginia, on the banks of rivers, and probably of California, ex Cham. and Schlecht. in Linneáa. 3. p. 139. Schmidt, arb. 2. t. 69. C. tomentósa, Michx. fl. bor. amer. 1. p. 91. C. rugósa, Lam. dict. 2. p. 115. C. Virginíkana, Hort. par. Branches slightly tinged with red. Leaves broad, waved on their edges. Flowers white as in most of the species. Berries globose, at first blue, but at length becoming white.


12 C. macróphy'lla (Wall. in Roxb. fl. ind. 1. p. 433.) branches smooth; leaves broad-ovate, acuminated, rounded at the base, smooth, glaucous and soft beneath, with the axils slightly glandular; corymb umbellate; flowers racemose along the branches of the corymb, and secund. H. H. Native of Nipaul, near Saharumpore and Siringat, and at Kamaon. Leaves with adpressed bristles, 6 inches long, and 4 inches broad, pale beneath; the bristles fixed by the centre, and therefore bicuspitate, but are only to be seen through a lens. Ovarium hairy. Berries round, smooth, about the size of a grain of black pepper.

Long-leaved Dogwood. Shrub.

§ 2. Involúcrites (from involucra, an involucre; the heads of flowers are surrounded by an involucre). D. C. prod. 4. p. 273. Flowers disposed in heads (f. 71. b.) or umbels, surrounded by coloured involucre, which are usually composed of 4 leaves (f. 71. a.).

* Trees, with white capitate flowers.

13 C. capita'ta (Wall. in Roxb. fl. ind. 1. p. 434.) branches
spreading, smooth; leaves lanceolate, acuminate at both ends, on short petioles, rather rough from small adpressed down; flowers sessile, densely aggregate, forming a round head, girded by a 4-leaved scabrous involucrum. \( \text{C.} \). Native of Nipaul, in Gosaingsthan, where the tree is called *chungra*; and about Serampore, where it is called *Bhumoro*; and between Sutley and Jumna. D. Don, prod. fl. nep. 141. Leaves coriaceous, 2 inches long, glaucous and pale beneath: with sometimes pink-coloured nerves, having each a minute gland in their axis. Heads of flowers about the size of a moderate-sized cherry, supported by a club-shaped peduncle, which widens at the upper end into a convex ligneous receptacle for the reception of the flowers. Involucrum yellow, of 4 obovate leaves. 

**Capitate-flowered Dogwood.** Tree 10 to 15 feet. 

14 **C. disciflora** (Moc. et Sesse, fl. mex. icon. ind. D. C. prod. 4. p. 273.) branches smooth; leaves lanceolate, acuminate at both ends, on short petioles; flowers nearly sessile, disposed in capitate umbels; leaves of involucrum joined together into a roundish 4-lobed disk. \( \text{C.} \). Native of Mexico, near Jalapa, where it was collected by Berlandier, Deppe, and Schiede. C. grándis, Cham. et Schlecht. in Linnaea. 5. p. 171. Flowers white, many sterile. Fruit ovate. Perhaps C. polygama, Rafin. fl. Ind. p. 78.?

**Disk-flowered Dogwood.** Tree. 


**Japan Dogwood.** Shrub 5 to 6 feet. 

**Trees, with yellow umbellate flowers.** 

16 **C. ma's** (Lin. spec. 172.) branches smoothish; leaves oval, acuminate, rather pubescent on both surfaces; flowers arising before the leaves; umbels about equal in length to the 4-leaved involucre; fruit elliptic. \( \text{C.} \). Native throughout Europe, Britain excepted, and in the north of Asia, in hedges, and among bushes; as in France, Russia, Germany, Switzerland, Austria, Carniola, Piedmont, &c. Blackw. t. 121. Plench. icon. t. 64. C. maseula, L'Her. corn. no. 4. Guimp. abb. t. 2. Hayne, term. bot. t. 35. Fl. gruec. t. 151. Schmidt, arb. 2. t. 63. Lam. ill. t. 74. f. 1. Knip, cent. t. 18. Flowers yellow. Fruit elliptic, of a high shining scarlet color, the size and form of a small olive or acorn, very styptic in its immature state. The Cornelian cherry is very common in plantations of shrubs. If the season be mild, the flowers will come out in the beginning of February; and though there be no great beauty in them, yet they are produced in plenty at a season when few other flowers appear. Formerly it was cultivated for the fruit, which was used to make tarts, and a rob de cornis was kept in the shops. The fruit is gratefully acid, and is called sorbet by the Turks. Cornel, says Evelyn, grows with us of a good bulk and stature, and is exceedingly commended for its durability in wheelwork, pins, and wedges, in which it lasts like the hardest iron. 

**Var. \( \beta \):** fruit yellow or yellowish. Duham. arb. 1. p. 182. This variety is to be found but very rare in the gardens.

**Var. \( \gamma \):** coriáta; leaves edged with white or yellow.

**Male Cornel or Cornelín-cherry.** Fl. Feb. April. Cilt. 1596. Shrubs 10 to 15 feet.

17 **C. florída** (Lin. spec. 1661.) branches shining; leaves ovate, acuminate, pale beneath, beset with adpressed pili on both surfaces; flowers umbellate, rising after the leaves; leaves of involucrum large, roundish, retuse or nearly obcordate; drupes ovate. \( \text{C.} \). Native of North America, from Carolina to Canada, in woods, common; and on the banks of the Columbia near its confluence with the sea. L'Her. corn. no. 3. Curt. bot. mag. t. 520. Catesb. car. t. 27. Bigel. med. bot. 2. t. 28. Guimp. abb. holz. t. 39. Rafin. med. bot. t. 28. Schmidt, arb. 2. t. 52. Wang. beytr. 1. t. 17. f. 41. This is a beautiful small tree. Leaves of involucrum white. Flowers greenish-yellow. Berries scarlet, about half the size of those of *C. máscula*, ripe in August. The wood is extremely hard, and of a very fine texture. The bark is extremely bitter, and is used in North America for the cure of remittent and intermittent fevers; and is considered not inferior to Peruvian bark. The young branches stripped of their bark, and rubbed with their ends against the teeth, render them extremely white. (Baron, l. p. 51.) From the bark of the more fibrous roots the Indians obtain a good scarlet colour. 

**Flowering Dogwood.** Fl. April, May. Cilt. 1731. Tree 20 to 30 feet.

***Herbaceous plants, with subterranean creeping roots.*** 

**Stems simple, herbaceous.** Flowers white, in umbels.

18 **C. Canadensis** (Lin. spec. 172.) stems simple, herbaceous; upper leaves in whorles, ovate, acuminate, veiny, on short petioles; flowers umbellate, much shorter than the leaves of the involucrum, which are ovate, and acuminate; drupes globose. \( \text{C.} \). Native of North America, on the high mountains, in boggy ground, from New England to Carolina; also of Newfoundland, and the island of Unalaska; throughout Canada nearly to the Arctic coast, every where as far as pine woods extend, &c. L'Her. corn. no. 2. t. 1. Curt. bot. mag. 880. Begel. fl. bost. ed. 1. p. 37. Cham. and Schlecht. in Linnaea. 3. p. 129. Kerner, t. 636. ex Reem. et Schultes, syst. 3. p. 319. Flowers purplish-white; involucre white. Berries red, ripe in July. 

**Habit of *Pàris quadrifflia*.

**Canadian Dogwood.** Fl. May, June. Cilt. 1774. Pl. \( \frac{1}{2} \) ft. 

19 **C. Suecica** (Lin. spec. 172.) stem herbaceous; umbel between two branches, stalked, surrounded by 4 unequal white involucral leaves, tinged with red; leaves opposite, sessile, ovate, almost nerved from the base; drupe globose. \( \text{C.} \). Native of Europe and the north of Asia, Kamtschatka, Aleutian Islands, Greenland, Lapland, Canada, Newfoundland, and Labrador, in moist alpine pastures. In Britain in like situations; on the Chevit hills of Northumberland, abundantly. In the highlands of Scotland, frequent in boggy spots about rivulets. In the Hole of Horcum, near Scarborough. Lin. fl. lapp. ed. 2. p. 38. t. 5. f. 3. Svensk. bot. t. 261. Penn. tour. scot. p. 39. Smith, engl. bot. t. 310.—Öder, fl. dan. t. 5. Sturm, deutschl. fl. with a figure. C. herbacea, Huds. angl. 71.—Dill. edth. 108. t. 91.—Rall, syn. 261. Park. theat. 1461. f. 1. The involucral leaves finally turn green. Flowers dark purple. The berries are red and sweetish, containing a 2-celled nucleus, having the dissepiment between the cells furnished with a large hole; they are supposed by the Highlanders to create an appetite, and hence the Gaelic name, *Lus-a-chraida*, plant of gluttony. 

**Var. \( \beta \):** nearly twice the size of the species. \( \text{C.} \). Native of North America, at Fort Vancouver, on the Columbia.

† Species not sufficiently known.

20 C. ferulacea (Jacq. ex Steud. nom. 227.) or C. ferula-folia, Neeva, syn. pl. p. 38, but is undescribed. Compare Rœm. et Schultes, syst. 3. p. 323.

Fennel-like Dogwood. Shrub.

21 C. latifolia (Bray, in Steud. nom. phan. 227.) this species is undescribed as far as we know.

Broad-leaved Dogwood. Shrub.


Polygamous Dogwood. Shrub 15 feet.

 Cult. All the woody species are desirable for shrubbiers; and many of the kinds will grow under the drip of trees, which renders them valuable for thickening strips of plantations which have become naked below. They are easily increased by cuttings, layering, or by suckers. The C. Suzukiou and C. Canaden-sis should be grown in a border of peat, in a rather shady situation; they are to be increased by dividing when the plants have run considerably at the roots; or they may be planted in pots filled with peat earth, and treated as alpines.

II. VOTOMITA (Votomita is the name of the tree in Guiana). Aubl. guian. 1. p. 90. t. 35. D. C. prod. 4. p. 275.—Glßssoma, Schreib. gen. no. 1728.—Guillenlima, Neck. elem. no. 813. but not of Kuntth.

Lin. syst. Pentandria, Monogynia. Tube of calyx turbinate, adnate to the ovary; limb 4-toothed. Petals 4, oblong, acuminate, spreadingly reflexed. Stamens 4, with very short filaments; anthers oblong, approximate into a tube, terminated by a thin membrane. Style filiform, perforating the tube of the anthers; stigmas 4, oblong. Drupe crowned by the calyx, 1-celled. Seed one striated. — A glabrous shrub, having the branches somewhat quadrangular at the apex. Leaves opposite, sessile, ovate, acuminate, stiff, quite entire, furnished within the base of the petals with 2 deciduous stipulas. Flowers corymbose; corymb terminal, few-flowered. Corolla white. This genus is not sufficiently known, but is allied to Corus from the description.


Guiana Votomita. Shrub 5 to 6 feet.

 Cult. A mixture of loam, peat, and sand will suit this shrub; and cuttings will root readily in sand under a glass-house in heat.


Lin. syst. Tetra-Pentandra, Monogynia. Tube of calyx adnate to the ovary; limb superior, 4-5-toothed. Petals 4-5, ovate, broadest at the base. Stamens 4-5, opposite the calycine teeth. Anthers indolous, bursting inwards. Ovarium containing a pendulous ovulum. Style short, girded by a disk; stigma obtuse. Drupe baccate, umbilicate, containing a 1-seeded nut. Embryo inverted in the albumen.—Tall trees, natives of Java, with oblong acuminate leaves, and corymbose flowers.

1 M. Pentandra (Blum. l. c.) leaves alternate, oblong, quite glabrous; corymb terminal; flowers pentandrous, ʻ. S. Native of Java, on the more elevated woods on Mounts Salak and Burangrang, where it is called by the natives Huru-Lilia.

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Pentandra Mastixia. Fl. July, Dec. Tree 30 to 50 feet. 2 M. trichotomia (Blum. l. c.) leaves opposite, oblong, puberulous on the under side, as well as the petioles, and the corymbs which are terminal and trichotomous; flowers with a 4-toothed calyx, 4 petals, and 4 stamens. ʻ. S. Native of Java, in woods on the mountains along with the preceding species, where it is called Palaglar burice or Tenpod. Trichotomous-corymbed Mastixia. Tree 50 to 60 feet.

 Cult. For culture and propagation see Votomita above.


Lin. syst. Tetrandria, Monogynia. Tube of calyx adnate to the ovary; limb superior, 4-toothed, permanent. Petals 4, sometimes joined at the base. Stamens 4, free, alternating with the petals; filaments linear, rather membranous; anthers bursting lengthwise inwardly, adnate, 2-celled. Ovarium incompletely 2-celled, many-seeded. Style filiform; stigma truncate, simple. Drupe somewhat baccate, containing a 1-seeded nucleus. Albumen rather horny. Embryo inverted. — Trees and shrubs, native of Java, with opposite exstipulate leaves; and axillary terminal racemes of whitish, very sweet-scented flowers, furnished with 5 bracteoles under each.

1 P. flabellifolium (Blum. l. c.) stem arborescent; leaves oblong, coarsely and deeply serrated at the top. ʻ. S. Native of Java, on the tops of the higher mountains.

Holly-leaved Polyosma. Tree 20 to 30 feet.

2 P. serrulatum (Blum. l. c.) stem shrubby; leaves oblong, slightly serrated. ʻ. S. Native of Java, in woods on Mounts Gede and Pangurango.

Serrulate-leaved Polyosma. Shrub 5 to 6 feet.

3 P. integrifolium (Blum. l. c.) stem arborescent; leaves oblong, quite entire. ʻ. S. Native of Java, in the higher woods on Mount Burangrang.

Entire-leaved Polyosma. Tree 60 feet.

 Cult. See Votomita above for culture and propagation.


Flowers hermaphrodite, or of different sexes (f. 73. a. d.).

Tube of calyx girded at the base by a calyculous, which is adnate to the ovary; limb short, entire, or lobed. Petals 4-5 (f. 73. c), sometimes distinct from each other, sometimes cohering more or less together, valvate in aestivation. Stamens equal in number to the petals, and opposite them; filaments adnate to the corolla, more or less, or wanting; anthers oscillatory, or erect on the tops of the filaments; or when the filaments are deficient or wanting, they are adnate to the lobes of the corolla. Ovarium ovate or turbinate, adnate to the calyx. Style filiform or wanting; stigma capitate. Berry 1-celled (f. 73. a. f.), 1-seeded (f. 73. c), crowned or umbilicate by the calyx (f. 73. b). Tegument membranous, involving the seed. Albumen fleshy. Embryo with a superior radicle, which is thickened or truncate at the apex.—The shrubs contained in this order are almost all parasitical, that is, growing on and deriving their nourishment from other trees; very few of them grow in earth. Leaves opposite, rarely alternate or wanting, coriaceous or more or less fleshy, and always entire. The disposition of the flowers and
the habit of the plants are very variable.—Very few of the plants belonging to this order are cultivatable; they being nearly all genuine parasites, fixed in the bark and wood of trees, on which they grow, and deriving from their juices the whole of their nutriment. The Viscums have little or no beauty, but the other parasitical genera are among the most lovely of plants, hanging in clusters of rich scarlet flowers from the trunks and branches of trees in the tropics, which they often clothe with a beauty not their own. The Mistletoe of the Druids is supposed to have been the Loranthus Europæus, the common Viscum never having been seen upon the oak, while the Loranthus Europæus inhabits no other tree. If this be correct, the latter must have once existed in this country, although now extinct. It has been suggested, that all vestiges of their religion were extirpated with the Druids, which will perhaps account for the Loranthus having disappeared wherever that religion formerly held its sway.

This order is very nearly allied to Caprifoliaceæ, from which it is easily distinguished by the anthers being opposite the lobes of the corolla. A connection is established between this order and Araliaceæ by means of Ascleia. Mr. Brown suggests their relation to Proteaceæ. The germination of Viscum is exceedingly remarkable; it has afforded a subject of some curious experiments upon the vital energies of vegetables. See Du Trochet sur la Motilité, p. 114.

Synopsis of the genera.

TRIBE I. Parasitical shrubs.

1 Viscum. Flowers dioecious (f. 73. b. c.), or monocious. Margin of calyx entire. Petals usually 4 (f. 73. c.), connected at the base in the male flowers, but free in the female. Stamens 4. Stigma obtuse, sessile.

2 Arceuthobium. Flowers dioecious. Male flowers sessile, without a calyx, but with a monopetalous 2-3-4-parted corolla, and the same number of sessile 1-celled anthers, and a gland in place of an ovary. Female flowers pedicellate, with an ovate, fleshy, bidentate calyx, adnate to the ovary, without any corolla, stamens, or style, but with a small obscurely-lobed stigma. Berry ovate-baccate.


4 Loranthus. Flowers dioecious or hermaphrodite. Margin of calyx entire. Petals 5-6, linear, reflexed. Stamens inserted into the middle of the petals; filaments very short. Berry globose, umbilicate by the calyx, immersed in the rachis.

5 Struthanthus. Flowers hermaphrodite, nearly all hexamerous. Margin of calyx truncate. Petals linear, at length revolute. Anthers ovate, fixed near the base or beneath the middle of the petals; filaments very short. Berry ovate-elliptic.

6 Psittacanthus. Flowers hermaphrodite, for the most part hexamerous. Margin of calyx entire, obsolescently 5-6-toothed or repand. Petals linear-spatulate, erect, spreading, for the most part free to the middle. Filaments filiform from the middle of the petals; anthers fixed by the base or back. Berry ovate.

7 Tri'sterix. Flowers hermaphrodite; each furnished with 3 bracteas. Margin of calyx entire. Petals linear-spatulate, or linear, bearing the stamens in the middle; anthers fixed by the back, incumbent. Berry ovate or elliptic.

8 Dendropterygium. Flowers hermaphrodite; each furnished with 1 bractea. Margin of calyx entire or toothed. Petals linear-spatulate, bearing the stamens in the middle; anthers fixed by the base. Berry ovate or elliptic.

9 Pintheria. Flowers hermaphrodite, perhaps always 4-parted; each furnished with 3 or more bracteas. Anthers fixed by the back, ovate. Berry ovate.

10 Sco'runula. Flowers hermaphrodite, tubular, divided into 4-5 short lobes, usually gibbous at the base, and bursting by a longitudinal fissure as in Lobelia. Filaments 4-5, adhering a long way to the corolla; anthers fixed by the base, erect. Style filiform; stigma capitate.

11 Eltryanthus. Flowers hermaphrodite; petals 4-6-8, joined to the middle, forming a regular 4-6-8-eleft limb. Filaments adnate to the petals at the base, but free at the apex; anthers fixed by the base, erect. Style filiform. Stigma capitate.

12 Notanthéra. Flowers hermaphrodite. Petals 5-6-8, but usually 6, sometimes almost free, and sometimes joined at the base. Filaments adnate to the petals at the base, but free at the apex; anthers fixed by the back, versatile or incumbent. Bracteas concave, 1 under each ovarium, but often wanting.

13 Loxanthéra. Flowers hermaphrodite. Tube of corolla elongated, knedd at the base, but somewhat clavate and oblique at the apex, and 6-lobed; the lobes somewhat spirally twisted. Filaments stiff and curved at the apex, not attenuated but rather dilated, and the anthers are fixed by the back. Style filiform. Stigma clavate.

TRIBE II. Terrestrial shrubs.

14 Schoepfia. Flowers hermaphrodite. Margin of calyx entire. Limb of corolla 5-cleft, rarely 4-6-cleft. Filaments adnate to the tube; anthers ovate-roundish. Drupe containing a 3-celled, 3-seeded nucleus.


TRIBE I. Parasitical shrubs.

1. Viscum (viscus, birdlime, on account of the sticky nature of the berries; called gui, in French; misel in German; visco in Italian; and mistelo in English). Tourn. inst. p. 609. t. fruct. 1. p. 131. t. 27. Lam. ill. t. 807. D. C. prod. 4. p. 277. 380. Lin. gen. no. 1105. D. C. coll. mem. 6. no. 1. Gernt. Lin. syst. Monococcia or Diococcia, Tetrándria. Flowers monoecious or dioecious. Calyx a slight border in the male flowers, but rather a more evident border in the female flowers. Corolla in the male flowers gamopetalous, in 4 deep, ovate, acute equal divisions; in the female flower of 4 ovate, equal, deciduous petals, which are dilated at the base. Anthers in the female flowers none, but in the male flower there are 4 compressed, sessile ones, one on the base of each corolla segment, all over pitted or cellular. Ovary in the female flower inferior, ovate, adnate to the calyx, and crowned by its border. Stigma sessile, obtuse, undivided. Berry globose, smooth, juicy, viscid, of
line-formed on the upper surface. The branches are more likely dichotomous or trichotomous than verticillate.

*Starry Mistletoe.* Shrub parasitical.

3 V. orientale (Wild. spec. 4. p. 737.) branches terete; leaves oblong, obtuse, attenuated at the base, 3-nerved; peduncles axillary, usually 3-flowered. *P.* S. Native of the East Indies (ex Wall.), and of Java, on the mountains (ex Blum. bidr. 606.), and of Palestine upon olive trees, ex Sieb. pl. exciscipal. Leaves 15-18 lines long, but in the Palestine specimens 20-23 lines long. Berries purple, ex Wall. Perhaps the Indian plant is the same as the Palestine one.

*Eastern Mistletoe.* Shrub parasitical.

4 V. Heyneanum (D. C. prod. 4. p. 278.) branches terete; branchlets rather compressed; leaves ovate, acute at both ends, quintuple-nerved; peduncles axillary, aggregate, 3-flowered. *P.* S. Native of the East Indies, where it was collected by Heyne. V. orientale, Heyne, herb. ex Wall, and probably of Wild. The form of the leaves is truly different from the Palestinian form of *V.* orientale, but more of the figure of those of *V.* monoicum.

*Heyne's Mistletoe.* Shrub parasitical.

5 V. monoicum (Roxb. hort. beng. p. 105.) branches terete; leaves elliptic-oblong, acuminated at both ends, 5-nerved; peduncles of flowers axillary, aggregate, sessile, usually with only 3 flowers in each cluster. *P.* S. Native of the East Indies, at Sunderbund.

*Monococcus Mistletoe.* Shrub parasitical.

6 V. falcatum (Wall. cat. no. 492.) branches terete; leaves elliptic-oblong, acuminated, rather falcate, acute at the base, 5-nerved; peduncles of flowers axillary, aggregate, sessile, usually with only 3 flowers in each cluster. *P.* S. Native of the East Indies, on the Punduah mountains. Leaves 24-27 lines long, and 9-10 broad. Flowers very small.

*Falcate-leaved Mistletoe.* Shrub parasitical.

7 V. ovalifolium (Wall. cat. no. 489.) branches terete; leaves oval, obtuse, 5-nerved, narrowed into the short petioles at the base; flowers some of them in axillary sessile fascicles, and others are opposite, and somewhat verticillate, along an axillary rachis, disposed in an interrupted spike. *P.* S. Native of the East Indies, in the island of Penang. Leaves 3 inches long, and 1½ broad. Rachis not articulated. Berry ovate.

*Oval-leaved Mistletoe.* Shrub parasitical.

8 V. obtusatum (Wall. cat. no. 494.) branches terete; leaves oval, obtuse, somewhat cuneated, 5-nerved; flowers axillary, 1-5-together, almost sessile. *P.* S. Native of the East Indies, in the kingdom of Ava, on Mount Taung-Dong. Leaves 30 lines long, and 15 lines broad. Flowers small. Berries ovate. Lateral nerves of leaves slender.

*Bluntish-leaved Mistletoe.* Shrub parasitical.

9 V. heteranthum (Wall. cat. no. 488.) branches angular, at length terete; leaves elliptic, obtuse, cuneated at the base, 5-nerved beneath; peduncles axillary, 2-5-together, equal in length to the petioles, capitate at the apex, 5-6-flowered, bearing 3-5 involucrate bracteas. *P.* S. Native of Nipaul. Berries ovate-globose, solitary in each head, surrounded by the small permanent bracteas. Flowers 5-cleft, one central, the rest disposed in a whorl around the central one, all sessile on the top of the common peduncle.

*Variable-flowered Mistletoe.* Shrub parasitical.

10 V. platyphyllum (Spreng. curs. post. 47.) branches alternate, angular; leaves alternate, ovate or obovate, petiolate, attenuated at the base, narrowed beneath; umbellules usually of 4 flowers, dispersed, pedunculate, solitary or aggregate; involucres 5-cleft, permanent. *P.* G. Native of Nipaul, at Bimpedi. V. latifolium, Hamilt. in D. Don, prod. fl. nep. p. 142, but not of others.

3 f 2
Broad-leaved Mistletoe. Shrub parasitical.

11 V. umbellatum (Blum. bijdr. p. 666.) branches alternate, angular while young; leaves obovate, 3-nerved; lateral nerves bifid; umbrellas pedunculate, axillary, crowded; male flowers pentandrous. \( \gamma \). P. S. Native of Java, on trees on Mount Salak.

* Umbellate-flowed Mistletoe. Shrub parasitical.

12 V. capitellatum (Smith, in Rees' cyc. 37. no. 18.) stem branched, rough to the touch; leaves concave, obtuse; peduncles axillary; berries capitulate, oval. \( \gamma \). P. S. Native of Ceylon. Stems 3 inches high. Leaves an inch long, smooth, thick, fleshy. Heads 4-5-flowered, and under each head there are two thick bractees.

* Capitellate-flowed Mistletoe. Shrub parasitical.

13 V. triflorum (D. C. prod. 4. p. 279.) branches angular from numerous stripes; leaves oval, bluntish, somewhat undulated, and rather attenuated at the base, 3-nerved beneath; peduncles axillary, 3 times shorter than the leaves, about the length of the berries, 3-flowered, and furnished with 3 bractees at the apex; flowers 4-clft, sessile among the bractees; berries globose. \( \gamma \). P. S. Native of the Mauritius. Leaves 6-7 lines long, and 5 lines broad. Peduncles hardly 2 lines long. Flowers 1-2-together, sometimes sessile in the axils of the upper leaves. This species is designated V. rotundifolium in Bory, voy. 1. p. 390.

* Three-flowered Mistletoe. Shrub parasitical.

14 V. venosum (D. C. l. c.) branches angularly striated; leaves ovate or oval, obtuse, attenuated at the base, on short petioles, 5-veined; veins branched; peduncles axillary, very short, 2-5-flowered; berries globose. \( \gamma \). P. S. Native of the Mauritius. V. Capenese, Bory, voy. 1. p. 320. ? Plant becoming blackish on drying.

Var. \( \beta \). lanceolatum (D. C. l. c.) leaves ovate-lanceolate, somewhat acuminate. \( \gamma \). P. S. Native along with the species.

* Vicin-leaved Mistletoe. Shrub parasitical.

15 V. rotundifolium (Lin. fl. suppl. p. 426.) stem and branches hexagonal, articulated; leaves sessile, roundish, acute; peduncles 3-flowered, short; bracteas minute, opposite. \( \gamma \). P. G. Native of the Cape of Good Hope, on trees. Thum. fl. cap. 154.

Round-leaved Mistletoe. Shrub parasitical.

§ 2. Plants with true leaves. Flowers disposed in articulated spikes; the joints sheathed.—American species.

* Branches terete.

16 V. torulorum (D. C. prod. 4. p. 279.) much branched; branches terete; leaves roundish-ovate or elliptic, oblique, rounded at the apex; spikes axillary, of 2-3 joints; flowers immersed, in 4 rows. \( \gamma \). P. S. Native of Quito, on trees near Guayaquil. V. buxifolium, from South America, Spreng. syst. 1. p. 488. Loranthus torulorum, H. B. et Kunth, nov. gen. amer. 3. p. 443. Schultes, syst. 7. p. 156. Leaves 30-33 lines long, and 16-20 broad, on petioles, which are 2-3 lines long. Fruticose spikes ½ inch long. Flowers unknown.

* Torulose-spiked Mistletoe. Shrub parasitical.

17 V. trieavum (Lam. dict. 3. p. 57.) branches terete, articulated, trichotomous; leaves obovate, obtuse, narrowed at the base, 3-nerved; spikes dense, short, lateral; berries round. \( \gamma \). P. S. Native of St. Domingo and Martinico. Plum. ed. Burm. t. 258. f. 2. V. verticillatum, Lin. exclusive of the syn. Browne, and Sloane. Berry copper-coloured, size of a grain of pepper.

Three-nerved-leaved Mistletoe. Shrub parasitical.

18 V. buxifolium (Lam. dict. 3. p. 56.) branches terete, articulated: joints short, thickish; leaves obovate, obtuse, 1-nerved, sessile; spikes axillary, solitary or twin, length of the leaves. \( \gamma \). P. S. Native of St. Domingo, in the district of Leogane.

Wild. spec. 4. p. 738.—Plum. ed. Burm. t. 258. f. 3. There are varieties with both white and purple berries.

* Buxifoliate Mistletoe. Shrub parasitical.

19 V. sauruboides (D. C. prod. 4. p. 36.) branches terete; leaves ovate, acute or acuminate, on very short petioles, beset with dot-like tubercules beneath, having the middle nerve rather prominent, and the lateral veins hardly perspicuous; spikes axillary, twin, shorter than the leaves, very slender. \( \gamma \). P. S. Native of Cayenne. V. latifolium, Lam. dict. 3. p. 57. but not of Swartz, Don or Plum. V. racemosum, Aubl. guian. 2. p. 895. ? Leaves 4 inches long, and 2½ broad, on petioles which are a line long. Spikes an inch long, with bifid sheaths. Flowers in 4, 3-flowered whorls between the sheaths.

Saururus-like Mistletoe. Shrub parasitical.

20 V. tereticaule (D. C. l. c.) branches terete, smooth; leaves ovate, acute, nerveless, veinless, on very short petioles; spikes axillary, twin or solitary, shorter than the leaves; female flowers trifid. \( \gamma \). P. S. Native of Jamaica, on trees. V. latifolium, Swartz, fl. ind. occ. 1798. but not of Lam. nor Don. Var. \( \beta \), Cubences (D. C. l. c.) leaves having the middle nerve rather prominent, but with few veins in the dried state; the margins rather undulated. \( \gamma \). P. S. Native of Cuba. Lower spikes 2-3. Perhaps the same as the Jamaica plant.

* Terete-stemmed Mistletoe. Shrub parasitical.

21 V. Martiniceae (D. C. l. c.) plant glabrous; branches terete; leaves ovate-lanceolate, acuminate, 3-nerved, on very short petioles, thick; spikes axillary, solitary, 3 times shorter than the leaves; flowers 4 in a whorl, between the sheaths in each joint of the rachis of the spike. \( \gamma \). P. S. Native of Martinico. Sieb. fl. mart. no. 227. Leaves 3 inches long, and an inch broad, having the middle nerve rather prominent.

Martinico Mistletoe. Shrub parasitical.

22 V. flavescens (Pursh, fl. amer. sept. 1. p. 114.) branches terete, opposite, and verticillate; leaves cuneate-obovate or lanceolate, obtuse, 3-nerved; spikes axillary, solitary, a little shorter than the leaves, interrupted. \( \gamma \). P. H. Native of North America, from Pennsylvania to Carolina, and probably of Louisiana, on oak trees. V. album, Waltz. car. 241. Muhl. cat. no. 91. V. verticillatum, Nutt. gen. amer. 2. p. 255. Ell. sketch. 2. p. 677. V. leucocarpum, Rafn. fl. lud. 79. Berries white, diaphanous. Male flowers mostly trifid.

* Yellowish Mistletoe. Shrub parasitical.

23 V. crassifolium (Pohl. in litt. ex D. C. prod. 4. p. 280.) branches terete; leaves broad-oval, attenuated at both ends, nerveless, on short petioles; spikes axillary, twin or tern, 4-6 in a whorl, 7 times shorter than the leaves, articulated: with truncate sheaths, and short joints; flowers disposed in 4 rows; berry ovate-globose. \( \gamma \). P. S. Native of Brazil, where it was collected by Pohl. Leaves 4 inches long, and 2½ broad. Spikes 6-8 lines long.

* Thick-leaved Mistletoe. Shrub parasitical.

24 V. leptoverticillatum (D. C. prod. 4. p. 280.) branches terete; leaves oblong-lanceolate, acute at both ends, 3-nerved; spikes trichotomous, elongated, somewhat panicked, slender, jointed: with cushion-shaped sheaths; berries ovate-roundish, not immersed. \( \gamma \). P. S. Native of St. Domingo, where it was collected by Bertero. V. macrostachyum, ex Hispaniola, Spreng. syst. 1. p. 487. V.iphyllum bicacae aureus, Plum. ed. Burm. t. 258. f. 1 and therefore V. opuntioides var. \( \beta \), Lam. dict. 3. p. 56.

* Slender-spiked Mistletoe. Shrub parasitical.

25 V. Perrotteae (D. C. prod. 4. p. 280.) branches terete; leaves lanceolate, obliquely falcate, bluntish at the apex, cuneated at the base, 5-7-nerved: nerves branched a little; spikes axillary, solitary, opposite, one-half shorter than the leaves, jointed: with bifid sheaths. \( \gamma \). P. S. Native of French Guiana. Leaves
5-6 inches long and 1½ broad. Spikes 2 inches long, erect, constantly of 5 joints. Flowers in 6 rows, many of which are abortive. Immature berries nearly globose, half immersed.

*Perrottet's Mistletoe.* Shrub parasitical.

26 *V. brachystachyum* (D. C. I. c.) branches terete; leaves oblong, obtuse, attenuated at the base, finely 5-nerved; spikes axillary, solitary, opposite, sessile, ovate, few-flowered; berries ovate-globose. h. P. S. Native of Mexico, between Tampico and Real del Monte, where it was collected by Berlandier. Leaves 12-15 lines long, and 3-4 broad. Spikes 3-4 lines long.

*Short-spiked Mistletoe.* Shrub parasitical.

27 *V. pru'rum* (Lin. spec. 1451.) stems terete, simple; leaves oblong, obtuse, tapering into the petiole at the base; spikes axillary, one-half shorter than the leaves, somewhat interrupted; flowers triplicate; berries globose. h. P. S. Native of the Bahama Islands, parasitical upon mahogany and other trees. Berries red. Leaves opposite, of a shining green colour.

*Red-berried Mistletoe.* Shrub parasitical.

28 *V. Berteri'num* (D. C. prod. 4. p. 281.) branches terete, dichotomous; leaves oblong-lanceolate, attenuated at both ends, acute at the base, very short petioles, having the middle nerve rather distinct, and with 2 rather oblique veins rising from the middle; spikes axillary, solitary, opposite, one-half shorter than the leaves, jointed, with biform sheaths. h. P. S. Native of St. Domingo. *V. dichotomum,* Spreng. syst. 1. p. 448. exclusive of the synonyms, but not of D. Don. Leaves 3 inches long, and an inch broad. Spikes 1-2 inches long. Berries globose. Flowers disposed in 4 rows on the spikes.

*Bertero's Mistletoe.* Shrub parasitical.

29 *V. Schott'ra* (Pohl, in litt. ex D. C. prod. 4. p. 281.) branches terete; leaves oblong-lanceolate, attenuated at both ends, and somewhat acuminate, tapering into the petiole at the base; spikes axillary, solitary, opposite, one-half shorter than the leaves, articulated: with trifid sheaths; berries ovate; flowers trifid. h. P. S. Native of Brazil, where it was collected by Schott. Leaves 2-5 inches long, and 8-9 lines broad. Spikes 9-12 lines long. Allied to *V. Berteri'num*.

*Schott's Mistletoe.* Shrub parasitical.

30 *V. Macrostachyum* (Jacq. coll. 2. p. 109. t. 5. f. 3.) branches terete; leaves linear-lanceolate, nearly sessile, oblong, veinless; spikes axillary, solitary, filiform, much longer than the leaves, articulated: with bowl-shaped sheaths; corolla tripartite. h. P. S. Native of Martinico and Trinidad, on trees. Sieb. fl. trim. no. 357. Spikes 3-6 inches long; ultimate ones subpanicled. Flowers small. Leaves an inch long, and 3 lines broad.

*Long-spiked Mistletoe.* Shrub parasitical.

31 *V. fasci'rons* (Hook. et Arn. in bot. misc. 3. p. 356.) branches terete, but when young compressed; leaves narrow-lanceolate, bluntish, recurvedly falcate, tapering into the petiole at the base, obscurely 3-5 veined; spikes axillary, solitary, opposite, almost one-half shorter than the leaves; sheaths of spikes truncate. h. P. S. Native of Brazil, upon laurels by the river Uruguay. The sheaths of the spikes are here formed of 2 opposite and equal portions, which are truncate at the apex. In *V. Ligea* they are keeled on the back, and acute at the extremity.

*Sickle-leaved Mistletoe.* Shrub parasitical.


*Pepper-like Mistletoe.* Shrub parasitical.

33 *V. Augusi'rolium* (D. C. prod. 4. p. 281.) much branched; branches terete, in whorles; leaves petiolate, linear-lanceolate, somewhat ensiform, narrowed at the apex and obtuse; spikes 1-3-together, axillary, articulated; flowers in 4 series, immersed in the rachis. h. P. S. Native of Peru, in the temperate regions of the Andes, between Ollera and Mount Aipate. Leaves 4-5 inches long, and half an inch broad; petioles 3-4 lines long; Spikes 12-18 inches long. Flowers unknown. *V. stemophyl'um,* Spreng. syst. 1. p. 487. *Loranthus piperoides,* H. B. et Kunth, nov. gen. amer. 3. p. 442. Schultes, syst. 7. p. 155.

*Narrow-leaved Mistletoe.* Shrub parasitical.

34 *V. Affine* (Pohl, in litt. ex D. C. prod. 4. p. 281.) branchlets rather tetragonal; branches terete; leaves linear-lanceolate, obtuse, attenuated at the base, finely 5-nerved; spikes axillary, solitary or twin, twice or thrice longer than the leaves, articulated: with small sheaths; berries ovate, exserted. h. P. G. Native of Chili, on trees near Los Cerillos de San Juan, where it is called *Ligea* by the natives. This species seems very nearly allied to *V. affine,* Pohl.

*Ligea Mistletoe.* Shrub parasitical.

35 *V. Ligea* (Gill. mas. ex Hook. bot. misc. 3. p. 355.) branches terete, while young compressed; leaves straight, linear-oblong, obtuse, hardly apiculated, attenuated at the base, 3-nerved, somewhat feather-veined in the middle; spikes solitary, axillary, opposite, 2 or 3 times shorter than the leaves; sheaths of spikes keeled, acute; berries ovate, exserted. h. P. G. Native of Chili, on trees near Los Cerillos de San Juan, where it is called *Ligea* by the natives. This species seems very nearly allied to *V. affine,* Pohl.

*Ligea Mistletoe.* Shrub parasitical.

36 *V. ensi'folum* (Pohl, in litt. ex D. C. prod. 4. p. 281.) branches terete; leaves linear-oblong, acuminate at both ends, petiolate, finely 5-nerved at the base; spikes axillary or terminal, many, verticillate, articulated, length of the petals; with the sheaths biform; flowers in 6 rows; berries globose. h. P. S. Native of Brazil, where it was collected by Pohl. Leaves coriaceous, 6-7 inches long, and 8-9 lines broad; petioles 8 lines long.

*Sword-leaved Mistletoe.* Shrub parasitical.

37 *V. vel'litimum* (D. C. prod. 4. p. 281.) branches terete, velvety from short down; leaves linear-oblong, attenuated at both ends and acute, 3-5-nerved at the base, rather velvety when young, but glabrous in the adult state; spikes axillary, solitary or twin, 3 times shorter than the leaves, articulated: with biform ciliated sheaths; berries 4½ rows. h. P. G. Native of Mexico, in the valley of Tolucua, where it was collected by Berlandier. Leaves 4 inches long, and 6 lines broad. Spikes 9-15 lines long. The plate in Catesb. car. t. 81. lower figure, agrees pretty well with the present species.

*Velvet Mistletoe.* Shrub parasitical.

38 *V. tomen'tosum* (D. C. prod. 4. p. 670.) branches terete, while young rather compressed; leaves obovate, obtuse, a little attenuated at the base, clothed with velvety, somewhat deciduousomentum on both surfaces, as well as the branchlets; spikes axillary, interruptedly articulated, solitary or twin, rather shorter than the leaves: with small nearly entire sheaths. h. P. S. Native of Mexico, in the plains at Real de Ratone, beyond the range of Mimosas, where it was collected by Berlandier.

*Tomentose Mistletoe.* Shrub parasitical.
** Branchlets 2-edged or compressed, but at length becoming terete.

39 V. interrup'tum (D. C. prod. 4. p. 282.) branches compressed while young, but at length becoming terete; leaves oblong-lanceolate, obtuse, attenuated at the base, petiolate, almost nerveless, with 3-5 fine veins; spikes axillary, 1-2, with the sheaths rather truncate at the apex; joints naked at the base, and fructiferous at the apex. H. P. S. Native of Brazil, where it was collected by Pohl. V. lanceolato-ellipticum, Pohl, in litt. Leaves 4 inches long, and 8-10 lines broad. Petioles 4 lines long. Spikes 1½ inch long, interrupted, constantly of 3-4 joints. Perhaps sufficiently distinct from V. rubrum.

** Interrupted-spiked Mistletoe. Shrub parasitical.

40 V. ances (Spreng. syst. 1. p. 487.) branches 2-edged, but in the adult state they are nearly terete; leaves oblong-lanceolate, obtuse, attenuated at the base, having 3 veins rising from the base; spikes axillary, opposite, one-half or more shorter than the leaves. H. P. S. Native of Porto-Rico and Hispaniola, where it was collected by Bertero. Leaves 3-4 inches long, and 9 lines broad; petioles 4 lines long. Spikes an inch long or a little more.

** Two-edged-branched Mistletoe. Shrub parasitical.

41 V. hexastichum (D. C. prod. 4. p. 282.) branches 2-edged, but at length becoming nearly terete; leaves elliptic, tapering at both ends, bluntish at the apex, and acute at the base, petiolate, feather-nerve地区的; spikes axillary, solitary, opposite, articulated: with the sheaths truncate; berries globose depressed, disposed in 6 rows. H. P. S. Native of the island of Cuba, near Havana. Leaves coriaceous, 3 inches long, and about 15-16 lines broad; petioles 4 lines long. This species is very like V. Perrottetii.

** Six-ranked Mistletoe. Shrub parasitical.

42 V. undulatum (Pohl, in litt. ex D. C. prod. 4. p. 282.) branches 2-edged; branches terete, leaves oval or oblong, tapering at the base, and bluntish at the apex, undulated, thickish, having the middle nerve rather tumid, and the rest of the leaf veinless; spikes axillary, twin, articulated, 3 times shorter than the leaves: having the sheaths rather truncate, and the joints short. H. P. S. Native of Brazil, where it was collected by Pohl.

** Undulated-leaved Mistletoe. Shrub parasitical.

43 V. macrophyllum (Spreng. syst. 1. p. 488.) branches nearly terete; branches compressed at the apex; leaves broadly ovate or oval, petiolate, with the middle nerve rather thick, and the lateral veins perspicuous; spikes 2-4 from each axil, one-half shorter than the leaves, somewhat tetragonal; berries ovate, half immersed. H. P. S. Native of the West India Islands, as of St. Domingo (Plum. ed. Burm. t. 258. f. 4.), and Porto-Rico (Bertero). Leaves 6 inches long, and 3½ broad; petioles 6-8 lines long. Spikes 2½ inches long, interrupted. Fruit disposed in 4 rows on the spike, and each row composed of 4 berries. Sheaths of spike truncate.

** Long-leaved Mistletoe. Shrub parasitical.

44 V. Schiedeanum (D. C. prod. 4. p. 670.) trunk terete; branches 2-edged, dilated under the forks; leaves fleshy, 3-5-nerved, falcate, obtuse: female spikes 1-3-together, axillary; flowers 6 in a whorl. H. P. G. Native of Mexico, on trees near Jalapa. Fruit a little smaller than hemp seed. V. falcatum, Cham. et Schlcht. in Linnaea. 5, p. 172. but not of Wall.

** Schiede's Mistletoe. Shrub parasitical.

45 V. flavens (Swartz, fl. ind. occ. p. 266.) branches 2-edged, at length terete; leaves ovate, somewhat attenuated at the apex, obtuse, 5-nerved at the base, on very short petioles; spikes axillary, twin or tern, 3 times shorter than the leaves, articulated; berries ovate. H. P. S. Native of Jamaica (Swartz), and Porto-Rico (Bertero), on the branches of trees. The figure of Plumier, cited for this plant by several authors, has here been omitted in consequence of the leaves in the figure being feather-nerve地区的, and not 5-nerved at the base, as in this species.

** Yellowish Mistletoe. Shrub parasitical.

46 V. tetragonium (D. C. prod. 4. p. 282.) branches opposite, and are, as well as the branchlets, tetragonal; leaves elliptic-lanceolate, attenuated at the base, and obtuse at the apex, 3-nerved or 5-nerved, the 2 lateral nerves being hardly evident; spikes axillary, solitary, 3 or 4 times shorter than the leaves. H. P. S. Native of Porto-Rico and Guadaloupe, on trees by the sea side. V. angustifolium, Spreng. syst. 1. p. 487. V. myrtilloides and Loranthus sessilis, Spreng. in herb. Balb. Leaves 12-16 inches long, and 5-8 lines broad; petioles a line long. Spikes 2-3 lines long. Perhaps the same as V. myrtilloides, Willd. spec. 4. p. 759. V. myrtilloides, Willd. spec. 4. p. 759.2

** Tetragonal-branched Mistletoe. Shrub parasitical.

47 V. mucronatum (D. C. c. l.) branches tetragonal, 2-edged while young, but nearly terete in the adult state; leaves oblong-lanceolate, attenuated at the base, obtuse, and mucronate at the apex, having the middle nerve and one on each side of it distinct; spikes axillary, solitary, 4 times shorter than the leaves. H. P. S. Native of St. Domingo. V. myrtilloides, Spreng. in herb. Balb., and hence it is the V. myrtilloides from Hispaniola of Spreng. syst. 1. p. 488. Leaves nearly an inch long, and 4 lines broad; petioles 1-2 lines long. Spikes 2-3 lines long. Mucronate-leaved Mistletoe. Shrub parasitical.

48 V. penniveneum (D. C. l. c.) branches tetragonal, nearly terete; leaves somewhat alternate, oval on short petioles, obtuse: having the middle nerve rather prominent beneath, and with the lateral veins pinnate and branched, hardly perspicuous above; spikes axillary, solitary, one-half shorter than the leaves; berries oblong. H. P. S. Native of French Guiana.

** Feather-veined Mistletoe. Shrub parasitical.

49 V. kunthianum (D. C. prod. 4. p. 283.) plant much branched; branches tetragonal, articulated; leaves nearly sessile, obliquely oblong, 3-5-nerved, rounded at the apex and cuneate at the base; spikes axillary, 2-3 together, articulated; berries globose, immersed in the rachis. H. P. S. Native of Quito, near Guayaquil, on trees. Leaves 18-24 lines long, and 7-9 lines broad. Spikes nearly an inch long. V. trinervium, Spreng. syst. 1. p. 488. exclusive of the syn. of Lam. Loranthus visci folius, H. B. et Kunth, nov. gen. amer. 8. p. 443. Schultes, syst. 7. p. 156.

** Kunth's Mistletoe. Shrub parasitical.


Leaves 24-27 lines long, and 6-7 broad; petioles a line long. Fruit bearing spikes an inch and a half long.

** Quadrangular-stemmed Mistletoe. Shrub parasitical.

51 V. oblongifolium (D. C. prod. 4. p. 283.) branches tetragonal; leaves oblong, obtuse, attenuated at the base, nearly nerveless, or somewhat 1-nerved at the base; spikes axillary, solitary, 2 or 3 times shorter than the leaves. H. P. S. Native of Guadaloupe, on the mountains. Allied to V. tetragonium and V. mucronatum, but differs in the leaves being longer and nerveless. Leaves 12-14 lines long and 3-4 broad. Fruit bearing spikes an inch and a half long.
Oblong-leaved Mistletoe. Shrub par.
52 V. microphyllum (Pohl, in litt. ex D. C. prod. 4. p. 283.) branches tetragonal, when young rather compressed, but in the adult state nearly terete; leave: linear-oblong, obtuse, attenuated at the base, nerveless; spikes axillary, solitary, much shorter than the leaves, articulated: with small sheaths, and short, usually 4-flowered joints. {P. S. Native of Brazil, where it was collected by Schwott. Leaves an inch long and 2 lines broad. Spikes 2 lines long, constantly of 3-4 joints.

Small-leaved Mistletoe. Shrub parasitical.

§ 3. Plants without leaves. Branches articulated.
53 V. Cape'ense (Linn. fil. suppl. p. 426.) plant leafless; stems bluntly tetragonal, much branched, articulated; branches decussate; flowers usually 6 in a whorl, sessile: female ones 4-parted; berry globose. {P. G. Native of the Cape of Good Hope, parasitical on some species of Rhúis. Male flowers 2-4-cleft. Thunb. prod. p. 31. fl. cap. p. 154. Razomówskis Capénis, hort. mosc. In the racemes of a plant under this name, collected by Mr. Burchell, the branches are terete, it is therefore perhaps a distinct species.

Cape Mistletoe. Shrub parasitical.

54 V. angulá'tum (Heyne, herb. ex Wall. cat. no. 497. D. C. prod. 4. p. 283.) plant leafless; branches angular, tetragonal, articulated; flowers unknown. {P. S. Native of the East Indies, where it was collected by Heyne. From the imperfect specimens examined, it appears to be very distinct from the other species of this genus, but it is hardly known.

Angular-branched Mistletoe. Shrub parasitical.

55 V. ambi'guum (Hook. et Arn. in bot. misc. 3. p. 356.) plant leafless; branches terete, without joints and without sheaths; spikes alternate towards the tops of the branches, oblong-linear, without sheaths; flowers sessile, a little longer than the concave obtuse scales. {P. G. Native of Brazil, upon myrtles by the river Uruguay. The two lateral petals are carinate, and the dorsal one nearly plain. In Víscum the margin of the calyx in the female flowers is usually conspicuous, but in this species it is so entirely wanting, as almost to induce a belief that the 5 petals, which are apparently the same texture as the texture of the calyx, form its limb; and if this really were so, it ought to form a genus next to Tupéin, Cham. et Schlecht, in Linnaea. 3. p. 203., which seems in that specific resemblance.

Ambiguous Mistletoe. Shrub parasitical.

56 V. tenco'dèdès (Comm. ex Pet. Th. mel. obs. p. 43.) plant leafless, much branched; stem and branches compressed, articulated, linear-oblong; sheaths truncate; flowers sessile, 2 opposite or 4 in a whorl, situated in the axis of the sheaths. {P. S. Native of the Mauritius and Bourbon. Joints 3 lines long, and a line broad, but not striated. Flowers small. Plant becoming wholly black in drying. Habit almost of Saticótría. Wreath Mistletoe. Shrub parasitical.


58 V. dichótónum (Hamilt. D. Don, prod. fl. nep. 147. but not of Spreng.) plant leafless; branches compressed, articulated; joints oval-oblong, striated lengthwise, 5 times longer than its breadth; flowers by threes, sessile at the tops of the joints or branches. {P. G. Native of Nepal, about Narin-hetty. V. nepáleñse, Spreng. cur. post. Bracteae membranous, cipular, under the fruit, which is oval. Branches usually opposite, hence dichotomous.

Dichotomous Mistletoe. Shrub parasitical.

59 V. elongá'tum (Wall. cat. no. 495. D. C. prod. 4. p. 284.) plant leafless; branches compressed, articulated; joints linear-oblong, somewhat attenuated at the base, 7 times longer than their breadth; fascicles of flowers somewhat verticillate, sessile, containing 1-3 flowers each, placed at the tops of the joints. {P. S. Native of the East Indies, on the Pandava mountains, in Silhet. Joints 20-22 lines long, and 3 lines broad. Branchlets usually opposite.

Elongated Mistletoe. Shrub parasitical.

60 V. fragíle (Wall. cat. no. 498. D. C. prod. 4. p. 284.) plant leafless; branches compressed, articulated; joints linear-oblong, striated a little, thickish in the middle, six times longer than their breadth; fascicles of flowers opposite, sessile, containing 1-3 flowers, placed at the tops of the branches. {P. S. Native of the East Indies, at Martaban and Tavoy. Branchlets usually opposite. Perhaps sufficiently distinct from V. dichótomum.

Brittle Mistletoe. Shrub parasitical.

61 V. attenuá'tum (D. C. prod. 4. p. 284.) plant leafless; branches compressed, articulated; joints gradually attenuated both at the base and apex, linear-cuneated, somewhat striated, sometimes longer than their breadth; fascicles of flowers at the tops of the joints opposite, sessile, containing each 3-5 flowers. {P. S. Native of Java, parasitical upon some species of Anóna. Joints of branches an inch long, and a line or a little more in breadth. Stems nearly terete at the base.

Var. ß, Timóriénses (D. C. prod. 4. p. 381.) branches nearly herbaceous; ultimate joints of branches acute at the apex. {P. S. Native of Timor. Perhaps the same as V. compréssum, Poir. suppl. 2. p. 861., which was collected in Ambonya. The berry, according to Poir, is small and yellow.

Jointed Mistletoe. Shrub parasitical.

62 V. monislióide (Blum. bijdr. p. 667.) plant leafless; stems terete at the base; branches 2-edged, articulated; joints naked; flowers in whorles, sessile. {P. S. Native of Java, on trees about Buitenzorg, very common, and is called by the natives Mengando along with other species.

Necklace-formed Mistletoe. Shrub parasitical.

64 V. tunéfórmis (D. C. prod. 4. p. 284.) plant leafless; branches compressed, articulated, trichotomous, elongated; joints of branches 4 times longer than broad, striated lengthwise; flowers nearly sessile, by threes at the tops of the joints. {P. S. Native of Brazil, where it was collected by Pohl. P. articulátum, Pohl, in litt. but not of Borrm. Allied to V. dichótomum, but differs in the joints being longer, branches much less branched, branchlets elongated, and the flowers not in whorles.

Tuna-formed Mistletoe. Shrub parasitical.

65 V. opuntioides (Linn. spec. 1452.) plant leafless; branches compressed, articulated; joints broadly ovate; spikes jointed, at the tops of the branches or articulations, bearing 2 rows of opposite flowers, and margined by a membrane. {P. S. Native of Jamaica. Sloane, hist. jum. 2. p. 93. t. 201. f. 1. V. monstrósum, Bertero, inéd. V. opuntioides, Willd. spec. 4. p. 740. exclusive of the synonyme of Plumer. Spreng. syst. 1. p. 487. exclusive of the Japan plant. Berries like those of the common mistletoe.

Var. ß. angástitus (D. C. prod. 4. p. 284.) joints oblong, somewhat attenuated at the base. {P. S. Native of Jamaica.
Berries oval-oblong; flowers 3-cleft. Perhaps the present variety is the female plant, and this called the species the male.

Indian-fig-like Mistletoe. Shrub parasitical.

66 V. vagina'tum (Humb. et Bonpl. in Willd. spec. 4. p. 740.) plant leafless; stem tetragonal; branches terete; joints bearing sheaths, which are bidentate at the apex; flowers 2, opposite, sessile in the recess of the sheath. P. S. Native of Mexico, in pine woods, on the high mountain called Cofre de Perote. H. B. et Kunt., nov. gen. amer. 3. p. 445.

Sheathed Mistletoe. Shrub parasitical.

67 V. cupula'tum (D. C. prod. 4. p. 285.) plant leafless; stem tetragonal; branches compressed; sterile joints elongated: fertile ones very short, usually bearing 2 fruit each; sheaths very short; flowers spicate, sessile, opposite; bractea cupulate, membranous, orbicular under each berry; berries ovate. P. S. Native of St. Domingo, where it was collected by Bertero. V. vagina'tum ex Hispaniola, Spreng. Syst. 1. p. 447.

Cupulate-bracteate Mistletoe. Shrub parasitical.

68 V. Domi'nie'ssis (Spreng. syst. 1. p. 487.) plant leafless; stem and branches terete; sheaths large, bowl-shaped, bifid, with white rather scarious margins. P. S. Native of St. Domingo. Spikes opposite, flavous.

St. Domingo Mistletoe. Shrub parasitical.

69 V. graci'le (D. C. prod. 4. p. 285.) stem terete; branches rather compressed, articulated; joints linear, elongated, 12 times longer than broad; spikes terminal, compressed, articulated, with the flowers disposed along the margins on both sides in distant rows. P. S. Native of the West Indies, but in what island is unknown.

Slender Mistletoe. Shrub parasitical.

70 V. Chile'ense (Hook. et Arn. in Beech. bot. p. 25.) stem terete, branched; branches and branchlets opposite, articulated, leafless; flowers 2-3-together, sessile at the knees of the branches. P. G. Native of Chili, at Concepcion.

Chili Mistletoe. Shrub parasitical.

† Species not sufficiently known.

71 V. purpure'um (Lin. spec. 1451.) branches terete; leaves obovate, obtuse, petiolate; racemes axillary, a little longer than the leaves; flowers opposite, distant, 3-6 pairs; berries ovate, on short pedicels, terminated by the long style. P. S. Native of the Bahamas Islands, parasitical upon Hippomane Mancenilla. Catesb. Carol. 2. p. 95. t. 95. lower figure. Perhaps a species of Loranthus.

Purple Mistletoe. Shrub par.

72 V. verticillat'um (Lam. dict. 3. p. 57.) stem terete, striated; branches verticillate, terete. P. S. Native of Jamaica, parasitical on the branches of trees. Sloane, jum. hist. 2. p. 93. t. 201. f. 2. Perhaps a species of Rhipsalis.

Whorled-branched Mistletoe. Shrub par.

73 V. pauciflorum (Lin. fil. suppl. 246.) stem striated; branches alternate; leaves alternate, sessile, oblong; flowers scattered, solitary, on short peduncles. P. G. Native of the Cape of Good Hope. From the leaves being alternate, this is perhaps a true species of Viscum.

Few-flowered Mistletoe. Shrub.

74 V. obscurn'um (Thumb. prod. p. 31. fl. cap. p. 154.) stem erect, wrinkled; branches alternate; leaves opposite, elliptic, veinless, unequal. P. G. Native of the Cape of Good Hope. Flowers and fruit unknown.

Obscure Mistletoe. Shrub.

75 V. antar'cticum (Forst. prod. no. 370.) branches unknown; leaves oblong or ovate, narrowed at both ends, obtuse, nervellous; racemes terminal, articulated, usually containing 5 flowers. P. G. Native of New Zealand, parasitical on trees. Willd. spec. 4. p. 39.

Autarctic Mistletoe. Shrub par.

76 V. Kemple'eri (D. C. prod. 4. p. 285.) P. G. Native of Japan, at Mikawaseki, Kemptf. am. ex 785. where it is called Gami Maatz. V. album, Thunb. jap. p. 64. but it differs from V. album in the spikes being axillary, in the berries being reddish, and in the leaves being 1-nerved.

Kempfer's Mistletoe. Shrub par.

N. B. V. rubrum, Burm. fl. Ind. 311. is certainly not a species of Viscum, but perhaps one of Hédcra. V. capillare and V. ligulatum, Blum. bijdr. 667 are species of Psilütis. V. terrest're, Lin. spec. 1452 is Lysimichia stricta. V. fla'vescens, Comm. is Misodendron punctulatum.

Cult. None of the species of Mistletoe are cultivable in gardens, except the common Mistletoe, whose culture and propagation are treated of under that species.


Lin. syst. Diócia, Di-Tetrándoseria. Flowers dioecious. Male ones sessile; calyx none; corolla monopetalous, 2-3, rarely 4-parted, tough, and fleshy; segments ovate, concave, spreading; stamens 2-3-4; anthers sessile, fixed in the middle of the segments, free, nearly globose, 1-celled, membranous, dehiscing transversely; ovarium none, but in its stead there is a small 2-3-4-lobed gland. Female flowers on short pedicels; calyx oval, compressed, fleshy, bidentate, almost covering the ovary, which is one ovulate, and adnate to it; corolla, style, and stamens none; stigma small, obscurely lobed. Berries narrow, obviate, terete, 1-seeded, on short pedicels. Seed immersed in viscid pellicul pulp, fixed to the upper part of the cell, pendant, obovately cylindrical, acuminated at the base; integument thin; albumen fleshy. Embryo immersed, slender, cylindrical, placed towards the base of the seed; radical turned to the hilum of the seed.—A small, leafless, rather fleshy, proliferous branched shrub, parasitical on resiniferous trees, in Middle Europe and North America; branches opposite, blantly tetragonal, articulated in the manner of Saticorium; joints sheathing above, and somewhat pelviform. Flowers terminal and lateral, usually by threes, small, and conspicuous.

1 A. Oxycéd'rei (Bieb. fil. taur. suppl. p. 629. Hook. fl. bor. amer. 1. p. 278. t. 99.) P. H. Native from Spain, near Lescorial, to Iberia, near Tiflis and Gandscha, on Juniperus Oxycéd'rus; and of North America, on the west side of the Rocky Mountains, on Pinus ponderosâ; and from the Spoken River to the west side of the Rocky Mountains, on Pinus Banksiâ, in lat. 47°, to the Rocky Mountains and thence to Hudson's Bay on the east, in lat. 57°. In America the female plants grow on Pinus Banksiâ, and the male ones on Pinus ponderosâ. Razumov'ska Cauca'ska, Hoffm. Hort. mosq. 1805. intr. no. 1. f. 1. Viscum Oxycéd'ri, D. C. fil. fr. ed. 3. no. 3400. Stev. soc. mosq. 4. p. 71. Bieb. fil. taur. 2. p. 406.—Viscum in Oxycéd'ro, Clus. hist. 1. p. 39. Lob. icon. 2. p. 213. f. 2. This is a very singular parasitical plant. The American plants become yellowish when dried, and the European ones become blackish-green.

Red-cedar Arceuthobium. Shrub par.

Cult. This curious plant is not cultivable, unless the trees or shrubs on which it grows could be imported with the plant growing upon them.

LIN. SYST. Diocèa, Tetrándria? Flowers dioecious; male ones unknown; female ones having the tube of the calyx adnate to the ovary, and furnished with 3 long plumose bristles on the outside, alternating with 3 bracteas, which are adnate to the calyx; limb of calyx minute, truncate. Fruit an oblong triquetrous indelisent urticulus, crowned by the permanent limb of the calyx. Seed one; albumen fleshy.—Small smooth parasitical shrubs, with the habit of Viscum.

§ 1. Plant leafless.

1 M. punctulatum (Banks, mss. ex. D. C. prod. 4. p. 286.) plant leafless; branches terete, rugged from dots; bracteas alternate along the branches, half stem-clasping, ovate, obtuse; flowers 1-2, sessile in the axils of the bracteas. γ. P. S. Native of America, on trees. D. C. coll. mem. vi. t. 11.

Var. a, Magellànium. γ. P. H. Native of the Straits of Magellan. Viscum flavescens, Comm. herb.

Var. b, subumbellatum. γ. P. G. Native of the north-west coast of America, in Statenland. It differs from var. a in the branches being thicker and somewhat umbellate.

Dotted-branched Misodendron. Shrub par.

§ 2. Plants furnished with leaves. Branches alternate, bearing each one articulated leaf at the apex.

2 M. Brachystachyum (D. C. coll. mem. vi. t. 12. f. 1.) branches alternate, bearing each an obovate or oval obtuse leaf at the apex; spikelets few-flowered, bracteas, rising from the branches beneath the leaves; fruit ovate. γ. P. H. Native of the north-west coast of America, in Statenland. Leaves 3-5 lines long, and 2-5 broad, flat, nerveless. Flowers and fruit not sufficiently known, and therefore the genus is doubtful.

Short-spiked Misodendron. Shrub par.

3 M. ? Quadrifidum (D. C. coll. mem. iv. t. 12. f. 2.) branches alternate, each bearing an oblong-obovate suberelinated leaf at the apex, and 4 sessile unilateral flowers on the upper side. γ. P. H. Native of North America, in Statenland. This is very like the preceding species in habit, but differs in the flowers and fruit being unilateral. Calyx triquetrous, dehiscing at the sides.

Four-flowered Misodendron. Shrub par.

§ 3. Plants furnished with leaves. Leaves alternate. Branches floriferous at the apex.

4 M. oblongifolium (D. C. prod. 4. p. 671.) branches clothed with fine velvety down; leaves oblong-lanceolate, cuneated at the base, 3-nerved, glabrous; spikes bearing each one leaf at the base, conforming to the others. γ. P. G. Native of Chili (Bertero), and of Chiloë (Cuming). Genus novum, n. 1. Poepp. pl. exsic. no. 813. Flowers bracteas, with 8-10 distant ones in each spike.

Oblong-leaved Misodendron. Shrub par.

5 M. linearefolium (D. C. prod. 4. p. 671.) plant glabrous; leaves linear, acute; flowers sessile, solitary at the axils of the leaves in the flowering branches. γ. P. G. Native of Chili, where it was collected by Poeppig. Genus novum, n. 2. Poepp. pl. exsic. no. 800.

Linear-leaved Misodendron. Shrub par.

6 M. microphyllum (Hook. et Arnh. in bot. misc. 3. p. 357.) leaves minute, linear; flowers sessile, solitary at the axils of the leaves; branches pubescent. γ. P. G. Native of Chili, in the province of Maule. Closely allied, but apparently quite distinct from the preceding species.

Small-leaved Misodendron. Shrub par.

Cult. These are singular shrubs, similar to the Mistletoe, but not cultivable in gardens.

IV. LORANTHUS (from lorum, a lash made of leather, and aνθος, anthos, a flower; alluding to the long linear shape and leathery substance of the petals). Mart. in D. C. prod. 4. p. 671.—Loranthus species of Lin. and others.

LIN. SYST. Penta-Hexàndria, Monogónía. Flowers dioecious or hermaphrodite. Calyx cup-shaped, adnate, with an entire border. Petals 5-6 (f. 74. a. d.), linear, reflexed. Stamens inserted into the middle of the petals; filaments short; anthers globose, dinsuous, having the cells dehiscing in front towards the connecting part. Style thickish; stigma simple. Berry globose (f. 74. e.), umbilicate by the calyx, 1-celled, 1-seeded as in the rest of the genera, broken off from the present.—Parasitical shrubs. Spikes axillary and terminal, simple. Flowers immersed in the fleshy rachis, each propped by a somewhat orbicular bractea at the base.

1 L. Europaeus (Lin. spec. 1672.) plant glabrous, much branched; branches terete; leaves opposite, petiolate, oval-oblong, obtuse, somewhat attenuated at the base; racemes terminal, simple; flowers dioecious, of 6 petals; anthers adnate in the male flowers. γ. P. H. Native of Austria, Hungary, Italy, and Upper Siberia, parasitical on oak and sweet-chestnut trees. Jacq. fl. austr. t. 30. Schkuhr, handb. t. 94. Sturm, fl. germ. with a figure. Plenck. icon. t. 248. Habit of Viscum album. Flowers greenish. Berries oval, white or yellowish. This is the Viscum or Mistletoe of the ancients.

European Loranthus. Shrub par.

2 L. odoratus (Wall. in Roxb. fl. ind. 2. p. 215.) glabrous; branches terete; leaves nearly opposite, ovate-lanceolate, fleshy; spikes axillary, subfascicled, with a foveolate fleshy rachis, and jointed sessile subimmersed spreading 6-petalled hexandrous flowers; anthers ovate, inserted by the base; style shorter than the petals. γ. P. G. Native of Nipaul, on the mountains of Chandigiri and Sheeppore, parasitical on trees. D. Don, prod. fl. nep. p. 143. Schultes, syst. 7. p. 101. D. C. prod. 4. p. 294. Leaves pale green, at length becoming yellowish, from 4 to 6 inches long. Spikes shorter than the leaves, many flowered, almost sessile. Flowers small, nearly white, very sweet-scented, at first claveate, but at length spreading; petals cuneate, slightly concave at the apex. Óvarium supported by no other bractea than the acute margin of the foveola of the rachis.

Sweet-scented-flowered Loranthus. Shrub par.

3 L. lamberthianus (Schultes, syst. 7. p. 118.) glabrous, dichotomously branched; leaves opposite, on very short petioles, ovate-lanceolate, narrowed at both ends, acute, nerved; spikes terminal, solitary; flowers half immersed in the foveolate rachis, 5-petalled; anthers fixed by the base. γ. P. G. Native of Nipaul. Habit of L. Europaeus.

Lambert’s Loranthus. Shrub par.

Cult. The species have the habit of common mistletoe, but are not cultivable in gardens on account of their being parasitical.

V. STRUTHA’NTHUS (from στρούθος, strouthos, a sparrow, and ανθος, anthos, a flower; some of the species are called Erva de Passerinho and Herba dos Passeros, i.e. Sparrow-plant, in South America). Mart. in D. C. prod. 4. p. 671.—Loranthus species of authors.

LIN. SYST. Hexàndria, Monogónía. Flowers hermaphrodite, almost always 6-parted (except in one species, which is 4-parted).
and dicteous, and in another 5-parted). Calyx angular, small, hemispherical, with an extended truncate margin. Petals linear, distinct from each other a long way at the base, and at length revolute at the apex; anthers ovate, fixed by the back near the base or beneath the middle; filaments short, inserted beneath the middle of the petals. Ovary ovate-globose. Style subulate. Berry ovate-elliptic.—Parasitical shrubs. Racemes terminal or lateral, solitary or aggregate in the axils, having the rachis for the most part angular or 2-edged. To this genus belongs the greater part of the sections Stachyaphyton and Protostelides of Loranthus, D. C. prod. 4. p. 287 and 289. particularly the Brazilian species.

 Sect. I. Stachyaphyton (from σταχύς, stachys, a spike, and ἀνθος, anthos, a flower; flowers sessile, disposed in spikes). Flowers sessile along the rachis, and sometimes immersed in spots on it, spicate, solitary or by threes, usually furnished with 3 bracteas each.

1 S. Alveolatus; plant glabrous, much branched; branches terete; leaves petiolate, roundish-ovate, rather oblique, obtuse, somewhat coriaceous; spikes axillary, 1-3-together, without joints, somewhat tetragonal; flowers disposed in 4 rows on the spikes, immersed in spots in the rachis; petals linear-lanceolate. ʃ. P. S. Native of South America, near Popayan and Carthage, parasitical on Crescentia Cofete. Loranthus alveolatus, H. B. et Kunth, nov. gen. amer. 3. p. 444. Loranthus rotundolobus, Bonpl. herb. Schultes, syst. 7. p. 154. Leaves 2 inches long, and ½ broad, on petioles 2 lines long. Spikes an inch or an inch and a half long. Corolla greenish white. Perhaps a true species of Loranthus.

Alveolate-spiked Struthanthus. Shrubs par.

2 S. Pertrygopus; plant glabrous; branches compressed at the apex; leaves opposite, on short petioles, ovate, acuminate, coriaceous; spikes axillary, solitary, longer than the leaves; peduncles compressed, winged; flowers by threes, sessile; petals 6, linear-lanceolate. ʃ. P. S. Native of Brazil, in the provinces of Minas Geraes and Bahia, on trees in the woods. Loranthus pterygopus, Mart. in Schultes, syst. 7. p. 153. Flowers semi-linear. Anthers roundish-ovate.

Wing-stalked Struthanthus. Shrubs par.

3 S. Uruguayensis; plant glabrous, erect; branches terete; leaves alternate, oblong-lanceolate, cuspitate by a point at the apex, attenuated into the petiole at the base; peduncles 1-2, axillary, equal in length to the leaves, forked above the middle; pedicels furnished with 3 bracteas and 3 flowers at the apex; flowers sessile; petals 5, linear, nearly free; filaments shorter than the petals; anthers ovate, crept; stigma capitatte; berries egg-shaped. ʃ. P. G. Native of South America, upon laurels and myrtles, on the banks of the Uruguay. Loranthus Uruguayensis, Hook. et Arn. in bot. misc. 3. p. 358. In many points it resembles Loranthus flaggallaris, Cham. et Schlecht.

 Uruguay Struthanthus. Shrubs par.

4 S. Podopterus; plant glabrous, erect; branches terete; leaves alternate, when young angularly compressed; leaves elliptic, attenuated at both ends, feather-nerved, reticulated above; spikes axillary and terminal, flexuous, pedunculate; flowers by threes, immersed in the rachis, which is winged; corolla 6-parted, with linear lobes; anthers inserted by the base; stigma capitata. ʃ. P. S. Native of Brazil. Loranthus podopterus, Cham. et Schlecht. in Linnean. 3. p. 218. Loranthus acutus, Pohl, in litt. Leaves 3½ inches long, and ½ broad, on petioles 2 lines long. Corolla a line long.

Winged-peduncled Struthanthus. Shrubs par.

5 S. Obolongus; plant glabrous; branches terete; branchlets compressed; leaves oblong, nearly elliptic, obtuse, cuneated at the base, and 5-5-nerved; nerves slender, reticulately branched; spikes axillary, very short, few-flowered. ʃ. P. S. Native of Brazil. Loranthus oblongus, Schott. and Pohl, in litt. ex D. C. prod. 4. p. 287. Leaves 2 inches long, and 8 lines broad; petioles and spikes about 2-3 lines long. The nervation of the leaves is very distinct from the other species, but the young flowers are not described. It is probably a species of Viscum.

Oblong-leaved Struthanthus. Shrubs par.

6 S. Occidentalis; branches terete, scabrous; leaves ovate-roundish or elliptic, margined, glabrous, feather-nerved at the base, on very short petioles; spikes axillary, simple, shorter than the leaves, nearly terete; flowers almost sessile, furnished with a small very blunt bracta each; petals 6, rather connate at the base; stamens 6, 3 fertile and 3 sterile. ʃ. P. S. Native of Jamaica, on trees, and of many other of the West Indian Islands. Loranthus occidentalis, Lin. amen. 5. p. 396. Swartz, obs. 138. Schultes, syst. 7. p. 146. Sloan. jam. 2. t. 100. f. 2. Scúrrula 2. Brown, jam. 197. Leaves 15-16 lines long, and 8-9 broad. Spikes an inch long. Flowers 2 lines long. Berries roundish.

Western Struthanthus. Shrubs par.

7 S. Polystachyus; plant glabrous; branches terete, but compressed at the articulations; leaves petiolate, ovate-lanceolate, acute, thick, veiny; spikes axillary, by threes, one-half shorter than the leaves, diverging; flowers by threes, sessile, opposite; petals 6. ʃ. P. G. Native of Peru, in groves on the Andes upon trees and shrubs. Loranthus polystachyus, Ruiz et Pav. fl. per. 3. p. 50. Schultes, syst. 7. p. 155. Leaves as in many other species about 2 inches long. Flowers small, purple. Bracteas semijamilar, hardly conspicuous. Berries oval, brownish-yellow.

Many-spiked Struthanthus. Shrubs par.

8 S. Patrisii; plant glabrous; branches terete, but when young compressed; leaves opposite, petiolate, oval-oblong, obtuse at the base, acuminate at the apex, of the consistence of parchment, feather-nerved; spikes axillary, simple, shorter than the leaves; ultimate ones disposed in a terminal panicle; flowers distant along the rachis, sessile, bractless; fruit oblong, spreading, truncate at the apex. ʃ. P. S. Native of French Guiana, where it was collected by Patris. Loranthus Patrisii, D. C. prod. 4. p. 288. Leaves 4½ inches long, and 1-2 broad, rather glaucous above, and rufescent beneath, on petioles 2 lines long. Berries tetragonally compressed while young, 3 lines long. Flowers unknown, therefore it is doubtful whether it belongs to this genus or not.

Patrius's Struthanthus. Shrubs par.


Stem-clasping-leaved Struthanthus. Shrubs par.

10 S. Marginatus; plant glabrous, somewhat scandent; branches terete, when young compressed; leaves ovate-cuneate, emarginate, on very short petioles, without any lateral nerves; spikes axillary and terminal, tetragonal, rather shorter than the leaves; flowers opposite, bractless, nearly sessile; petals 6, lanceolate, distinct; anthers 6, 3 of which are acuminate and sterile, and the 3 fertile ones roundish. ʃ. P. S. Native of Hispaniola, Porto-Rico, and Guadaloupe, on the mountains, parasitical on trees. Loranthus marginatus, Swartz, prod. p. 58. fl. ind. occ. p. 625. Schultes, syst. 7. p. 152. Berries black, elongated.

Emarginate-leaved Struthanthus. Shrubs par.

11 S. Spathicus; plant glabrous; branches terete; leaves ob-
V. Struthanthus.

Native of South America, amongst the bushes and woods of Carthagen.  

Loranthus spicatus, Jacq. amer. p. 97. t. 68.  

Flowers small, red. Berries green, red at the apex.  

Schultes, syst. 7. p. 151.

Var. β. athroanths (E. Meyer, nov. act. bonn. 12. p. 788.)  

lower spikes axillary, superior ones crowded in racemes, leafless.  

P. S.

Spiked-flowered Struthanthus.  

Schultes par.

12 S. leptostachys; plant glabrous; branches somewhat tetragonal; leaves petiolate, ovate-elliptic, acuminate, rounded at the base, rather coriaceous; spikes axillary, thin or torn, 2 or 3 times shorter than the leaves; flowers sessile, scattered, distant; rachis compressed, rather quadrangular; petals 6, lanceolate-linear, spreading.  

P. S. Native of the Andes of Quindiu, between Carthagen and Buga.  

Loranthus leptostachys, H. B. et Kunth, nov. gen. amer. 3. p. 440.  

Schultes, syst. 7. p. 154.  

Leaves 5 inches long, and 2½ broad.  

Spikes 1½ to 2½ inches long.  

Flowrs hardly 2 lines long.

Slowd-spiked Struthanthus.  

Schultes par.

13 S. ovatifolius; plant glabrous, herbaceous; stem terete, quite simple, erect; leaves oval, thick, nearly veinless, on short petioles, obtuse or emarginate; spikes axillary, 1-2, twice the length of the petioles; flowers sessile, bracteolate; petals 6, linear, retroflexed at the apex.  

P. S. Native of Peru, on the Andes in groves, upon trees and shrubs.  

Loranthus ovatifolius, Ruiz et Pav. fl. per. 3. p. 50. t. 277.  

Schultes, syst. 7. p. 151.  

Herb a foot high. Flowers much crowded, small, purple.  

Berry oval, of an obscure purple colour.

Oval-leaved Struthanthus.  

Schultes par.

14 S. marginatus (Lam. dict. 3. p. 596.) plant glabrous; branches terete; leaves ovate-lanceolate, acuminate, petiolate, with scarious margins, having the middle nerve rather prominent, and the lateral ones wanting; spikes axillary, solitary, opposite, shorter than the leaves; flowers by threes in a fascicle along the rachis, bracteolate; corolla 6-parted, with linear segments; anthers very caducous; stigma capitulate.  

P. S. Native of Brazil.  

Loranthus marginatus, Lam. dict. 3. p. 596.  

Schultes, syst. 7. p. 157.  

L. avium, Pohl, in litt. Leaves 2 inches long, and 9-10 lines broad; petioles 2-3 lines long.  

Corolla 2-5 lines long.

Marginate-leaved Struthanthus.  

Schultes par.

15 S. concinnus; plant glabrous; branches slender, terete; leaves opposite, lanceolate, acuminate, membranous, shining above; spikes axillary and terminal, solitary, interrupted, shorter than the leaves; flowers by threes, opposite, sessile, somewhat verticillate, bracteate; petals 6, linear, reflexed.  

P. S. Native of Brazil.  

Loranthus concinnus, Mart. in Schultes, syst. 7. p. 150.  

Flowers a line and a half long, clavate in the unexpanded state. Anthers ovate.

Neat Struthanthus.  

Schultes par.

16 S. nitens; plant glabrous; branches terete, rooting on one side; leaves alternate, ovate-lanceolate, acuminate, shining, membranous; spikes racemose, interrupted, lower ones axillary, solitary; superior ones panicled; flowers by threes, sessile, bracteate; petals 6, linear-lanceolate.  

P. S. Native of Brazil, in the province of Rio Negro, in woods at Ega.  

Loranthus nitens, Mart. in Schultes, syst. 7. p. 150.  

Flowers a line and a half long, clavate in the unexpanded state. Anthers ovate, excavated at the side of the filaments.

Shining Struthanthus.  

Schultes par.

17 S. subcamptostachys; branches terete, beset with rusty dots at the apex, compressed; leaves opposite, ovate-elliptic, obtuse, coriaceous, nervled, glabrous; spikes 1-2, axillary, interrupted, one-half shorter than the leaves; flowers nearly opposite, by threes, sessile, bracteate, small; petals 6, linear-lanceolate.  

P. S. Native of Brazil, in the province of Minas Geraes.  

Flowers half a line long. Anthers ovate.  

Loranthus subcampestris, Mart. in Schultes, syst. 7. p. 151.

Field Struthanthus.  

Schultes par.

18 S. affinis; branches terete, compressed at the apex, and beset with rusty dots; leaves nearly opposite, ovate-elliptic, acuminate, coriaceous, nervecl, glabrous; spikes axillary, solitary, interrupted, not half so long as the leaves; flowers by threes, sessile, retroflexed, bracteate, small.  

P. S. Native of Brazil, in the woods of Japura, in the province of Rio Negro.  

Loranthus affinis, Mart. in Schultes, syst. 7. p. 151.  

Very like the preceding species.

Allied Struthanthus.  

Schultes par.

19 S. anceps; branches compressed, 2-edged, green; leaves on short petioles, elongated, ovate-obtuse; spikes on short peduncles, solitary, axillary, much shorter than the leaves; flowers small, somewhat imbricate.  

P. S. Native of Guiana.  

Loranthus anceps, Desv. in Hamilt. prod. p. 33.  


The rest unknown.

Two-edged-branched Struthanthus.  

Schultes par.

Sect. II. Protostelides (meaning unknown to us).  


Flowers of 6 petals, racemose or panicled; the branches of the panicles or racemes usually bearing 3 flowers and 3 bracteas at the apex.  

—Species all natives of South America.

20 S. ruifexus; branches terete; leaves nearly opposite, on short petioles, ovate-oblong, long-acuminate, coriaceous; spikes terminal, panicled; rachis beset with rusty dots; pedicels very short, bearing 3 flowers and 3 bracteas each; petals 6, linear, anthers roundish-ovate.  

P. S. Native of Brazil, in the province of Rio Negro, in the woods of Japura.  

Loranthus ruifexus, Mart. in Schultes, syst. 7. p. 130.  

Flowers a line and a half long, white.

Ruifexus-branched Struthanthus.  

Schultes par.

21 S. aviculiius; plant glabrous; young branches tetragonal; leaves nearly opposite, ovate, rather acuminate, coriaceous; panicles axillary and terminal, solitary, diffuse, longer than the leaves; peduncles opposite, bracteate at the base; flowers by threes, sessile, 3 bracteate; petals 6, linear-lanceolate.  

P. S. Native of Brazil, frequent, where it is called Erva de Passerinho.  

Loranthus aviculiius, Mart. in Schultes, syst. 7. p. 132.  

Flowers a line and a half long. Filaments of stamens excavated on the side at the apex.

Knot-grass-like Struthanthus.  

Schultes par.

22 S. Theobromae; branches tetragonal, but at length becoming terete, rather radican; leaves ovate, acuminate, on short petioles; panicles axillary and terminal, longer than the leaves; pedicels very short, 3-flowered at the apex.  

P. S. Native of Brazil, at Para, upon trees of Theobroma Cacao, where it is called Herba dos Passeros.  

Loranthus Theobromae, Willd.  

ex Schultes, syst. 7. p. 132.  

According to Schultes, this is probably the same as the preceding species.

Cacao Struthanthus.  

Schultes par.

23 S. virgatus; plant glabrous; branches radican, tetragonal at the apex; leaves opposite, ovate, acuminate, complicate, rather coriaceous; panicles axillary, solitary, twiggy, 3 times longer than the leaves; having the branches tetragonal, and bracteate at the base, and the brachotears short and bearing 3 flowers at the apex, and 3 bracteas; petals 6, linear-lanceolate.  

P. S. Native of Brazil, in the province of Rio Negro, in woods about Japura.  

Loranthus virgatus, Mart. in Schultes,
syst. 7. p. 132. Flowers half a line long. Filaments of stamens excavated at the side at the apex.

*Twigg* Struthanthus. Shrub par.

24 S. *Deppeanus*; glabrous; branches rather radican; leaves almost opposite, petiolate, ovate-lanceolate, acuminate, somewhat 3-nerved; racemes 1-2, axillary; peduncles 3-flowered, bractless; flowers pedicellate; anthers linear, fixed by the base. ♂ P. S. Native of Mexico, near Jalapa. *Loranthus* Deppeanus, Cham. et Schlecht. in Linnaea. 5. p. 172. Style twisted in a circinate manner at the apex.

*Deppe’s* Struthanthus. Shrub par.

25 S. *Erythrocarpus*; plant glabrous; branches terete; leaves nearly opposite, ovate-lanceolate, acuminate, attenuated at the base, coriaceous, vein, racemes 1-3 together, rather spicate, interrupted, axillary, and terminal: having very short branchlets, which bear 3 flowers and 3 bracteas at the apex; petals 6, linear. ♂ P. S. Native of Brazil, in the province of Rio Negro, on trees. *Loranthus* erythrocarpus, Mart. in Schultes, syst. 7. p. 138. Anthers ovate. Berries orange-coloured.

*Red-fruit* Struthanthus. Shrub par.

26 S. *Citricula*; plant glabrous; branches terete; leaves rather alternate, ovate, somewhat acuminate, and obtuse, sub-erect, vein, racemes axillary and terminal, shorter than the leaves: superior ones solitary, but the lower ones are somewhat verticillate; branches of racemes short, opposite, bearing each 3 flowers at the apex and 3 bracteas. ♂ P. S. Native of Brazil, near Rio Janeiro, on trees of the orange tribe, where it is called *Hecera de Passerinho*. *Loranthus* citricula, Mart. in Schultes, syst. 7. p. 137. Perhaps the same as *S. marginatus*.

*Orange* Struthanthus. Shrub par.

27 S. *Flexicaulis*; plant glabrous; branches sarmentose, radican; leaves almost alternate, oblong, obtuse, with a mucron, tapering at the base, flat, reflexed; racemes 1-2 together, axillary, erect, shorter than the leaves: having short, opposite, 3-flowered, tribracteate branchlets; petals 6 linear, spreading above the middle. ♂ P. S. Native of Brazil, in the fields of Taboleira, in the province of Minas Geraes. *Loranthus* flexicaulis, Mart. in Schultes, syst. 7. p. 139. Flowers yellowish, a line long, clavate in the unexpanded state.

*Bent-stemmed* Struthanthus. Shrub par.

28 S. *Polyrhizos*; plant glabrous; branches scendent, rooting; leaves subalternate, ovate, emarginate, flat, vein, racemes axillary, solitary, compound, erect, one-half shorter than the leaves: having the branchlets tetragonal, and bearing 3 flowers at the apex and 3 bracteas; petals 6, reflexed from the middle. ♂ P. S. Native of Brazil, in the province of Bahia, in the woods. *Loranthus* polyrhizos, Mart. in Schultes, syst. 7. p. 139. Flowers 2 lines long, green. Anthers ovate.

*Many-rooted* Struthanthus. Shrub par.

29 S. *Tetragueter*; plant glabrous; branches comparatively tetragonal, scendent, rooting; leaves nearly opposite, ovate, obtuse, reflexed, rather coriaceous; racemes 2-3, axillary: having very short, nearly opposite 3-flowered tribracteate branchlets; petals 6, linear, hardly reflexed, spreading. ♂ P. S. Native of Brazil, in the province of Minas Geraes, on trees. *Loranthus* tetragueter, Mart. in Schultes, syst. 7. p. 140. Flowers hardly a line long, roundish in the unexpanded state.

*Four-sided* Struthanthus. Shrub par.

30 S. *Staphyleus*; plant glabrous; branches compressed at the apex; leaves nearly opposite, ovate or emarginate, attenuated at the base, flat, coriaceous, nerved; racemes axillary, solitary, longer than the leaves: having short bent branchlets, each bearing 3 flowers and 3 bracteas at the apex; petals 6, linear, reflexedly spreading. ♂ P. S. Native of Brazil, in the province of Rio Negro. *Loranthus* staphylinus, Mart. in Schultes, syst. 7. p. 290. Flowers a line long. Anthers roundish-ovate. *Staphylea-like* Struthanthus. Shrub par.

31 S. *Cuspidatus*; plant glabrous; branches rooting, terete; leaves nearly opposite, obvoate, attenuated at the base, cuspidate at the apex, coriaceous, glaucous; racemes axillary, solitary, about equal in length to the leaves, few-flowered; having the branchlets 3-flowered at the apex, and tribracteate; petals 6, linear, reflexed from the middle. ♂ P. S. Native of Brazil, in the woods about Pianhi. *Loranthus* cuspidatus, Mart. in Schultes, syst. 7. p. 140. Flowers 2 lines long, clavate in the unexpanded state. Anthers ovate.

*Cuspidate* Struthanthus. Shrub par.

32 S. *Longipesdeculatus*; plant glabrous; branches terete; leaves opposite, oblong-ovate, acuminate, attenuated at the base, rather coriaceous, nerved; racemes axillary, solitary, longer than the leaves: with few branchlets, bearing each 3 flowers at the apex and 3 bracteas; petals 6, linear, spreading above the middle. ♂ P. S. Native of Brazil, in the province of Bahia. Flowers 4 lines long, of a pale greenish colour. Anthers ovate. *Loranthus* longipesdeculatus, Mart. in Schultes, syst. 7. p. 141. Long-peduncled Struthanthus. Shrub par.

33 S. *Syringaefolius*; plant glabrous; branches unknown; leaves opposite, petiolate, ovate, rather coriaceous, ending in a long taper point; racemes axillary, solitary, panicled, shorter than the leaves; peduncles compressed tetragonal: with the branchlets short, thick, and bearing 3 flowers at the apex and 3 bracteas; petals 6, linear. ♂ P. S. Native of Brazil, in the province of Rio Negro, in the woods. *Loranthus* syringaefolius, Mart. in Schultes, syst. 7. p. 141. Racemes 1½ to 2 inches long. The unexpanded flowers dilated into a somewhat hexagonal club. Anthers erect, hastate at the base.

*Syringa-leaved* Struthanthus. Shrub par.

34 S. *Patens*; plant glabrous; branches terete; leaves opposite, lanceolate, thin, ending in a long taper point; racemes axillary, solitary, spreading, exceeding the leaves a little; pedicels 3-flowered; flowers pedicellate; bracteas very minute, orbicular; petals 6, nearly linear, reflexed above the middle. ♂ P. S. Native of Brazil, in the province of Minas Geraes. *Loranthus* patens, Mart. in Schultes, syst. 7. p. 142. Flowers 4½ lines long, tubularly club-shaped in the unexpanded state. Anthers ovate.

*Spreading* Struthanthus. Shrub par.

35 S. *Elegans*; plant glabrous; branches terete at the base, but compressed at the apex; leaves nearly opposite, somewhat ovate, rather coriaceous, terminating in a short reflexed acumen; racemes axillary, solitary, twice the length of the leaves: having the branchlets opposite, and bearing 3 flowers at the apex, without any bracteas; petals 6, linear-lanceolate. ♂ P. S. Native of Brazil. *Loranthus* elegans, Mart. in Schultes, syst. 7. p. 144. Flowers white, a line and a half long, of a roundish club-shaped form at the apex in the unexpanded state. Anthers ovate.

*Elegant* Struthanthus. Shrub par.

36 S. *Rubens*; plant glabrous; branches terete, radican; leaves opposite, somewhat reflexed, lanceolate, attenuated at both ends, nerved, somewhat undulate; racemes shorter than the leaves: and the peduncles are trifid: branchlets short, nearly opposite, bearing 3 flowers at the apex, and 3 bracteas. ♂ P. S. Native of Brazil, in the province of Rio Negro, in the woods of Japura. *Loranthus* rubens, Mart. in Schultes, syst. 7. p. 144. Flowers unknown. Berries ovate-oblung, umbilicate, 3-4 lines long.

*Reddish* Struthanthus. Shrub par.

37 S. *Polyanthos*; plant glabrous; branches terete; leaves opposite, lanceolate, mucronately acuminate, flat, coriaceous;
races axillary, many-flowered, about equal in length to the leaves: branches 3-flowered at the apex, and tribracteate; bracteas ovate, acute; petals linear, reflexed from the middle.  

**P. P. S.** Native of Brazil, in the province of Bahia, in the woods called Catingas. Loranthus polyanthos, Mart. in Schultes, syst. 7. p. 145. Flowers yellowish, 2 lines long. Anthers ovate.

**Many-flowered Struthanthus.** Shrub par.

38 **S. PANICULATUS;** plant glabrous; branches terete; floreforous branches tetragonal; leaves petiolate, ovate-elliptic, acute at both ends, rather coriaceous; panicles terminal, branched, dentate: branches very short, bearing 3 flowers and 3 bracteas at the apex.  

**P. P. S.** Native of South America, on trees near Cumana, where it is called *Paxariro.* Loranthus paniculatus, H. B. et Kunth, nov. gen. amer. 3. p. 442. Flowers unknown. Berries oblong. Loranthus tetragnos, Wildl. rel. in Schultes, syst. 7. p. 131. Perhaps the same as *S. Orinocensis.*

**Panied Struthanthus.** Shrub par.

39 **S. ORINOCENSIS;** plant glabrous; branches somewhat tetragonal; leaves petiolate, ovate-elliptic, acuminate, rounded at the base, and somewhat complicate, rather coriaceous; racemes axillary and terminal, exceeding the leaves, panically disposed, diffuse: branches short, bearing 3 bracteas and 3 flowers; flowers sessile; petals 6, linear-lanceolate, 3 of which are coherent; filaments broad; anthers adnate.  


**Orinoco Struthanthus.** Shrub par.

40 **S. PHILLIREOIDEIS;** plant glabrous; branches elongated, filiform; leaves oblong, acute, rather coriaceous, running into the short petiole at the base, veinless, with the middle nerve rather prominent beneath; peduncules axillary, rather dichotomous, 2-5 times shorter than the leaves; flowers sessile, usually by threes; tribracteate; petals 6, linear, spreading; anthers adnate, mucronate.  

**P. P. S.** Native of South America, parasitical on trees, near Cumana, where it is called by the natives *Guate-Paxariro.* Loranthus phillireoides, H. B. et Kunth, nov. gen. amer. 3. p. 439. Schultes, syst. 7. p. 122. Leaves 9-10 lines long, and 2-3 broad. Flowers small.

**Phyllirea-like Struthanthus.** Shrub par.

41 **S. MICROPHYLLUS;** plant clothed with hairy pubescence; branches terete; branches very short, bearing leaves and flowers at the apex: leaves oblong, obtuse, rather mucronate, sessile, thickish, canescent; flowers sessile, crowded, axillary, and terminal; petals 6-7, lanceolate-linear, rather concretes at the base; filaments adnate to the petals, nearly to the apex; anthers adnate, mucronate.  

**P. P. S.** Native of Mexico, near Guanacava, on the mountains. Loranthus microphyllus, H. B. Kunth, nov. gen. amer. 4. p. 291. Leaves 4 lines long and 1½ broad. Flowers hardly 2 lines long, pubescent on the outside.

**Small-leaved Struthanthus.** Shrub par.

42 **S. RARIUSCULUM;** plant glabrous; branches terete, while young angularly compressed; leaves attenuated at the base, on short petioles, obuse at the apex, nervless; peduncules axillary, opposite, trifid, 3-flowered, 3 times shorter than the leaves; petals 6, lanceolate, acute; stamina shorter than the petals.  

**P. P. S.** Native of the higher mountains of Jamaica, upon the branches of trees. Loranthus parvifolius, Swartz, prod. p. 58. fl. ind. occ. p. 628. Schultes, syst. 7. p. 120. Leaves 6 lines long, and 3 broad. Corolla 2 lines long. Berry oblong, black.

**Small-leaved Struthanthus.** Shrub par.

43 **S. rotundifolius;** stems diffuse; leaves roundish, glabrous; flowers axillary, crowded, tribracteate, hexadrous; peduncles short, many-flowered.  


**Round-leaved Struthanthus.** Shrub par.

44 **S. SYRIIFOLIUS;** glabrous, pendulous; branches terete, compressed at the nodes; leaves petiolate, oblong, obtuse, acute at the base, rather membranous, compacted; racemes axillary and terminal: branches very short, nearly opposite, tribracteate, 3-flowered; flowers sessile; petals 6, lanceolate.  


**Pear-leaved Struthanthus.** Shrub par.

45 **S. SUBROSTANUS;** plant glabrous, twining; branches terete; leaves alternate or opposite, petiolate, ovate-orbicular, ending in a short mucronate acumen, feather-nerved, shining above, coriaceous; racemes axillary, solitary, about equal in length to the leaves, or twin one shorter than the other: branches opposite, bearing 3 sessile flowers and 3 bracteas at the apex; petals 6, linear, somewhat conereate at the base; filaments a little shorter than the petals, anthers ovate, erect.  

**P. P. S.** Native of Brazil, where it was collected by Schott. Loranthus subrostanus, Pohl, in litt. ex D. C. prod. 4. p. 292. Leaves 15-18 lines long, and 10-12 broad; petioles 5-6 lines long. Corolla 3 lines long. Style filiform; stigma simple, not capitate.

**Roundish-leaved Struthanthus.** Shrub par.

46 **S. GLOMERATUS;** plant glabrous; branches terete, radiant; leaves opposite, on short petioles, ovate, ending in a short acuminate acumen, glaucous, coriaceous; peduncles very short, axillary, glomerate, bifid; flowers by threes, sessile, tribracteate; petals 6, linear, reflexed from the middle; anthers ovate; style equal in length to the petals.  

**P. P. S.** Native of Brazil, in the provinces of the Mines. Loranthus glomeratus, Mart. in Schultes, syst. 7. p. 121. Flowers yellowish green, 2 lines long.

**Gloeromate-flowered Struthanthus.** Shrub par.

47 **S. CONFERTUS;** plant glabrous; branches radiant, terete; leaves opposite, ovate or roundish, obtuse, with a short acuminate, coriaceous, nerved; peduncles axillary, crowded, dichotomous, simple; flowers by threes, sessile, tribracteate; petals 6, spreadingly reflexed, linear; anthers ovate; style one half shorter than the petals.  

**P. P. S.** Native of Brazil, on trees of the orange tribe. Loranthus confertus, Mart. in Schultes, syst. 7. p. 121.

**Crowded-peduncled Struthanthus.** Shrub par.

48 **S. Perrottetii;** plant glabrous; branches terete, but rather compressed in the young state; leaves petiolate, ovate, or oval, obtuse, coriaceous, feather-nerved; racemes twin, unequal, simple, axillary; with the branches bearing each 3 small concrete bracteas, and 3 sessile flowers; flower-buds ovate, small; berry oval.  


**Perrottet's Struthanthus.** Shrub par.

49 **S. Intermedius;** glabrous, pendulous; branches terete; leaves oblong, acute, running into the petiole at the base, rather coriaceous; racemes axillary and terminal: with short, nearly opposite, distant branches, bearing each 3 sessile flowers at the apex, without bracteas.  

**P. P. S.** Native of Mexico, near

Interrupted-spiked Struthanthus. Shrub par.

50 S. ADUNCUS: plant glabrous; branches terete, knotted, scandent; branchlets angular; leaves opposite, oblong-roundish, apiculated by a hooked point, veiny, petiolate; racemes axillary, trichotomous, or simple; flowers sessile, 3-6 together, propped by a subtriangular bract; petals 6, linear; anthers oblong. 5. P. S. Native of Guiana, on trees. Loranthus aduncus, Meyer. prim. essq. p. 149. Schultes, syst. 7. p. 147. Perhaps the racemes ought to be called spikes; or perhaps the flowers are sessile on the tops of the branchlets, not on a rachis.

Hooked-leaved Struthanthus. Shrub par.

51 S. Magdalenae: plant glabrous; branches terete, rather serpentine; leaves petiolate, ovate, acute, complicate, feather-nerved, rather coriaceous; panicles axillary, longer than the leaves, spreadingly branched; peduncles distant, bearing 3 flowers and 3 bractes at the apex; petals 6, linear; anthers erect, inserted by the base, 3 of which are drawn out in a horn? 5. P. S. Native of South America, on the banks of the river Magdalena, where it was collected by Bertero. Loranthus Magdalenae, Cham. et Schlecht. in Linnaea 3. p. 219. Wénhe Magdalenæ, Spreng. in herb. Balb. not of his syst. Leaves 20-22 lines long and 12-15 lines broad; petioles 4-5 lines long. Corolla 2 lines long.

Magdalenæa Struthanthus. Shrub par.

52 S. SESSILIS: glabrous; leaves ovate; spikes simple, solitary; flowers sessile, by three; pedicels thick, 3-flowered at the top. 5. P. S. Native of South America, in the woods of Carthagea. Loranthus sessilis, Jacq. amer. 99. Berries of reddish dirty green colour. Perhaps Loranthus sessilis, Meyer. prim. essq. p. 149 is the same as that of Jacques.

Sessile-flowered Struthanthus. Shrub par.


Mistletoe Struthanthus. Shrub par.

54 S. Pedunculatus: glabrous; branches shining; leaves cordate-ovate, ending each in a short taper point, coriaceous, shining, petiolate, feather-veined; racemes axillary, solitary, shorter than the leaves: having the rachis compressed and the branchlets 3-flowered, and the flowers pedicellate; petals 6, obtuse; stamens some of them sterile. 5. P. S. Native of the interior of Jamaica, and of Cayenne, parasitical on trees. Loranthus pedunculatus, Schwart, prod. p. 58. fl. ind. occ. 677. Schultes, syst. 7. p. 147. Loranthus occidentalis, Aubl. guian. p. 510. ex Swartz. Allied to S. occidentalis, but differs in the raceme or spike being tripartite, not simple.

Fern-flowered Struthanthus. Shrub par.

55 S. guadalupensis: glabrous; branches terete; leaves ovate, rather cordate at the base, acuminate at the apex, on very short petioles, veinless except the middle nerve; peduncles terminal, trichotomous and corymbose at the apex, about the length of the leaves; bracteae small; calyx denticulate; berry oval. 5. P. S. Native of Guadaloupe, where it was collected by Bertero. Loranthus Guadalupensis, D. C. prod. 4. p. 291. Loranthus pedunculatus, Spreng. in herb. Balb. Guadaloupe Struthanthus. Shrub par.

56 S. quercicola: glabrous; branches terete; leaves almost opposite, petiolate, ovate, acuminate, papery, reticulately veined; racemes 1-2, axillary; flowers almost sessile, by threes, opposite: anthers orbicular, fixed by the base. 5. P. S. Native of Mexico, near Jalapa, parasitical on oak and other trees. Flowers minutely bracteolate. Corolla a line and a half long. Loranthus quercicola, Cham. et Schlecht. in Linnaea. 5. p. 173.

Oak Struthanthus. Shrub par.
LORANTHACEÆ. V. STRUTHANTHUS. VI. PSITTACANTHUS. 415

leaves glabrous; branches having ovate, acute, deflexed, rather coriaceous, on short petioles, panicles axillary and terminal; with an angular rachis: and reflexed branchlets, bearing ovate, concave, deciduous bracteas, and 2-4 flowers, which stand on short pedicels; petals 6, linear, reflexed at the apex. P. S. Native of Peru, in groves on the Andes, upon trees. Loranthus retroflexus, Ruiz, et Pav. fl. per. 3. p. 49. t. 279. f. a. Schultes, syst. 7. p. 138. Leaves usually an inch and a half long and 2 inches broad; on petioles 2-3 lines long. Flowers small, purple. Berries oval, of a yellowish globose colour.

Loranthus section Oscillatiae Callanthae. D. C. prod. 4. p. 308.—Loranthus species of authors.

lin. syst. Hezändria, Monogynia. Flowers hermaphrodite, for the most part hemispherical. Calyx cup-shaped, hemispherically cyathiform, with a contracted mouth; having the border sometimes entire, and sometimes obliquely 5-6-toothed or re- pand. Petals 6, linear-spatulate, in most of the species distinct to the middle, erect, spreading, often furnished with a linear scale in the middle. Filaments filiform, rising from the base of the petals; anthers linear or oblong, fixed by the base, therefore erect: or by the back, then they are incumbent. Ovarium ovate. Style filiform; stigma capitate. Berry ovate. Pani- cles dichotomous or trichotomous, expanded or coriaceous; peduncles articulately inserted, bracteate; pedicels extended into a cup-shaped bracteole each. Flowers large, thick, deeply coloured.

P. ramificulosus; glabrous; branches terete; branchlets angular; leaves ovate, bluntish, attempted at the base; peduncles opposite, trifid, 6-flowered, spreadingly deflexed, rising beneath the leaf-bearing branches; alabastra conical; petals lanceolate-linear, acuminate; anthers versatile. P. G. Native of Mexico, parasitical on trees, on the mountains of Mahuitta. Loranthus ramificulosus, Moc. et Sesse, fl. mex. icon. inde. ex D. C. prod. 4. p. 308. Leaves 1½ inch long, and 6-7 lines broad; on very short petioles. Corolla 10 lines long, conical.

Branch-flowered Psittacanthus. Shrub par.

2 P. calyculus; glabrous; branches nearly terete; leaves opposite, ovate, or lanceolate, hardly petiolate, coriaceous, vein- less; coryms terminals, trichotomous, shorter than the leaves: having a cup-shaped bractea under each flower, as in all the rest of the species; petals 6, linear, acute; anthers versatile. P. S. Native of Mexico, about Cuacarava, where it was collected by Berlandier. Loranthus calyculus, D. C. coll. mem. vi. t. 101. Larger leaves 2 inches long and ½ broad, the rest rather smaller. Flowers of a yellowish scarlet colour, almost 2 inches long. There are 2 oblong floral leaves under each lateral branch of the coryms. Limb of calyx truncate. Allied to P. ceus. Perhaps the same as Loranthus Quaqu-chiti of Moc. et Sesse, fl. mex.

Calyculus Psittacanthus. Shrub par.

3 P. Jacquinii; glabrous; branches terete; leaves ovobovate or ovate, coriaceous, shining, on short petioles, veinless; pedun- cles axillary and terminal, cymose, shorter than the leaves: ul- timate ones trifid: having an urceolate, small bractea under each flower; petals 6, contiguous at the base, linear, revolute at the apex; alabastra curved a little; anthers oblong, versatile. P. S. Native of Jamaica, Martinique, and Brazil, parasitical on trees. Loranthus Jacquinii, D. C. prod. 4. p. 308. L. ameri- canus, Jacq. amer. p. 97. t. 67. exclusive of the synonyms. Lin. spec. 331. exclusive of the synonym of Cham. and Schlecht. in Linneae. 3. p. 210. but not of Lin. amoen. nor Swartz.


Jacquinii Psittacanthus. Shrub par.

4 P. Brasiliensis; glabrous; branches terete, compressed while young; leaves petiolate, lanceolate-ovate, obliquely nervet, thickish, shining above; peduncles trichotomous, terminal, and in the upper axis: branchlets 5-flowered; alabastra club-shaped; petals 6, linear, anthers versatile. P. S. Native of Brazil. Loranthus Brasiliensis, Desr. in Lam. dict. 3. p. 596. Schultes, syst. 7. p. 137. Habit of Avicennia tomentosa, but is perfectly glabrous. Leaves 3 or 3½ inches long, and 12-15 lines broad, on petioles 3-4 lines long. Corolla an inch and a half long.

Brazilian Psittacanthus. Shrub par.

5 P. cinctus; branches terete; leaves opposite and alternate, on very short petioles, oblong-ovate, obtuse, thick, margi- nated; racemes axillary and terminal, compound; peduncles nearly opposite, 2-flowered; bracteas cup-shaped; flowers tomentose on the outside, clavate at the apex in the unexpanded state; petals 6, nearly linear, glabrous at the base. P. S. Native of Brazil, in the province of Rio Negro, in the woods of Japura. Loranthus cinctus, Mart. in Schultes, syst. 7. p. 134. Corolla 1 or 1½ inch long, densely clothed with coloured tomentum. Anthers oblong. Style equal in length to the petals. Stigma capitate.

Girded Psittacanthus. Shrub par.

6 P. speciosus; glabrous; leaves oblong-elliptic, or lanceo- late, bluntish, cuneated at the base, coriaceous; having the middle nerve hardly conspicuous, and the lateral veins wanting; racemes unknown; alabastra cylindrical; petals 6, linear, hardly concrete at the base; anthers versatile; stigma not capitate. P. S. Native of Brazil. Loranthus speciosus, Pohl, in litt. but not Dietr. nor Wall. Leaves 3 inches long and an inch broad; pedioles hardly any. Corolla 3 inches long. It differs from P. Brasiliensis, Lam. in the alabastra not being clavate.

Showy Psittacanthus. Shrub par.

7 P. Dicksonii; glabrous; branches terete; leaves opposite, obovate, emarginate, coriaceous, hardly veined; peduncles soli- tary, axillary, dichotomous: the branches 2-3-flowered; bractea cup-shaped, shorter than the ovarium, 1-toothed; petals 6, linear, spreadingly reflexed from the middle; anthers linear-oblong. P. S. Native of Brazil, in the province of Rio Janeiro. Loranthus Dickciss, Mart. in Schultes, syst. 7. p. 122. Flowers 18-20 lines long, scarlet, but green at the apex.

Two-coloured-flowered Psittacanthus. Shrub par.

8 P. grandiflorus; branches terete; leaves opposite, on short petioles, ovate-lanceolate, acuminate, thick; peduncles dichotomous: terminal ones 3-4: axillary ones solitary; flowers pedicellate by threes, tomentose; bractea cup-shaped, undinate; petals 6, linear, bearing each a scale on the inside at the base. P. S. Native of Brazil, in the province of Rio Negro, in the woods about Japura. Loranthus grandiflorus, Mart. in Schultes, syst. 7. p. 124. Corolla 1½ to 2 inches long, purplish? Stigma capitate-glabose.

Great-flowered Psittacanthus. Shrub par.

9 P. biternum; branches terete, rather velvety; leaves nearly opposite, petiolate, elliptic, obtuse, thick, glabrous; pe- duncles axillary and terminal; lower ones solitary, dichotomous: superior ones sub-pedicellate; flowers pedicellate, pubescent;
brectae ovate; petals 6, linear, bearing each a scale on the inside at the base; anthers oblong, versatile. Ψ. P. S. Native of Brazil. Loranthus bicornatus, Hoffmannseg, in Schultes, syst. 7. p. 124. Corolla 12-18 lines long. Three of the stamens are shorter than the rest. Style bent, with 2 knees; stigma capitate.

**Bilateralis** Psittacanthus. Shrub par.

10 P. robustus; glabrous; branches tetragonal; leaves opposite, decussate, on short petioles, oblong-obovate, obtuse, thick; peduncles terminal, and corymbose crowded in the axils of the upper leaves, 3-flowered; flowers erect, angular; bracteas nearly orbicular, short. Ψ. P. S. Native of Brazil, in the province of Rio Negro, in woods about Japura. Loranthus robustus, Mart. in Schultes, syst. 7. p. 125. Corolla yellow, 2-8 inches long, glabrous on the outside. Style filiform; stigma capitate. Anthers linear.

**Robust** Psittacanthus. Shrub par.

11 P. fuscatus; glabrous; branches tetragonal at the apex; leaves opposite, obovate, emarginate or obtuse, coriaceous, almost nerveless; peduncles axillary, and terminal, 1-3 together, those in the forks bearing 2-6 flowers; bracteas ovate, acutish; petals 6, cohering at the base, but spreadingly reflexed at the apex. Ψ. P. S. Native of Brazil, in woods, at the river St. Francisco. Loranthus fuscatus, Mart. in Schultes, syst. 7. p. 126. Corolla 1 or 1½ inch long, scarlet at the base, but paler towards the apex, and yellow inside. Anthers oblong, probably versatile.

**Forkeled**-peduncled Psittacanthus. Shrub par.

12 P. bicalyculatus; branches terete; leaves opposite, ovate-cordate, obtuse, somewhat stem-clasping, thick, glaucous; panicule terminal, dichotomous, bracteate; pedicels 2-3-flowered, tomentose; bracteas cup-shaped, girdling the ovarium; calyx 6-toothed; petals linear. Ψ. P. S. Native of Brazil, in the province of Bahia, in woods. Loranthus bicalyculatus, Mart. in Schultes, syst. 7. p. 128. Corolla 14 lines long, tomentose on the outside, scarlet. Style longer than the stamens; stigma capitate.

**Bicalyculate**-flowered Psittacanthus. Shrub par.

13 P. cordatus; glabrous; branches terete; leaves opposite, cordinate at the base, stem-clasping, coriaceous, ending in a long acumen, triple or quintuple-nerved; flowers racemose, panicled on the tops of the branches, and in the axils of the upper leaves; peduncles 2-flowered; rather tomentose; bracteas cup-shaped; petals 6, linear, spreading above the middle. Ψ. P. S. Native of Brazil. Loranthus cordatus, Hoffmannseg in Schultes, syst. 7. p. 128. Corolla 12-16 lines long. Anthers oblong. Stigma capitate.

**Cordate**-leaved Psittacanthus. Shrub par.

14 P. falcifrons; glabrous; branches terete; leaves opposite, sessile, oblong-lanceolate, rather falcate, triple or quintuple-nerved, coriaceous; panicle terminal and axillary, somewhat dichotomous; flowers by threes, glabrous; pedicels equal in length to the bracteas, which are drawn out into a cup, around the ovary, and much longer than them; petals 6, linear. Ψ. P. S. Native of Brazil, in the province of Rio Negro, in woods about Japura. Loranthus falcifrons, Mart. in Schultes, syst. 7. p. 129. Corolla golden-yellow, 14-18 lines long. Anthers oblong, yellow._There is a variety of this species having shorter, ovate-oblong, hardly falcate leaves.

**Sickle-leaved** Psittacanthus. Shrub par.

15 P. acinarus; glabrous; leaves lanceolate, acuminate, oblique, rather falcate, thick, hardly veined; cymes 5-parted, with the branchlets 3-flowered; flowers pedicellate; bracteas cup-shaped, large, truncate, nearly entire; calyx 6-toothed; petals 6, linear. Ψ. P. S. Native of Brazil, in woods in the province of Piauiba. Loranthus acinarus, Mart. in Schultes, syst. 7. p. 130. Corolla 1½ inch long, club-shaped at the apex in the unexpanded state. Anthers oblong. Stigma rather oblique.

**Acranius** Psittacanthus. Shrub par.

16 P. cucullaris; glabrous; branches terete, nodose at the joints; leaves broad-lanceolate, falcate, 5-nerved, opposite, on short petioles; peduncles axillary and terminal, bident or sub-papilate, nearly one-half shorter than the leaves: with 1-3-flowered branches; bracteas large, concave, cordate, acuminate; flowers sessile; petals 6, linear; anthers versatile. Ψ. P. S. Native of French Guiana. Loranthus cucullarius, Lam. journ. hist. nat. 1. p. 144, t. 23. Schultes, syst. 7. p. 130.

**Cucullar**-bracted Psittacanthus. Shrub par.

17 P. mexicanus; glabrous; leaves ovate-lanceolate, rather falcate, running down the short petiole in a cuneate manner at the base, 5-7-nerved, rather coriaceous; panicles axillary and terminal: with thick branchlets, bearing 3 flowers at the apex; pedicels shorter than the bracteas, which are drawn out into ovate cupula, much exceeding the ovary; petals 6, linear, acute, velvety on the outside; anthers oblong. Ψ. P. S. Native of Mexico, where it was collected by Hennke. Loranthus Mexicanus, Presl, in herb. Hennke, and in Schultes, syst. 7. p. 129. Leaves 5 inches long and ½ broad. Flowers 18-20 lines long, golden yellow in the dried state. The leaves are very similar to those of P. cucullaris, but differs in the bracteas being much smaller.

**Mexican** Psittacanthus. Shrub par.

18 P. destructur; glabrous; branches tetragonal, warted; leaves petiolate, oblong, acute, coriaceous, having the midrib nerve rather prominent beneath, the rest of the leaf veinless; racemes terminal, having the branchlets 3-flowered, approximate, secund, and bracteal; flowers pedicellate; petals 6, linear; anthers incumbent. Ψ. P. S. Native of Quito, on trees near Villa de Ibarra, where it is called Matapalo. Loranthus destructus, H.B. et Kunth, nov. gen. amer. 3. p. 485. Schultes, syst. 7. p. 135. Leaves 2 inches long and 8-9 lines broad; petioles 3 lines long. Flowers about an inch long, orange-coloured. Berries globose, black. It is very doubtful whether this is a species of the present genus from the want of bracteas.

**Destructive** Psittacanthus. Shrub par.

19 P. torquosus; quite glabrous; branches compressedly angular at the nodi; leaves elliptic-lanceolate, obtuse, on short petioles, coriaceous, feather-veined; umbels 3, 1 terminal, and 2 axillary, pedunculate; bracteas irregular; calyx re pandly truncate; corolla 6-parted, with linear lobes; anthers versatile. Ψ. P. S. Native of Brazil. Loranthus formosus, Cham. et Schlecht. in Linnaea. 3. p. 211. An intermediate species between P. Jacquinii and P. Multisii. Leaves almost alternate or opposite, 3-4 inches long, and 1-2 broad. Corolla 4 inches long, showy.

**Beautiful** Psittacanthus. Shrub.

20 P. cuneiformis; glabrous; branches terete; leaves nearly sessile, cuneiform, small, ending in a short acumen, fissile, shining; peduncles 1-3 together, axillary, 1-flowered, 3 times shorter than the leaves; bracteas cup-shaped, one under each flower; petals 6, linear, spatulate, concrete at the base; anthers versatile. Ψ. P. S. Native of Brazil and Peru, on trees and shrubs; of Chili, in valleys in the Andes of Mendoza, Cordillera of Chili, on Areñia Cauenia at Llaylay, and upon willows at Banda Oriental. Loranthus cuneiformis, Ruiz et Pav. fl. par. 3. p. 46. t. 276. f. b. Cham. et Schlecht. in Linnaea. 3. p. 212. Schultes, syst. 7. p. 118. Loranthus Montevideensis, Spreng. syst. 2. p. 128. Leaves hardly an inch long, some of them emarginately retuse at the apex. Corolla scarlet, an inch and a half long. Berries roundish, black, crowned by the urceolate calyx.

**Cuneiform-leaved** Psittacanthus. Shrub par.
21 P. cupulifer; glabrous; branches terete; leaves nearly sessile, obliquely ovate-oblong, narrowed at the apex and obtuse, reticulately somewhat veined, somewhat membranous; peduncles axillary, 2-3-flowered, unibracteate; pedicels furnished with a large cup-shaped bractea under the flower; petals 6, linear, spreading, revolute at the apex; anthers incumbent.  \* P. S. Native of Peru, near Loxa. Loránths cupulifer, H. B. et Kunth, nov. gen. amer. 3. p. 438. Schultes, syst. 7. p. 120. Leaves 5 inches long and 2 inches broad, on very short pedioles. Flowers 1 or 1 1/2 inch long, on very short pedicels. Berry elliptic, about the length of the cup-shaped bractea.

Cup-bearing Psittacanthus. Shrub par.

22 P. Plumier; glabrous; branches terete; leaves ovate (3-nerved ex Lam.) 3-7-nerved at the base, coriaceous; peduncles axillary, trichotomously corymbose, shorter than the leaves; petals 5, linear, contiguous at the base; alabaster a little curved; anthers versatile.  \* P. S. Native of the West India Islands, parasitical on trees. Loránths Plumieri, Cham. et Schlcht., in Linnae. 3. p. 311. Linocera, Plum. nov. gen. 17. t. 27. pl. amer. ed. Burm. t. 166. f. 1. Loránths, Vaill. act. acad. par. 1722. p. 201. Plumier says the flowers of his plant are composed of 6 petals, but the number of the parts of the flower is unknown.

Plumier's Psittacanthus. Shrub par.

23 P. euclalpytfoius; glabrous; branches terete; leaves petiolar, ovate, rounded at the apex, coriaceous, almost veinless; peduncles axillary, 3-flowered, shorter than the leaves; pedicels furnished with a cup-shaped bractea each under the flower; petals 6, linear, a little dilated at the apex, hardly cohering at the base; anthers incumbent.  \* P. S. Native of South America, in the province of Caracass, at Villa de Cura. Loránths euclalsipulfoius, H. B. et Kunth, nov. gen. amer. 3. p. 439. Leaves 3 inches long, and nearly 2 broad. Flowers yellow, glabrous, about 1 1/2 inch long. Schultes, syst. 7. p. 120.

Euclalpytfoius-leaved Psittacanthus. Shrub par.

24 P. crassifolius; branches terete, dotted with brown at the apex; leaves opposite, broad-ovate, obtuse, with subrevolute margins, coriaceous; peduncles axillary, 1-3-together, dichotomous; flowers twin or tern, pedicellate, tubular, the tube ventricose above the middle, and spreading at the apex, and having the throat constricted; bracteas cup-shaped, one under each flower.  \* P. S. Native of Brazil, in the province of Rio Grande, in woods about Jupara. Loránths crassifolius, Mart. in Schultes, syst. 7. p. 123. Corolla purplish, 2 and 2 1/2 inches long. Anthers linear.

Thick-leaved Psittacanthus. Shrub par.

25 P. dichotomus; glabrous; branches terete, dichotomous, 3 or 4 in a whorl; leaves usually in whorles, ovate-elliptic, rounded at the apex, coriaceous; peduncles axillary, twin, bifurcate, pendulous in the flower-bearing state, but erect in the fruit-bearing state; limb of calyx truncate; bracteas cup-shaped, one under each flower; petals 6, linear, concretes at the base, revolute spreading at the apex; anthers incumbent.  \* P. S. Native of Peru, on the Andes, in groves about Muna. Loránths dichotomus, Ruiz et Pav. fil. per. 3. p. 45. t. 274. f. a. Schultes, syst. 7. p. 123. Loránths clusiaflouis, Wildl. rel. ex Schultes, syst. l. c. Leaves 2 hands long, and a hand and a half broad. Corolla about a hand and a half long, scarlet at the base, and yellow at the top. Petioles very short.

Var. \beta. Balthasarens (D. C. prod. 4. p. 311.) petals 8-9 lines long; margins of leaves somewhat revolute, shining above, and rather glaucous; flowers red, 3 inches long; petals a little dilated at the apex.  \* P. S. Native of South America, on the banks of the Orinoco, near Balthazar. Loránths dichotomus, H. B. et Kunth, nov. gen. amer. 3. p. 433. Perhaps sufficiently distinct from the species.

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Dichotomous-pedunculated Psittacanthus. Shrub par.

26 P. nodosus; glabrous; branches terete, dichotomous, articulated at the nodi; leaves opposite, petiolar, ovate-roundish, coriaceous, somewhat 7-nerved at the base; peduncles axillary, and in the forks of the branches, in fascicles, 1-2-flowered, nearly the length of the petals; bracteas semi-ovate; alabaster terete, acute; petals 6, linear-lanceolate; filaments adnate a long way to the petals.  \* P. S. Native of Peru. Loránths nodosus, Desr. in Lam. dict. 2. p. 601. Schultes, syst. 7. p. 119. Leaves 2 1/2 to 4 inches long, and 2 1/2 to 3 inches broad. Corolla 3 or 3 1/2 inches long.

Knotted-branched Psittacanthus. Shrub par.

27 P. Muriisi; glabrous; branches terete; leaves 3 in a whorl, sessile, somewhat obliquely elliptic-oblong; or obovate, rounded at the apex, coriaceous; peduncles axillary, few-flowered, bractless; petals 6, linear, glabrous, concretes at the base?  \* P. S. Native of South America, near Santa Fe de Bogota. Loránths Muriisi, H. B. et Kunth, nov. gen. amer. 3. p. 439. Schultes, syst. 7. p. 124. Loránths longifolius, Mutis, ined. ex Bonpl. Leaves 2 1/4 to 3 inches long, and 1 1/2 broad. Flowers half a foot long.

Muriisi's Psittacanthus. Shrub par.

28 P. divaricatus; glabrous; branches terete, divaricate; leaves petiolar, oblong or elliptic, rounded at the apex, coriaceous, glaucous; peduncles panicled on the tops of the branches, 3-flowered, bractless; pedicels expanded into an entire cupula under each flower; petals 6, linear, glabrous; anthers incumbent.  \* P. S. Native of South America, on the banks of the Orinoco. Loránths divaricatus, H. B. et Kunth, nov. gen. amer. 3. p. 433. Schultes, syst. 7. p. 127. Flowers more than an inch long. Leaves 10-15 lines long, and 5-9 broad. Peduncles axillary and terminal.

Divaricate Psittacanthus. Shrub par.

29 P. acutifolius; glabrous; branches terete; leaves petiolate, lanceolate, very acute; racemes axillary, one-half shorter than the leaves, having the branchlets 1-3-flowered; flowers pedicellate, furnished with a common acute bractea each; petals 6, linear, somewhat spatulate, erect to the middle, and coning.  \* P. S. Native of Peru, parasitical on trees, and in hedges at Huanaaco. Loránths acutifolius, Ruiz et Pav. fil. per. 3. p. 48. t. 274. f. b. Schultes, syst. 7. p. 142. Leaves 2-3 inches long, and nearly an inch broad; petioles 2-3 lines long. Corolla white, 4-5 lines long. Berry oval, blackish.

Var. \beta. Chileanus (D. C. prod. 4. p. 314.) racemes denseflowered, almost bractless; petals erect beneath the middle, and coning, linear and acute at the apex.  \* P. G. Native of Chili, where it was collected by Haeke. Loránths acutifolius, Presl, in herb. Haeke. Perhaps a distinct species.

Acute-leaved Psittacanthus. Shrub par.

30 P. ? Eschscholziaanus; branches terete, or a little angular, rough; leaves subalternate, on very short petioles, rough, ovate or roundish, obtuse, glabrous, coriaceous; peduncles corymbose racemose, terminal and axillary, erect, for the most part 3-flowered; the middle flower sessile; bracteas ovate, fringed at the apex, equal in length to the ovaria; corolla 5-cleft, clavate; anthers fixed by the back.  \* P. G. Native of Chili. Loránths Eschscholziaanus, Mart. in Schultes, syst. 7. p. 117. Ovarium oblong. Corolla 3 lines long.

Eschscholz's Psittacanthus. Shrub par.

31 P. thyrsiflorus; glabrous; branches dichotomous or trichotomous; leaves broad-lanceolate, acutish or acuminate, with pellucid cartilaginous margins; racemes terminal and axillary; flowers 2-3, sessile at the tops of the branches; bracteas ovate, acute, one under each flower; corolla 6-parted, with linear lobes; anthers versatile.  \* P. S. Native of Brazil. Loránthus thyrsiflorus, Cham. et Schlcht. in Linnae. 3. p. 214. 3 H
LORANTHACEÆ. VI. PSITTACANTHUS.

Leaves 2 inches long, and 8-9 lines broad; pedioles 6-9 lines long. Flowers 5 lines long. Limb of calyx very narrow, truncate.

Thyreoe-flowered Psittacanthus. Shrub par.

92 P. ? Flagella'riis; glabrous, sermentose; branches terete; leaves sessile, linear, acute, coriaceous, with the middle nerve hardly conspicuous; racemes terminal, naked, erect; lower pedicels 3-flowered, superior ones 1-flowered; bracteas deciduous, one under each flower; calyx lacerated, truncate; corolla 5-6-parted, having the lobes linear and dilated at the apex; anthers versatile. P. S. Native of Brazil; of Chili, near La Punta de San Luis, at El Aquadita, and on the banks of El Rio Chorillo. Loranthus flagellaris, Cham. et Schlecht. in Linnaea. 3. p. 213. Like Loranthus cuneifolium and sermentosus, Ruiz et Pav. in fl. per. Corolla fine red, 6 lines long. Style attenuated at the apex. Leaves 20 lines long and 1½ broad.

Whip Psittacanthus. Shrub par.

93 P. Bertero; glabrous; branches terete; leaves alternate, broad, elliptic, obtuse, tapering into the short pedioles at the base, coriaceous, with somewhat revolute margins; peduncles terminal, in dense corymbose racemes; the partial peduncles 2-5-flowered; flowers tubular, with 6 linear-spatulate, nearly free segments; filaments equal in length to the petals; anthers linear-oblong, oscillatory; style filiform, angular; stigma hardly capitate; ovary roundish, exceeding the unilateral bracteas, which is roundish and denticulate at the apex. P. G. Native at Juan Fernandez, growing on Myrtus Fernandezianus. Hook. et Arn. Loranthus Berteroi, Hook. et Arn. in bot. misc. 3. p. 558. Loranthus venetus, Bertero, but not of Kunth. The partial peduncles are simple, and bear 2 flowers, or are forked, and then bear 3 or 5 flowers. The flowers are about an inch long. It is probably a species of Struthanthus.

Bertero's Psittacanthus. Shrub par.

94 P. Schiedeanaus; plant glabrous; branches subalate tetragonal, dilated at the nodi; leaves nearly opposite, on short pedioles, ovate-lanceolate, obliquely falcate, feather-veined, and somewhat triple-nerved; coriolls terminal; bracteas cup-shaped, one under each flower; limb of calyx truncate. P. S. Native of Mexico, near Jalapa. Loranthus Schiedeanaus, Cham. et Schlecht. in Linnaea. 5. p. 172. Allied to P. Jacquinii, but differs in the flowers being more slender, and about 2 inches long.

Schiede's Psittacanthus. Shrub par.

Cult. The flowers of all the species of this genus are very showy, and comparatively large. The habit is that of honey-suckle. Being all parasitical shrubs, they are not cultivable.

VII. TRISTERIX (from τριστερός, treis, three, and τέρας, pteris, a wing; in reference to the 3 bracteas to the flowers). Mart. in D. C. prod. 4. p. 671.—Loranthus species of authors.

Lin. syst. Tetra-Hexandria, Monogynia. Flowers hermaphrodite, each furnished with one bractea; bracteas sometimes lateral, and sometimes cupular and oblique. Calyx cup-shaped or campanulate, with an entire or toothed border. Petals linear-spatulate, bearing the stamens in the middle. Anthers fixed by the base, erect, linear. Style filiform; stigma capitate. Berry ovate or elliptic.—Racemes for the most part lateral, subcorymbose.

§ 1. Flowers of 4-5 petals, having a cucullate bractea under each flower.

1 D. lignustrorum; branches terete, when young, as well as the new leaves, peduncles, bracteas, and leaves pubescent; leaves petiolate, lanceolate, acuminate, coriaceous, at length glabrous; peduncles many, axillary, cymosely corymbose; bracteal laciniate, cucullate under each flower; limb of calyx almost entire; corolla tetragonal; petals 4, linear, at length spreading, flowers petaloid. P. G. Native of Nipaul, in woods in the great valley. Loranthus lignustrinus, Wall. in Roxb. fl. ind. 2. p. 219. Corolla green, 3-4 lines long. Authors nudate, ex Wall.

Green-flowered Tristerix. Shrub par.

2 T. tetraandrus; branches terete, and are, as well as the pedioles and nerves of leaves, pubescent; leaves ovate, bluish, rather coricate, coriaceous, glabrous in the adult state; coriolls nearly sessile, dense, many flowered; pedicels very short, pubescent, having 3 bracteas under each flower; corolla glabrous, 4-parted; lobes shell-formed at the apex and acute; stamens 4; anthers versatile. P. G. Native of Chili, about Tala- quano, Conception, El Valle del Rio Tingirica, and Valparaiso, parasitical on Guevina and other trees, along with Loranthus buxifolium, Cham. et Schlecht. in Linnaea. 3. p. 206. Schultes, syst. 7. p. 103. Loranthus tetrandrus, Ruiz et Pav. fl. per. 3. p. 48. t. 275. The vernacular name of this species is Quinratal ex Bertero.

Tetrandrous Tristerix. Shrub par.

5 T. aphylus; much branched; branches nearly terete, glabrous, short, leafless; flowers pedicellate, somewhat corymbose; bracteas 3 under each flower, somewhat acute; corolla glabrous, 4-parted; lobes linearly coelate at the apex; stamens 4; anthers versatile. P. G. Native of Chili, parasitical upon Cercus Peruvianus at Rancagua, Coquimbo, Guardia del Maypo, Villavicenzo in the Andes of Mendoza, Cordill. of Chili, &c. Loranthus aphylus, ex Bert. in litt. 829. Loranthus cactorum, Hook. et Arn. in Beech. voy. part. bot. 1. p. 285. Flowers like those of the preceding species. The vernacular name of this plant is Quinstral de Quisco.

Leafless Tristerix. Shrub par.

4 T. Reinwardtianus; leaves opposite, oblong, attenuated at both ends, coriaceous, veinless beneath; peduncles crowded, axillary, 1-flowered; flowers pentadactyl or tetradactyl; tube of corolla very long, curved; lobes linear, secund, at length circinnately revolute at the top. P. S. Native of Java, in woods on the mountains. Loranthus Reinwardtianus, Schultes, syst. 7. p. 105. Loranthus coccineus, Reinw. in Blum. biijdr. p. 604. but not of Jack.

Reinwardt's Tristerix. Shrub par.

Cult. The species of this genus, like the rest of the genera of this order, are not cultivable in gardens. Their habit is that of Lonicera.
11. **Pricet-like Dendrophthoe.** Shrub par.

2 D. **WALLICHIANA;** glabrous; branches terete; leaves rather alternate, ovate, obtuse, acute at the base; racemes axillary, 1-3-together, one-half shorter than the leaves, simple, in fascicles round the base of the branches; flowers small, pedicellate; bracteae lateral cucullate, one under each flower; petals 4, linear-cuneate: alabastra nearly terete; berry subglobose, reflexed; flowers tetrads. h. P. S. Native of the East Indies, where it was detected by Heyne. Loranthus Wallichianus, Schultes, syst. 7. p. 100. Loranthus polystachyus, Wall. in Roxb. fl. ind. 2. p. 217. but not of Ruiz et Pav. Corolla deep purple, 4 lines long.

**Wallich's Dendrophthoe.** Shrub par.

3 D. **ru'cher;** glabrous; branches terete; leaves nearly opposite, on short petioles, ovate-elliptic, acuminate, coriaceous, glaucous; racemes axillary, simple, many flowered, length of the leaves; bracteae cucullate, lateral, one under each flower; alabastra cylinrodially pentagonal; petals 5, free to the base, linear; flowers pentandrous. h. P. S. Native of Penang. Loranthus pulcher, D. C. prod. 4. p. 295. Loranthus speciosus, Wall. mas. but not of Pohl, nor Perr. nor Dietr. Leaves 4 inches long, and 2 broad. Corolla 2 lines long. Style filiform; stigma simple: Calyx truncate.

**Fair Dendrophthoe.** Shrub par.

4 D. **fendulis;** glabrous; branches terete; leaves opposite, petiolate, long-linear, acute, coriaceus, with 5 subparallel veins, which are hardly conspicuous; corymbus axillary, 1-2-together, pedunculate, trifid; flowers 3-flowered; bracteae ovate-roundish, lateral, one at the outer side of each flower; limb of calyx truncate; alabastra terete, cucullate; petals 5, linear, somewhat dilated at the apex; flowers pentandrous; anthers oblong, erect. h. P. G. Native of New Holland. Loranthus pendulus, Sieb. fl. nov. holl. no. 241. Schultes, syst. 7. p. 157. D. C. coll. mem. vi. t. 1. Leaves 6-8 inches long, and 5 lines broad; petioles 10 lines long. Corolla 15 lines long. Berry ovate. Style filiform.

**Pendulous Dendrophthoe.** Shrub par.

5 D. **conger;** glabrous; branches terete; leaves oblong, obuse, attenuated at the base, on short petioles, coriaceous, veinless; racemes axillary, shorter than the leaves, subcorymbose; peduncles 3-flowered; flowers pedicellate; bracteae ovate, acute, lateral, one under each flower; limb of calyx truncate; alabastra terete, somewhat club-shaped; petals 5, linear, acute; flowers pentandrous; anthers linear, inserted by the base. h. P. G. Native of New Holland. Loranthus conger, Sieb. nov. holl. no. 243. Schultes, syst. 7. p. 114. D. C. coll. mem. vi. t. 2. Leaves 2 inches long, and 4-5 lines broad. Corolla nearly an inch long. Style filiform.

**Congener Dendrophthoe.** Shrub par.

6 D. **FORSTERIANUS;** glabrous; branches terete; leaves opposite, petiolate, ovate, obtuse, veneus, thin; cymes axillary, solitary, shorter than the leaves; peduncles 3-flowered; bracteae ovate, obtuse, lateral, one under each flower; calyx truncate; alabastra terete, somewhat club-shaped; petals 5, linear, acute; flowers pentandrous; anthers linear, inserted by the base. h. P. G. Native of the Society Islands. Loranthus Forsterianus, Schultes, syst. 7. p. 114. Loranthus stelis, Forst. prod. ex specimen in lieber. Scribe. from Schultes obs. Perhaps this species does not belong to the present genus.

**Forster's Dendrophthoe.** Shrub par.

7 D. **GAUDICHAUDII;** glabrous; branches terete; leaves opposite, linear, obtuse, thickish, attenuated at the base; peduncles axillary, much shorter than the leaves, divaricate bifid at the apex, 2-4-flowered; parts of flowers equal; flowers tetrads; petals spathulate; anthers ovate, inserted by the base. h. P. G. Native of New Holland, where it was collected by Gaudichaud. Loranthus Gaudichaudii, D. C. prod. 4. p. 295.

**VIII. Dendrophthoe.**

Leaves 10-12 lines long, and 2 lines broad. Flowers 5-6 lines long. Style filiform.

**Gaudichaud's Dendrophthoe.** Shrub par.

8 D. **tetrapetalus;** leaves opposite, nearly sessile, oblong, or elliptic, coriaceous; flowers tetrandrous, one on each side of each leaf, and therefore there are 4 at each joint, disposed in a whorl; petals 4, linear. h. P. G. Native of New Zealand. Loranthus tetrapetalus, Lin. fil. suppl. 211. Forst. prod. no. 156. Schultes, syst. 7. p. 96. Calyx nearly entire. Style a little longer than the petals, filiform; stigma capitata. Bracteae wanting.

**Four-petalled Dendrophthoe.** Shrub par.

9 D. **luzonensis;** glabrous; branches terete, dichotomous or whorled, knotted at the joints; leaves opposite or verticillate, oval-oblong, coriaceous, sessile, almost veinless; peduncles terminal, cinamon-corymbose at the apex, pubescent; bracteae ovate, acute, lateral, rather concave, one under each flower; limb of calyx truncate; corolla of 4 linear acute petals, which are somewhat conicrete at the base (sometimes joined by pairs); style filiform. h. P. S. Native of Luzon, one of the Philippines. Loranthus Luzonensis, Presl. in herb. Haene, and in Schultes, syst. 7. p. 104. Leaves 11-15 lines long, and 6-7 broad. Corolla 15 lines long, hardly pubescent on the outside.

**Luzon Dendrophthoe.** Shrub par.

10 D. **pentapetalus;** glabrous, much branched; leaves opposite, petiolate, lanceolate-ovate or oval-cordate, obliquely attenuated, smooth; racemes 1-2, axillary, simple, stiff, length of the leaves; flowers very numerous, on short pedicels; bracteae oblique, oval, adpressed to the ovarium; limb of calyx nearly entire; petals 5, swelled out at the base into a fleshy triquetrous body, recurved at the apex; stamens 5; anthers obovate; style angular; berry oblong. h. P. S. Native of the East Indies. Parasitical on trees, in Silhet. Loranthus pentaphyllus, Roxb. fl. ind. 2. p. 211. Schultes, syst. 7. p. 109. Wall. pl. rar. asiat. t. 3. p. 225. Flowers regular, small, red. Berry greenish yellow. Leaves 3-4 inches long; petioles 6 lines long. Racemes 6-8 inches long, red. Anthers inserted by the base.

**Five-petalled Dendrophthoe.** Shrub par.

11 D. **? racemiferus;** branches terete, glabrous, clothed with rufous villi in the young state, as well as the peduncules; leaves opposite or alternate, on short pedioles, oblong-lanceolate, bluntness at the base, and acutish at the apex; racemes axillary, spicate, simple, length of leaves; bracteae cucullate, lateral, one under each flower; petals 4, triquetrous at the base. h. P. S. Native of the East Indies, in the Burman empire, at Amherst and Tavoy. Loranthus racemiferus. Wall. mss. Very like D. pentapetalus, but differs in the flowers being tetrandrous.

**Raceme-bearing Dendrophthoe.** Shrub par.

12 D. **coccineus;** glabrous; branches elongated; leaves alternate, on short petioles, oblong-ovate, obtuse, somewhat coriaceous at the base; spikes axillary, 1-2-together, erect, longer than the leaves; flowers sessile, with one bracteae under each; limb of calyx nearly entire; corolla tubular; petals 4, linear, dilated at the base; anthers adnate; flowers tetrandrous. h. P. S. Native of the East Indies, in Singapore. Loranthus coccineus, Jack, mal. misc. t. 1. p. 8. and in Roxb. fl. ind. 2. p. 215. Schultes, syst. 7. p. 192. Corolla scarlet. Berry ovate. Said to be allied to D. pentapetalus.

**Scarlet-flowered Dendrophthoe.** Shrub par.

§ 2. Flowers tubular, slender, 4-cleft, disposed in racemes, with one bractea under each flower. Many of the plants in this section are probably species of Scurrula.

13 D. **obrectus;** branches terete; branchlets compressed, velvety, as well as the young leaves; leaves opposite, on short
petioles, elliptic-lanceolate, at length glabrous; flowers in fascicles from the axils of the leaves, velvety from dense rufous pubescence, as well as the racemes and peduncles; bractlets lateral, ovate, one under each flower; limb of calyx hardly any; corolla tubular, arched: lobes 4, oblong; anthers erect. H. P. S. Native of the Burmese Empire, on Mount Taung-Dong, near Ava. Loranthus obtectus, Wall. mss. Leaves 2 inches long and an inch broad; petioles 1½ inch long. Corolla 4-cleft, 10-11 lines long. Stigma hardly capitate.

Covered Dendrophthoe. Shrub par.

14 D. recoursus: branches terete, adult ones glabrous; leaves alternate, petiolate, elliptic, obtuse, acute at the base, smoothish; peduncles axillary and lateral, branched, 2-3-flowered, and are, as well as the flowers, velvety; flowers recurved; bracttes broad, obliquely cupulate, one under each flower; limb of calyx cup-shaped, toothed; alabastra terete; lobes 5, oblong; flowers tetrandrous. H. P. G. Native of the East Indies, on the Nelligeherry mountains, where it was collected by Noton. Loranthus recurvens, Wall. mss. Leaves 2 inches long and 1½ lines broad; petioles 3-4 lines long. Alabastra 6 lines long. Anthers oblong, inserted by the base. Style filiform. Stigma slightly capitate.

Reduced-flowered Dendrophthoe. Shrub par.

15 D. lepideus: branches terete, while young as well as the leaves white from velvety down; leaves opposite, or rather alternate, petiolate, oval, obtuse at both ends, at length glabrous; racemes short, axillary, and arc, as well as the flowers, velvety from white tomentum; tube of corolla long, terete, somewhat incurved: lobes 4, nearly equal, spreading; flowers tetrandrous. H. P. S. Native of the Burmese empire, at the river Irrawaddy, near Yenangon. Loranthus leptanthus, Wall. mss. var. rotundifolia, D. C. coll. mem. vi. t. 5. Corolla 4-cleft, 15-17 lines long. Anthers linear, erect. The species is allied to D. pulverulentus.

Dlicate-flowered Dendrophthoe. Shrub par.

16 D. ferrugineus: branches long, pendulous, densely clothed with ferruginous down when young, as well as the under side of leaves, pedicels, calyces, and corollas; leaves opposite, on short petioles, elliptic, obtuse, coriaceous, glabrous above; peduncles 1-4 together in the axils of the leaves, 2-6-flowered; bracteas small, adpressed to the ovary, one to each; corolla tubular, deeply 4-parted; berry ovate; flowers tetrandrous. H. P. S. Native of the East Indies, in Pulo-Penang, Singapore and Sumatra. Loranthus ferruginosus, Roxb. fl. ind. 2. p. 297, Jacq. mal. misc. 1. p. 9. Schultz, syst. 7. p. 98. Corolla densely clothed with rusty hairs, 7 lines long.

Rusty Dendrophthoe. Shrub par.

17 D. graciliflorus: branches compressed, at length terete, glabrous; leaves opposite, on short petioles, elliptic-oblong, acute at both ends, at length glabrous; racemes axillary, 5-7-flowered, somewhat umbellate; bracteas lateral, small, acute, one under each flower; corolla white from velvety down, slender, 4-lobe: lobes linear. H. P. S. Native of the East Indies, in Silhet. Loranthus graciliflorus, Wall. mss. Loranthus gracilis, Schultz, syst. 7. p. 99. Leaves an inch and a half long, and 6-9 lines broad. Corolla 5 lines long, 4-cleft, with the tube tetragonal at the base. Anthers inserted by the base. Allied to D. lignustrinus.

Slender-flowered Dendrophthoe. Shrub par.

18 D. Heynei: branches terete, glabrous in the adult state; leaves opposite, on short petioles, oval, bluntish, rather velvety beneath from rufescence down; peduncles axillary, in fascicles, or branched, much shorter than the leaves, and are, as well as the flowers, clothed with rufous velvety down; bracteas lateral, small, one under each flower; corolla very slender, tubular, terete, 4-lobe: lobes oblong, short. H. P. S. Native of the East Indies. Loranthus Heynei, Wall. mss.

Heyne's Dendrophthoe. Shrub par.

19 D. atropurpureus: branches nearly terete, somewhat canescent; leaves nearly opposite, oval, obtuse at both ends, rather oblique at the base, and undulate below; white from scurf beneath; racemes crowded, axillary; limb of calyx quite entire, very short; flowers 4-parted; fruit subcuneatus.

Dark-purple Dendrophthoe. Shrub par.

20 D. repandus: branches somewhat compressed, clothed with rusty lepidotened down; leaves nearly opposite, oval or obtuse, obtuse equal at the base, repand, clothed with leprous fuscous down beneath; racemes crowded, axillary; corolla slender, 4-toothed, covered with brown scurf on the outside: lobes or teeth short, equal. H. P. S. Native of Java, in temperate places. Loranthus lepidotus, Schultz, syst. 7. p. 100. but not of Blume. Loranthus melanostemon, Reinw. ined. ex Schultz, syst. 7. p. 100. Loranthus Schultesii, Blume, in litt. 1829. fl. jav. 2. t. 2. Flowers brownish. Anthers black.

Schultes's Dendrophthoe. Shrub par.

21 D. schulzii: branches terete, clothed with lepidotened rusty down on the top; leaves nearly opposite, obtuse at both ends, or rather coriaceae at the base, pale, and ochraceously lepidotened beneath; racemes crowded, axillary; flowers 4-parted, rusty on the outside. H. P. S. Native of the interior of Java, in temperate places. Loranthus lepidotus, Schultz, syst. 7. p. 100. but not of Blume. Loranthus melanostemon, Reinw. ined. ex Schultz, syst. 7. p. 100. Loranthus Schultesii, Blume, in litt. 1829. fl. jav. 2. t. 2. Flowers brownish. Anthers black.

Sphenoid-flowered Dendrophthoe. Shrub par.

22 D. sphenoides: branches terete, glabrous; leaves nearly opposite, cuneiform, roundly obtuse, when young covered with rusty scurf, at length glabrous on both surfaces; peduncles crowded, axillary, bearing 3-5 flowers, in fascicles; alabastra terete, globose at the apex, hardly 4-toothed. H. P. S. Native of Java, in the province of Bantam, on trees. Loranthus sphenoides, Blum. in litt. 1829. fl. jav. 2. t. 4. Loranthus atropurpureus var. cuneatus, Blum. ibid. p. 600. Very nearly allied to D. atropurpureus, but differs in the figure of the leaves, and in the shorter more crowded peduncles.

Sphenoid-flowered Dendrophthoe. Shrub par.

23 D. cinnamomeus: branches terete, young velvety from rufous down, as well as the peduncles and flowers; leaves opposite, on short petioles, lanceolate, acute, glabrous; flowers 5-5 in a fascicle in the axils of the leaves, on short pedicels; corolla elavate, truncate at the apex; style elongate. H. P. S. Native of the East Indies, in Silhet. Loranthus cinnamomeus, Wall. mss. D. C. coll. mem. vi. t. 6. Leaves 27 lines long and 10-11 broad. Corolla 6-7 lines long.

Cinnamome-coloured Dendrophthoe. Shrub par.

24 D. chrysanthus: branches terete, glabrous, compressed when young; leaves oval, on short petioles, blunt at both ends, or rather coriaceae at the base, covered with fuscous scurf; but when young clothed with dense ferruginous tomentum, as well as the branches and flowers; peduncles solitary or crowded, axillary, bearing 3-5 flowers; corolla cymular, truncate at the apex; style elongate. Anthers 4. H. P. S. Native of Java, on the mountains in the province of Bantam. Loranthus chrysanthus, Blum. in litt. 1829. cx D. C. prod. 4. p. 300. Allied to D. cinnamomeus, but the flowers are shorter.

Golden-flowered Dendrophthoe. Shrub par.

25 D. cuneatus: branches terete, velvety from rufous down while young, as well as the leaves and flowers; leaves opposite or alternate, obovate-cuneated, very blunt, at length glabrous;
peduncles axillary, 3-5-flowered; bracteas lateral, cuneate, one to each flower; corolla cylindrical, truncate at the apex; style clavate. Ḥ. P. S. Native of the East Indies, at Martaban, on the banks of the Irrawaddy. Loranthus cuneatus, Wall. mss. Heyne, ex Roth, nov. spec. p. 193. Anthers probably 5, but in the younger flowers they are glued together, and with the stigma. Corolla 6 lines long, velvety on the outside. This, with the preceding species, may hereafter form a distinct genus, or at least a separate section.

Cuneated-leaved Dendrophthoe. Shrub par.

Cult. Like the rest of the genera of this order, the species are not cultivated in gardens. They are showy plants, with the habit of honesuckle.

IX. PTHIRIUSA (from φθίριος, φθείρειον, to destroy; the species destroy the trees on which they grow). Mart. in D. C. prod. 4. p. 672. Loranthus, sect. Clandestini, D. C. prod. 4. p. 287.

Lin. syst. Tetrándria, Monogynia. Flowers hermaphroditic, 4-parted, furnished with 3 jagged bracteas each, some of them crowded in the axils of the leaves. Anthers fixed by the back, ovate. Styles short; stigma capitate. Berry ovate. Flowers small, axillary, sessile, or in axillary racemes.

1 P. Clandestina; glabrous; branches compressedly tetragonal while young; leaves opposite, obovate, coriaceous; flowers axillary, solitary, sessile, small; petals 4, concave; anthers ovate; berries oblong. Ḥ. P. S. Native of Brazil, in the province of Para, in woods. Loranthus clandestinus, Mart. in Schultes, syst. 7. p. 96. Flowers hardly half a line long; bracteas suborbicular, jagged, one under each flower. Stamens shorter than the petals, but equal in length to the style. The anthers are said to be almost sessile.

Clandestine-flowered Pthirusa. Shrub par.

2 P. Salicifolia; branches compressedly tetragonal above; leaves opposite, lanceolate, acuminate, glaucous, coriaceous; racemes solitary, axillary, 3 times shorter than the leaves; pedicels 3-flowered, short, bearing 3 bracteas at the apex; petals 4, linear-lanceolate; anthers roundish-ovate. Ḥ. P. S. Native of Brazil, in the province of Minas Geraes. Loranthus salicifolius, Mart. in Schultes, syst. 7. p. 102. Flowers small, probably dioecious.

Willow-leaved Pthirusa. Shrub par.

3 P. Lucarquensis; plant glabrous, much branched; branches terete; leaves petiolate, roundish-elliptic, acute, rounded at the base, somewhat membranous, veiny, with the middle nerve rather prominent; racemes axillary and terminal, few-flowered; flowers almost sessile, scattered, bracteal; petals 4, oblong, rather concave; anthers unknown. Ḥ. P. S. Native of Peru, in temperate parts near Lucarque. Loranthis Lucarqueensis, H. B. et Kunth, nov. gen. amer. 3. p. 440. Schultes, syst. 7. p. 102. Leaves an inch long, and 9-10 lines broad; petioles 4-5 lines long. Racemes 3 lines long. Flowers minute, of a whitish yellow colour.

Lucarque Pthirusa. Shrub par.

Cult. The species of this genus do not possess any beauty, and are not cultivable in the gardens.

X. SCCURRULA (a diminutive of Squarria, a parasite; plants parasitical on trees). Loranthus, sect. iii. Sc hourlla, D. C. prod. 4. p. 501.

Lin. syst. Tetra-Pentándria, Monogynia. Flowers hermaphrodite. Petals 4-5, joined together into a long tube, which is divided at the apex into 4 or 5 short unilateral lobes, usually gibbous at the base, opening by a longitudinal fissure as in Lobélia. Stamens 4-5; filaments adhering a long way to the corolla, but free at the apex; anthers fixed by the base, seldom by the back, to the top of the filaments, oblong, erect. Style filiform or clavate; stigma capitate. Peduncles axillary, few-flowered, or racemose, having a solitary bractea under each flower, which is usually pressed to the ovary.

§ 1. Flowers tetraedrous. Corolla 4-parted.

1 S. Roxburghii; branches terete, glabrous; leaves opposite, ovate, subcordate, white from soft down beneath; peduncles crowded in the axils of the leaves, very short, simple or branched, 1 or few-flowered; bractea adpressed to the ovary, which is turbinate; alabastra cylindrical, 4-lobed at the apex, and having the tube cleft longitudinally. Ḥ. P. S. Native of Malabar, and probably of China, if the synonyme of Linnæus does not appertain to S. Chinensis. Loranthus Scourrula, Lin. spec. 472. Roxb. cor. 2. t. 140. Corolla of a rusty grey colour and mealy on the outside, but dark purple inside.

Roxburgh's Scourrula. Shrub par.

2 S. Chinensis; branchlets and young leaves clothed with rusty villi: the rest glabrous; leaves opposite, ovate, on short petioles, coriaceous, obtuse, cuneated at the base; peduncles axillary, very short, bearing 2-5 umbellate pedicellate flowers; bractea ovate, small, under the ovary; limb of calyx truncate; corolla clavate, and curved in the bud, cleft longitudinally on one side; lobes of corolla 4, linear, short, reflexed. Ḥ. P. G. Native of China, where it was collected by Sir George Staunton. Loranthus Chinensis, D. C. coll. mem. vi. t. 7.

Chinese Scourrula. Shrub par.

3 S. Pulverulentum; the younger parts of the plant are clothed with mealy stellate tomentum; branches terete; leaves opposite, petiolate, broad-ovate, acute, at length glabrous; racemes lateral, tomentose, in fascicles; flowers pedicellate; tube of corolla long, terete, curved, cleft at the apex into 4 short unilateral reflexed lobes. Ḥ. P. G. Native of Nipaul, on trees at Hetaouana, and along the banks of the river Rapti. Loranthus pulverulentus, Wall. in Roxb. fl. ind. 2. p. 321. Schultes, syst. 7. p. 99. Petioles an inch long. Leaves 5-7 inches long. Corolla more than an inch long, mealy outside. Berry large, club-shaped, mealy.

Powdered Scourrula. Shrub par.

4 S. Fasciculata; glabrous; branches terete; leaves opposite, or somewhat verticillate, obovate, veiny above, but veinless beneath, coriaceous; fascicles lateral, few-flowered; lobes of corolla 4, reflexed, secedum; style longer than the exserted stamens. Ḥ. P. S. Native of Java, near Linga Jattie, in the province of Cheribon, on trees. Loranthus fasciculatus, Blum. bijdr. p. 661. Loranthus odoratus, Blum. bijdr. p. 663. does not differ from this species according to the author.

Fascicled-flowered Scourrula. Shrub par.

5 S. Fuscus; glabrous; branches terete, rather angular in the young state; leaves opposite, on short petioles, obovate, and oval, acute at the base, coriaceous, beset with rusty dots beneath while young; peduncles axillary, 1-2-flowered; corolla cleft on one side, having 4 erect lobes. Ḥ. P. S. Native of Java, on Mount Salak and Gede, on trees. Loranthus fuscus, Blum. bijdr. p. 600. Genitals dark purple. Stigma capitate. See Blum. bat. verhandl. 1823. p. 190.

Fuscus Scourrula. Shrub par.

6 S. Umbellifer; glabrous; branches terete; leaves opposite, oblong-lanceolate, on short petioles, acute at the base; peduncles in fascicles, axillary, and lateral, pubescent, 3-flowered, subumbellate; corolla very long, slender, cleft into 4 linear reflexed segments at the apex; stigma cleft. Ḥ. P. S. Native of Nipaul, on Mount Shecopore. Loranthus umbellifer, Schultes, syst. 7. p. 97. Loranthus umbellatus, Wall. in Roxb. fl. ind. 2. p. 222. but not of Roth. Corolla of a bright red colour, curved, pubescent. Peduncles clothed with ferruginous tomentum.

Umbel-bearing Scourrula. Shrub par.

7 S. Cordifolia; branches terete, villous, mealy while young;
leaves opposite, ovate-cordate, obtuse, villous on both surfaces, petiolate; racemes fascicled, villous, axillary; corolla tubular, clavate, villous, cleft at the apex into 4 short lanceolate lobes.

8. S. buxifolia; branches terete, rusty, of short peduncles, glabrous above, and clothed with fine velvety down beneath; fascicles of flowers axillary, on short peduncles, hardly longer than the pedi
cles; bracteas ovate, small, one under each flower; tube of corolla arch
ed, clothed with rusty velvety down, cleft into 4 linear-cu
nated unequal lobes. \( \text{S. buxifolia, Desr. in Lam. & Wall. \text{d. t. 3. p. 600.}} \) Schultes, syst. 7. p. 97.

**Budelia-like Scurrula.** Shrub par.

9. S. biflora; glabrous; branches terete; leaves petiolate, ovate-roundish, thickish; peduncles axillary, 1-2, biform, a little shorter than the petioles; bracteae ovate, girding the base of the o
varium; bud of corolla slender, somewhat clavate at the apex, arch
ed, clothed with rufous velvety down. \( \text{S. biflora, Desr. in Lam. & Wall. \text{d. t. 3. p. 600.}} \) Schultes, syst. 7. p. 110. Corolla 4-lobed.

**Two-flowered Scurrula.** Shrub par.

10. S. philippensis; branches terete, velvety from short down when young, as well as the peduncles, bracteas, calyxes, and corollas; leaves on short peduncle, oval, rather pubescent, obtuse at both ends; flowers few, in fascicles, axillary, on short pedi
cels; bracteae ovate, concave, small, under the o
varium; limb of calyx truncate; corolla cylindric, cleft into 4 linear nearly equal lobes at the apex; style filiform. \( \text{S. philippensis, Desr. in Lam. \text{d. t. 3. p. 204.}} \) Leaves 3 inches long and an inch broad. Corolla 7-8 lines long. Stigma small, capitate. Anthers linear, erect.

**Philippine Scurrula.** Shrub par.

11. S. vestita; branches terete; peduncles, under side of leaves, peduncles, bracteas, and flowers, clothed with rusty, mealy, velvety, stellate tomentum; leaves oblong-lan
ceolate, acute, shining above, and glabrous; fascicles of flowers numerous, on short peduncles in the axils of the fallen leaves; bracteae ovate, concave, small under the o
varium; limb of calyx somewhat 4-toothed; corolla cylindric, 4-lobed; lobes of corolla 4, linear, unilateral, reflexed. \( \text{S. vestita, Desr. in Lam. \text{d. t. 143.}} \) Wall. \text{p. l. rar. asiatic 3. t. 220.} Plant stout. Fascicles numerous, few-flowered, in the axils of the fallen leaves. Cor
olla cylindrical, with a subglobular apex before expansion, afterwards its limb bursts into 4 linear reflexed segments. On the outside the flower is rust or cinnamon coloured, and within purple and smooth. Berry oblong, tomentose.

**Clothed Scurrula.** Shrub par.

12. S. levis; branches terete, glabrous, when young compressed; leaves petiolate, opposite, elliptic-oblong, obtuse, villous, smooth; peduncles axillary, branched, 7-8-flowered, 4 times shorter than the leaves, and are, as well as the flowers, rather velvety from rusty down; bracteae lateral, small; tube of corolla terete, cleft on one side: lobes 4, oblong. \( \text{S. levis, Desr. in Lam. \text{d. t. 3. p. 204.}} \) Schultes, syst. 7. p. 110. Corolla 4-lobed.

**Smooth Scurrula.** Shrub par.

13. S. rufula; branches terete, glabrous in the adult state, but when young angularly subcompressed; leaves opposite, peti
olate, elliptic-oblong, acutish, glabrous, or clothed with rufous velvety down on the nerves beneath; bracteae lateral, small, con
vex; corolla with a terete tube, and 4 oblong lobes. \( \text{S. rufula, Desr. in Lam. \text{d. t. 3. p. 204.}} \) Schultes, syst. 7. p. 110. Corolla 4-lobed.

14. S. lepidota; branches terete, compressed while young, beset with velvety dots at first, but at length glabrous; leaves nearly opposite, oval, beset with rusty dots beneath; corolla 4-lobed, curved, elongated, covered with rusty dots; lobes reflexed, unilateral. \( \text{S. lepidota, Desr. in Lam. \text{d. t. 3. p. 204.}} \) Schultes, syst. 7. p. 110. Corolla nearly an inch and a half long.

**Wrinkled-leaved Scurrula.** Shrub par.

15. S. rugulosa; glabrous; branches rather compressed, but at length terete; leaves opposite or alternate, on very short pedi
cles, obovate-lanceolate, obtuse, glaucous, rufescens, with smooth rather pubescent margins; racemes axillary, oppo
site, simple, shorter than the leaves; bracteae concave, one at the side of each o
varium; corolla tubular, arch
ed: limb of 4 lanceolate lobes. \( \text{S. rugulosa, Desr. in Lam. \text{d. t. 3. p. 204.}} \) Schultes, syst. 7. p. 110. Corolla nearly an inch and a half long.

**Club-flowered Scurrula.** Shrub par.

16. S. corynitis; leaves opposite, broad-lanceolate; flowers axillary, few, aggregative, tetradas; corolla irregular, 4-1
obed; berry clavate. \( \text{S. corynitis, Desr. in Lam. \text{d. t. 218.}} \) Wall. \text{p. l. rar. asiatic 3. t. 220.}

**Obovate-leaved Scurrula.** Shrub par.

\( \text{§ 2. Flowers pentandrous. Corolla 5-lobed.} \)

* Species natives of Africa.

18. S. thomningii; branches terete, compressed at the apex; leaves petiolate, ovate, somewhat acuminate, coriaceous, glabrous and dark green above, somewhat canescent beneath from almost imperceptible down, as well as the branches; peduncles 1-3, axillary, short, bearing each 3-4 umbellate flowers on short pedal
cels; bracteae small, ovate, lateral, one under each pedicel; fru
it ovate. \( \text{S. thomningii, Desr. in Lam. \text{d. t. 3. p. 204.}} \) Schultes, syst. 7. p. 110. Corolla 4-lobed.

**Thomning's Scurrula.** Shrub par.

19. S. rufulus; branches terete, rather compressed at the apex; young leaves, peduncles, and flowers clothed with rusty down; leaves petiolate, ovate, obtuse at both ends, coriaceous; peduncles 1-3 together, shorter than the petals, bearing 2-3 1-flowered pedicels; bracteae lateral, oblong, 1 under each pedicel; flow
er-bud pentagonal at the apex; fruit ovate. \( \text{S. rufulus, Desr. in Lam. \text{d. t. 3. p. 204.}} \) Schultes, syst. 7. p. 110. Corolla 4-lobed.

**Rufulus Scurrula.** Shrub par.

20. S. sessilifolia; glabrous; branches terete, simple; leaves sessile, opposite, ovate-roundish, cordate at the base; flowers
many in the axils, fascicled, sessile, deflexed; corolla tumid at the base, narrowed above, cleft longitudinally, hence it is expanded into a 5-lobed ligula on one side. \( \gamma \). P. S. Native of Africa, at Koto or Keta. *Loranthus sessilifolius*, Beauv. fl. d'ov. p. 8. t. 23. Schultes, syst. 7. p. 108. The anthers are delineated in the figure versatile.

**Sessile-leaved Scurreda.** Shrub par.

21 S. *Belvisi*; glabrous; branches simple, terete; leaves on short petioles, nearly opposite and alternate, broad ovate-lanceolate, acute; peduncles very short, axillary, numerous, fascicled, 1-flowered, deflexed; corolla tumid at the base, narrowed above, cleft laterally, expanded into a 5-lobed ligula at the apex; anthers somewhat versatile. \( \gamma \). P. S. Native of America, in the kingdom of Waree, at Chama or Sama. *Loranthus Belvisi*, D. C. prod. 4. p. 303. *Loranthus lanceolatus*, Beauv. fl. d'ov. 2. p. 8. t. 64. Schultes, syst. 7. p. 108. but not of Ruiz et Pav.

*Belvisi's Scurreda.** Shrub par.

22 S. *Pentagonia*; glabrous; branches terete; leaves on short petioles, ovate or lanceolate, coriaceous, almost veinless, glaucous; flowers 4-5, in the axils of the leaves, sessile, crowded; bracteas calyceiform under the ovary; corolla tumid at the base, and contracted under the middle, clavate, and pentagonal at the apex before expansion, but at length expanded into a 5-lobed ligula; filaments flexed; style tymid and pentagonal under the apex; stigma capitale. \( \gamma \). P. S. Native of Senegal, on trees. *Loranthus pentagonia*, D. C. coll. mem. vi. t. 8. This species is easily distinguished from the rest in the form of the style and flower-bud. *It is very like S. Belvisi.*

**Pentagonal-leaved Scurreda.** Shrub par.

23 S. *Dodoneaeformia*; glabrous; branches terete; leaves on short petioles, elongated, oblong-linear, obtuse, attenuated at the base, thick and coriaceous, glaucous, almost nerveless; flowers 2-3 together, sessile, crowded; bracteas cup-shaped, one under each ovary; alabastra cylindrical; corolla tumid at the base, but somewhat constricted above, expanded into a 5-lobed ligula at the apex; filaments flexed; style tymid at the apex and pentagonal; stigma capitata. \( \gamma \). P. S. Native of Senegal, on the trunks of tamarind trees. *Loranthus dodoneaeformia*, D. C. coll. mem. vii. t. 9. Allied to S. *Pentagonia*.

**Dodonea-leaved Scurreda.** Shrub par.

24 S. *Olyca*; glabrous; branches terete; leaves alternate, opposite, and in 3 in a whorl, oblong or ovate-oblong, obtuse, covered with a glaucous bloom; peduncles axillary, erect, bearing each 3 flowers at the apex, on short pedicels; corolla rather tumid at the base, constricted in the middle, and divided at the apex into 5 linear revolute lobes; anthers linear, erect. \( \gamma \). P. G. Native of the Cape of Good Hope. *Loranthus glaucus*, Thumb. fl. cap. p. 285. but not Ruiz et Pav. Schultes, syst. 7. p. 104. Moquiniâ rupra, Spreng. ex Zeyh. in herb. Moricand. Habit almost of *S. oleofolia*, but differs in the anthers being long and linear, not oval, and in the stamens being free, not concretes.

*Var. \( \beta \)*, Burchellii (D. C. prod. 4. p. 303.) leaves more remote and narrower, and less glaucous in the dried state. \( \gamma \). P. G. Native of the Cape of Good Hope. *Burchellia* cat. pl. afr. austr. no. 2887.

**Glaucus Scurreda.** Shrub par.

25 S. *Oleofolia*; branches terete; leaves opposite, oblong, silky, bluntish, feather-nerved; peduncles axillary, very short, bearing each 3 almost sessile flowers at the apex; corolla tumid at the base, and narrowed above, tubular, 5-lobed: lobes short, deflexed; stamens monadelphous; anthers oblong, fixed by the base. \( \gamma \). P. G. Native of the Cape of Good Hope. *Loranthus oleofolia*, Cham. et Schlecht. in Linnaea. 3. p. 209. Lichtensteinia oleofolia, Wendl. coll. 2. p. 4. t. 39. *Loranthus speciosus*, Dietr. Corolla red. Ovarium 1-celled; cell pentagonal, 1-seeded, ex Cham. et Schlecht. not 5-seeded.

**Olive-leaved Scurreda.** Shrub par.

26 S. *Cane'scens*; every plant of the part is cane-scent; leaves oval, obtuse, small. \( \gamma \). P. S. Native of the Cape of Good Hope, in arid places on the branches of Lycium. *Loranthus cane'scens*, Burch. cat. geogr. 1119. trav. afr. 2. p. 90.

**Canescent Scurreda.** Shrub par.

27 S. *Clava*; glabrous; branches terete; leaves opposite, on short petioles, oval, obtuse, coriaceous, almost veinless, rusty beneath; peduncles many, crowded, very short, in the axils of the leaves, dilated under the apex into a somewhat discoid bractea; limb of calyx 5-toothed; alabastra cylindrical, clavate; corolla at length cleft laterally, 5-lobed; style strictly angular. \( \gamma \). P. S. Native of Madagascar. *Loranthus clavata*, Lam. dict. 3. p. 598. but not of Roxb. Schultes, syst. 7. p. 106. Filaments of stamens adunate a long way to the corolla; anthers oblong, erect, terminal.

**Clavate-leaved Scurreda.** Shrub par.

* * Species natives of Asia.*

28 S. *Henkeana*; glabrous; branches terete; leaves petiolate, lanceolate-oblong, obtuse or acuminate, coriaceous, obliquely veined; peduncles from the forks of the branches erect, bearing 3-flowered pedicles; bracteas ovate, concave, one under each ovary; calyx pubescent, entire; corolla tubular, cleft laterally on one side: lobes 5, linear, reflexed. \( \gamma \). P. S. Native of the island of Luzon. *Loranthus Henkeana*, Presl, in herb. Henke, ex D. C. prod. 4. p. 304. Schultes, syst. 7. p. 113. Leaves 3-6 inches long, and 1½ to 2 inches broad, on petioles 8-10 lines long. Corolla 3-4 lines long, glabrous. Calyx reddish.

* Henke's Scurreda. Shrub par.*

29 S. *Malifolia*; glabrous; branches terete; leaves ovate, acute, petiolate, coriaceous, oblanceolate, oblong, obtuse or acuminate, crenate, obliquely veined; peduncles from the branches erect, bearing 3-flowered pedicles; bracteas ovate, concave, one under each ovary; calyx pubescent, entire; corolla tubular, cleft nearly at the middle, and somewhat laterally cleft; lobes linear, reflexed. \( \gamma \). P. S. Native of the island of Luzon. *Loranthus malifolius*, Presl, in herb. Henke, ex D. C. prod. 4. p. 304. Schultes, syst. 7. p. 113. Perhaps sufficiently distinct from *S. Henkeana*.

**Apple-leaved Scurreda.** Shrub par.

30 S. *Longiflora*; glabrous; leaves ovate-oblong, obtuse, veiny, coriaceous; upper ones rather cordinate at the base; racemes axillary, simple, short, suberosembrose; bracteas concave, one under each ovary; limb of calyx 5-toothed: corolla pale, cleft, and contracted beneath the limb; lobes unequal, cuneate. \( \gamma \). P. S. Native of Malabar and Pondicherry. *Loranthus longiflorus*, Desr. in Lam. dict. 3. p. 408. Wall. in Roxb. fl. ind. 2. p. 217. Schultes, syst. 7. p. 112. Wall.-Iti-canni, Rheed. mal. 10. p. 5. t. 4. Flowers purple, curved, 20 lines long. Anthers linear, inserted by the base.

**Long-flowered Scurreda.** Shrub par.

31 S. *incarnata*; plant while young beset with deciduous stellate down; leaves alternate, on short petioles, broad-ovate, acute, nervèd; racemes rising beneath the leaves, hoary from wool; flowers nearly sessile, each furnished with 1 bractea; limb of calyx 5-toothed; tube of corolla gibbous at the base, but contracted a little above the base; limb 5-parted: lobes reflexed; stigma clavate. \( \gamma \). P. S. Native of the East Indies, in the island of Pulo Nias. *Loranthus incarnatus*, Jack, in Roxb. fl. ind. 2. p. 213. Schultes, syst. 7. p. 111. Leaves 9 inches long. Corolla above 2 inches long, slightly tomentose without, pale rosy, with a greenish limb; tube gibbous below, contracted a little above the base, then widening upwards till it suffers a
second contraction before expansion into the limb, which is about a fourth the length of the tube, 5-parted, with reflexed segments. Berry mealy, ovate, 1-seeded. This is a beautiful species. 

**Loranthaceæ. X. Scurrula.**

32 S. elegans: glabrous; branches terete; leaves opposite, or nearly alternate, oblong, obtuse, somewhat euneated at the base, with undulated margins, almost veinless, coriaceous; racemes axillary, short, or nearly terminal, linear, 5-7-flowered; corolla terete, somewhat incurved, 5-lobed; lobes linear, spreadingly reflexed, nearly equal; style exerted beyond the anthers. *P. S.* Native of the East Indies, near Yenangenn. Loranthus elegans, Wall. cat. no. 530. Leaves 2 inches long, and 9 lines broad. Corolla glabrous, an inch and a half long, red. Antlers linear, erect. Calyx truncate. Bracteas lateral, small, one under each ovary. 

**Elegant Scurrula.** Shrub par. 

33 S. cylindrica; glabrous; leaves alternate, petiolate, lanceolate, acute at both ends, smooth, nervied; racemes axillary, stiff, length of the leaves; flowers pedicellate, rather distant from each other, each girdled at the base by a bractea on the outer side; limb of calyx almost entire; limb of corolla much longer than the tube, which is cylindrical, with reflexed segments. *P. S.* Native of Sumatra. Loranthus cylindricus, Jack, in Roxb. fl. ind. 2. p. 213. Schultes, syst. 7. p. 110. D. C. prod. 4. p. 305. Leaves 4-5 inches long; petals about an inch long. Corolla red, perfectly cylindrical, before expansion, 5-petalled: limb reflexed, 3 times as long as the tube; petals linear, separating almost to the base. Ovarium cylindrical, 1-seeded. Flowers sometimes tetrandrous.

**Cylindrical-flowered Scurrula.** Shrub par. 

34 S. indic a; glabrous; branches terete; leaves nearly opposite, oblong, obtuse, on short pedicles, bluntish, feather-nerved; racemes axillary, or nearly terminal, solitary, simple, shorter than the leaves; flowers on short peduncles, each peduncle bearing 1-3 sessile flowers at the top, each flower propped by an ovate bractea; petals 5, linear, acute, hardly concretes at the base: the border reflexed; anthers linear, erect. *P. S.* Native of the island of Timor, and probably elsewhere in India. Loranthus Indicus, Desr. in Lam. dict. 3. p. 601. Schultes, syst. 7. p. 149. D. C. prod. 4. p. 305. Lonicera Zeylanica, Gaertn.fruct. 1. p. 137. t. 27. *Corolla purple, glabrous, 7-8 lines long. Leaves 3 inches long, 1 or 1½ broad, on petioles, which are 2-3 lines long. Berry ovate.* 

**Indian Scurrula.** Shrub par. 

35 S. tubinata; glabrous; branches terete; leaves sub- alternate, on short pedioles, oval or oblong, obtuse or acutish, thick; peduncles axillary, 2-3-cleft, much shorter than the leaves; bracteas ovate, one under each ovary, which is turbinate; limb of calyx unequally and bluntly 5-toothed. *P. S.* Native of the East Indies, on the Nelligerry mountains, where it is called Mandjil, along with other species, by the natives. Loranthus tubinatus, D. C. prod. 4. p. 305. Leaves 3 inches long, and 12-15 lines broad; petals 5-6 lines long. Corolla unknown, and is only judged to belong to the present section of the genus in the calyx being said to be 5-parted. 

**Turbinate-fruiting Scurrula.** Shrub par. 

36 S. dicolor; glabrous; leaves nearly opposite, on short pedioles, from oval to lanceolate, thick, undulated, hardly veined; racemes axillary, simple, solitary, many flowered; bracteas concave, cordate, small, one adpressed to each ovary on the outer side; calyx cup-shaped, with an entire border; corolla long, tubular, a little curved, swelling from the bottom to within a third of the mouth, then contracting a little, with a 5-parted border; upper fissure much the deepest; lobes linear, reflexed towards one side; stigma clavate; berry oblong, smooth, 1-celled, 1-seeded. *P. S.* Native of the East Indies, frequent on trees. Loranthus bicolor, Roxb. cor. 2. p. 19. t. 139. fl. ind. 2. p. 205. Schultes, syst. 7. p. 109. D. C. prod. 4. p. 305. Flowers the size and appearance, and much like those of a honeysuckle, red at the base, and green at the apex, nearly 1½ inch long. Anthers exerted, linear, fixed by the base. Leaves from 5-6 inches long; and from ½ to 1 inch in breadth. 

**Two-coloured-flowered Scurrula.** Shrub par. 

37 S. falcat a; glabrous; branches terete; leaves opposite, on short petioles, linear, glaucous, coriaceous, obtuse, laterally falcate; racemes axillary, few-flowered; bracteas short, one under each ovary on one side; alabastra falcate, cylindrical, pentagonal at the apex; lobes of corolla 5; anthers linear-oblong, inserted by the base. *P. S.* Native of Madras. Loranthus falcatu s, Lin. fil. suppl. 211. Schultes, syst. 7. p. 150. The flowers are fusilous according to Linnaeus. 

**Falcat-e-flowered Scurrula.** Shrub par. 

38 S. venosa; glabrous; branches terete; leaves subalternate or opposite, oval, attenuated at both ends, coriaceous, having the veins blood coloured beneath; racemes axillary, much shorter than the leaves, rather conics; limb of calyx somewhat 5-toothed; tube of corolla more or less cleft on one side; lobes 5, reflexed, unilateral; berries oblong-conical. *P. S.* Native of Java, at Buitenzorg, upon trees. Loranthus venosus, Blum. bijdr. p. 668. bat. verh. 1823. p. 188. Corolla 4-5 lines long. Leaves variable in form. Style a little longer than the stamens; stigma ciliate. Antlers linear, adnate. Blum. l. c. 

**Venous Scurrula.** Shrub par. 

39 S. pentandra (Lin. mant. p. 63.) glabrous; branches terete; leaves alternate, on short petioles, oblong, bluntish, thickish; racemes axillary, solitary, few-flowered, and are, as well as the flowers, covered with velvety mealy down; bracteas ovate, one under each ovary; limb of calyx bluntly 5-toothed; bud of corolla cylindrical; petals 5, linear. *P. S.* Native of Java, on trees. Loranthus pentandrus, Lin. mant. p. 63. Blum. bijdr. p. 661. Schultes, syst. 7. p. 110. D. C. prod. 4. p. 305. Leaves 4 inches long, and an inch broad. Corolla 7 lines long, purplish inside. Anters erect. 

**Var. β, flavus (Blum. bijdr. p. 661. under Loranthus) racemes crowded; tube of corolla inflated. *P. S.* Native of Java, on trees, about Buitenzorg. 

**Pentandra Scurrula.** Shrub par. 

40 S. amplexifolia; glabrous; branches terete; leaves sessile, opposite, cordate at the base, orbicular, coriaceous, marginate; flowers racemos; bracteas rather concave, orbicular, one under each ovary on one side; corolla cylindrical, contracted under the apex; lobes oblong. *P. S.* Native of the East Indies, on the Nelligerry mountains, where it was collected by Noton. Loranthus amplexifolius, D. C. prod. 4. p. 305. Loranthus amplexicaulis, Wall. mss. but not of Kunth. Corolla 15 lines long, of a brownish purple colour. Anters linear, erect. Calyx truncate. Upper leaves 2 inches in diameter. 

**Clositating-leaved Scurrula.** Shrub par. 

41 S. heteranth a; glabrous; branches terete, angular while young; leaves alternate, on short petioles, elliptic or lanceolate, somewhat attenuated at both ends, thick, and coriaceous; racemes axillary, length of the leaves; pedicles twice the length of the calyx; bracteas convex, short, one under each ovary on the outside; bud of corolla nearly straight, somewhat pentagonal: with 5 linear lobes; anthers erect, linear, twice the length of the filaments. *P. S.* Native of the East Indies, at Martaban. Loranthus heteranthus, Wall. cat. no. 537. Leaves 4 inches long, and 15-18 lines broad. Flowers 8-10 lines long. Calyx truncate.
Variable-flowered Scurrula. Shrub par.
42 S. FLELO'SGA; leaves alternate, oval, obtuse, tapering a little at the base, glabrous, of the consistence of parchment; racemes axillary; flowers secund; tube of corolla very long, clavate, angular.  P. S. Native of Java, near Tjiradjas. Loranthus prelongus, Blum. bijdr. p. 664. Schultes, syst. 7. p. 112. Allied to S. clavata and S. longiflora. Tube of corolla yellow, nearly 3 inches long; lobes linear, channelled inside, greenish.

Longest-flowered Scurrula. Shrub par.
43 S. CURVATA; leaves opposite or alternate, oblong, bluntish, acute at the base, coriaceous, rather veiny, glabrous; racemes axillary, solitary; tube of corolla elongated, curved; lobes reflexed.  P. S. Native of Java, on Mount Salak, parasitical on trees. Loranthus curvatus, Blum. bijdr. p. 665. Schultes, syst. 7. p. 110. Tube of corolla nearly 1½ inch long, yellow, but having the limb of a pale orange colour. Anthers adnate, elongated.

Curved-flowered Scurrula. Shrub par.
44 S. BRACTEATA; every part of the plant clothed with grey starry tomentum; branches terete; leaves small, alternate, ovate, obtuse, tapering to the base, on rather long petioles; umbels axillary, 5-flowered; bracteas oblong, tongue-shaped, one under each ovarium; corolla long, slender, cylindrical at the base, but widening at the apex, with the throat contracted: lobes linear, unilateral, much shorter than the tube.  P. S. Native of the East Indies. Loranthus bracteatus, Heyne, in Roxb. fl. ind. 2. p. 220. Loranthus Heyneanum and L. tomentosus, Schultes, syst. 7. p. 105 and 106. Loranthus tomentosus, Roth, nov. spec. p. 191. Umbels densely villous; pedicels one-third of an inch long.

Bracteate Scurrula. Shrub par.
45 S. GOODENIEFOLIA; branches terete, glabrous; leaves alternate, obovate-cuneated, obtuse, somewhat emarginate, tapering into the petioles at the base, rather veiny, glabrous in the adult state, but canescent in the young state from stellate deciduous down; peduncles axillary, 2-5-flowered; bracteas ovate, acute, one under each ovarium; tube of calyx pubescent, with 5 rather ciliated teeth; corolla cylindrical, cleft on one side: lobes 5, linear, reflexed, unilateral; style filiform.  P. S. Native of the East Indies, on the Nellibehery mountains, where it is called Mandjil, and where it was collected by Leschenault. Loranthus goodenii-folius, D. C. prod. 4. p. 306. Very nearly allied to S. lobelii-florea.

Goodenia-flowered Scurrula. Shrub par.
46 S. LOBELIEFLOREA; glabrous; branches terete; leaves obovate-cuneated, obtuse, tapering into the petioles, sparingly veined; pedicels 1-2, axillary, 1-flowered, very short, spreading; bracteas ovate, acute, one under each ovarium; tube of calyx cylindrical, cleft on the inner side: lobes 5, linear, reflexed, unilateral; style filiform.  P. S. Native of the south of India, where it is called Vira-marum and pile-riey by the natives, and where it was collected by Leschenault. Loranthus lobelieflorus, D. C. prod. 4. p. 306. Leaves an inch long, and 4 lines broad. Corolla an inch long, red in the dry state. Loranthus cuneatus, Roth, nov. spec. p. 193.

Lobelia-flowered Scurrula. Shrub par.
47 S. ELASTICA; glabrous; branches strong, columnar: internodes short; leaves sessile, thick, ovate, acutish, obscurely 5-nerved; flowers almost sessile, in fascicles about the joints; tube of corolla cylindrical: having the limb beaked before expansion; segments linear, short, separating from the base upwards, revolute.  P. S. Native of Malabar. Loranthus elasticus, Desr. in Lam. dict. 3. p. 599. Wall. in Roxb. fl. ind. 2. p. 217. Schultes, syst. 7. p. 107. Belutta-Itti-canli, Rheed. mal. 10. p. 7. t. 3. The leaves are remarkably thick, and appear both trinerved and triple-nerved.

Elastic-flowered Scurrula. Shrub par.
48 S. REINWARDTIANA; leaves opposite, oblong, attenuated at both ends, coriaceous, veinless beneath; peduncles crowded, axillary, 1-flowered; tube of corolla very long, curved: lobes linear, unilateral, at length cincinnately revolute.  P. S. Native of Java, on the mountains. Loranthus Reinwardtianus, Schultes, syst. 7. p. 105. Loranthus coccineus, Reinw. in Blum. bijdr. p. 664. but not of Jack.

Reinwardt's Scurrula. Shrub par.
49 S. KENIGIANUS; glabrous; leaves nearly opposite, on short petioles, elliptic, veiny; racemes axillary; pedicels decollated, calyx rather truncate; corolla 5-clawed, clavate.  P. S. Native of the East Indies. Loranthus Kenigianus, Agardh, in Schultes, syst. 7. p. 108.

Kenig’s Scurrula. Shrub par.

Cult. The species of this genus are easily distinguished from the rest that are broken off from the old genus Loranthus in the tube of the corolla being curved, and bulged at the base on one side, as in Lobelia, cleft longitudinally on the upper side, and the segments all leaning to the lower side, and reflexed. The plants have the habit of honeysuckle, but are not cultivable.

XI. ELYTRANTHE (from elypor, elytron, a case or sheath, and anther, anthers, a flower; in reference to the joined bracteas forming a sheath under the flower). Lepoestegères and Elytranthe species of Blum. in litt. 1829. Loranthus species of authors. Loranthus, sect. iii. Symphýanthus, § 1-2-3 and s. C. prod. 4. p. 296-299.

LIN. SYST. Penta-Hexandria, Monogynia. Flowers hermaphrodite, pentameros or hexameros. Petals 5-6, joined together into a tube to the middle, and therefore divided to the middle into a 5-6 cleft regular limb. Stamens 3-6: filaments adnate to the petals at the base, and free at the apex; anthers fixed by the base, erect. Style filiform; stigma obtuse. Racemes axillary: flowers bracteate. — This genus differs from Struthanthus in the corolla being gamopetalous, and from Denrophëbe, to which it comes nearest, in the flowers being race-mose, not corymbose, and in each flower being usually furnished with more bracteas than one, which are not cup-shaped nor oblique, as in that genus; it also differs from Scarrule in the limb of the corolla being regular, not as in that genus unilateral; and from Loxanthora in the antlers not being oscillatory.

§ 1. Anguliflora (from angulus, an angle, and flos, a flower; the flowers are more or less hexagonal from crests at the base). Flowers tubular, usually twined at the base, and more or less hexagonal from crests, dividing into 6 lobes to the middle; anters erect. Bracteoles 3, joined together under each flower.

1 E. Retusa; glabrous; leaves opposite, on short petioles, obovate-oblong, coriaceous, retuse, or emarginate, with the lateral nerves indistinct; racemes short, usually solitary, rising from the axis of the fallen leaves; flowers pedicellate, each furnished with 1-2 bracteas at the base; limb of calyx entire; tube of corolla clavate, gibbous, and angular, contracted at the limb: lobes 3-6, lanceolate, reflexed.  P. S. Native of the Island of Singapore. Loranthus retusus, Jack, in Roxb. fl. ind. 2. p. 212. Schultes, syst. 7. p. 112. The plant fastens itself by long runners to trees. Leaves smooth, about 3 inches long. Margin of calyx entire. Tube of corolla clavate, gibbous, and angled above, rosy, suddenly contracted at the limb, which is yellowish green, having the lobes or segments shorter than the tube.

Retuse-leaved Elytranthe. Shrub par.
2 E. Ampullacea; glabrous; leaves opposite, on short petioles, oblong, polished; racemes axillary, solitary or in pairs, much shorter than the leaves; flowers opposite, on short pedi-
LORANTHACEÆ. XI. ELYTRANTHE.

cels; bracteas ovate, one at the base of each pedicel, and 2 others pressing the base of the germ, like an inferior bilabiate calyx; limb of calyx entire, rotate; corolla with a gibbous tube, and a 6-cleft regular border, the divisions revolute, and rather spatulate; anthers ovate, longer than the corolla; stigma large; berry long, oval. P. S. Native of the New Indies, in the forests of Silhet, but seems to prefer the Mango trees to all others. Loranthus ampullaceus, Roxb. fl. ind. p. 209. Leaves 3-4 inches long, and rather less than 2 inches broad. Flowers pretty large, greenish yellow. Berry yellow, size of a currant.

_Ampullaceae_ Elytranthe. Shrub par.

3 _E. carinata;_ glabrous; leaves opposite, petiolate, elliptic, somewhat acuminate; racemes spiked, 7-flowered, 3 times longer than the pedicels; bracteas 3, subconcrete under each flower; limb of calyx clearly shorter than the pedicel. P. S. Native of the New Indies, Martaban, and at Cheppedon. Loranthus carinatus, Wall. Orc. ind. 2. p. 3. Very like _E. ampullaceus._

4 _Little-leaved Elytranthe._ Shrub par.

5 _E. subglobose;_ glabrous; primary branches somewhat verticillate, rather compressed while young; leaves opposite, on short petioles, lanceolate, tapering at both ends; racemes axillary, and from the caticries of the fallen leaves, 2-3-angled, sessile, one-third shorter than the leaves; pedicels 1-flowered, remote; bracteas 3, rather concret under each ovarium; tube of corolla slightly ventricose, bluntly 6-angled: having the limb divided regularly into 6, rarely into 5 linear-clavate reflexed segments, which are nearly as long as the tube, their inside rugose, their extremity broad, concave, acute. P. S. Native on trees in the forest of Konkurrum, in the valley of Nipaul. Loranthus viridisflorus, Wall. in Roxb. fl. ind. 2. p. 219. Leaves smooth, about 3 inches long, rather conspicuously reticulated, less coriaceous than in most other species. Flowers green, rather remote, with the tube an inch and a half long. Filaments attached to the segments of the corolla, running down to their base. Style filiform; stigma rugose. Berry small, ovate.

Green-flowered Elytranthe. Shrub par.

5 _E. subglobose;_ glabrous; branches terete; leaves opposite, linear-oblong, on very short petioles, attenuated at both ends; peduncles axillary, simple, 3 times shorter than the leaves; bracteas trifiid, or 3 concretc ones under each flower; tube of corolla inflated, ovate, hexagonal; the limb divided into 6 linear-oblong erect segments. P. S. Native of the New Indies, on the banks of the Irawaddy, parasitical on trees. Loranthus subglobose, D. C. prod. 4. p. 297. Leaves 3 inches long, and 8 lines broad. Corolla 5 lines long, and the tube 3 lines in diameter. Anthers erect. Stigma small, capitulate.

Subglobose-flowered Elytranthe. Shrub par.

5 _E. fallax;_ glabrous; branches terete, compressed while young; leaves opposite, on short petioles, ovate, ending in a short blunt acumen, coriaceous, rather glaucescent; racemes axillary, short, few-flowered; bracteas lateral, ovate, small, one under each ovarium; flower-bud hexagonal at the base, having the tube at length broadly obconical: lobes 6, reflexed from the middle. P. S. Native of the island of Pulo-Penang. Loranthus fallax, Wall. cat. no. 523. Leaves 3 inches long, and usually about 2 inches broad.

_Pale Elytranthe._ Shrub par.

7 _E. viridiflora;_ glabrous; branches terete, when young rather compressed; leaves oblong, attenuated at both ends, opposite, on short petioles, stiff, rather glaucescent; peduncles axillary, short, few-flowered; flowers unknown; bracteas lateral, rounded, one under each ovarium; berries ovate. P. S. Native of the island of Pulo-Penang. Loranthus oleoides, D. C. prod. 4. p. 297. Loranthus oleifolius, Wall. miss. but not of Cham. et Schlecht. Allied to _E. fallax._ ex Wall.

_Olive-like Elytranthe._ Shrub par.

8 _E. globose;_ plant glabrous, branched; leaves opposite, though sometimes alternate, and 3 in a whorl, oblong, coriaceous, smooth, almost veinless; racemes or spikes axillary, or between the leaves, or from the axils of the fallen leaves, generally solitary, but sometimes 2-3 together, much shorter than the leaves; flowers sessile, opposite, from 3-6 pairs on each spike; bracteas no other than the perianth of the fruit, but according to D. C. the corollas are rather limb of calyx truncate; tube of corolla gibbos, 6-sided: limb 6-parted: segments regular, reflexed; berry round-oval, size of a pea. P. S. Native of the New Indies, throughout Bengal on trees. Loranthus globosus, Roxb. fl. ind. 2. p. 206. Leaves 3-2 inches long. Flowers small, of a greenish orange colour. Perianth of the flower inferior, 2-leaved, the under and exterior corolla, the inner bidentate: that of the flower no other than the circular margin of the pit, which receives the flower. Filaments inserted at the base of the segments of the corolla. Berry smooth, size of a pea, when ripe the pulp is yellow, clamy, and elastic.

_Globose-flowered Elytranthe._ Shrub par.


_Showy Elytranthe._ Shrub par.

10 _E. spilerocharpa;_ glabrous; branches terete; leaves on short petioles, opposite, ovate-oblong, coriaceous, veinless beneath; racemes axillary, solitary or twin; flowers angular. P. S. Native of Java, about Buitenzorg, Batavia, &c. on trees, where it is called _Mengando,_ as well as many other species, by the natives. Loranthus spilerocharpa, Blum. bijdr. p. 661. and bat. verhandl. 1823. p. 139. Schultes, syst. 7. p. 149. Tube of corolla angular: flower-bud 5 lines long.

_Round-fruited Elytranthe._ Shrub par.

11 _E. tata;_ glabrous; leaves opposite, petiolate, elliptic-ovate, coriaceous, smooth, acutish; panicles axillary, or rising beneath the leaves, shorter than the leaves; bracteas 2 or 3, embracing the ovarium; limb of calyx entire; tube of corolla acutely 6-angled, equal in length to the segments of the limb, which are 6, narrow, and revolute. P. S. Native of the interior of Bencoolen, on trees. Loranthus tatus, Jack, in Roxb. fl. ind. 2. p. 214. Schultes, syst. 7. p. 135. Leaves about 3 inches long. Corolla green, tipped with light red, and with a purplish tinge towards the base: having the tube clavate and dilated upwards. Stigma capitate. Berry subglobose.

_Spreading-panicled Elytranthe._ Shrub par.

12 _E. Cochinchinensis;_ glabrous, much branched; leaves opposite, ovate-lanceolate, acute; peduncles axillary, many-flowered, crowded, furnished with 3 concretc bracteas under each flower; tube of corolla hexagonal, with 6 linear-lanceolate lobes, which burst elastically, and become revolute; stigma capitate; berries ovate. P. G. Native of Cochinchina, on trees in gardens. Loranthus Cochinchinensis, Lour. coo. p. 195. Flowers greenish yellow. Berry yellowish red.

_Cochin-china Elytranthe._ Shrub par.

13 _E. avensis;_ glabrous; branches terete; leaves opposite, narrow-lanceolate, coriaceous, glabrous, veinless; peduncles crowded, axillary, usually 2-flowered; flowers angular, hexan-

14 E. tetragona; glabrous; branches tetragonal; leaves opposite, sessile, oval, acute or obtuse, of the consistence of parchment, glabrous; racemes crowded, axillary; flowers angular, hexandrous. † P. S. Native of Java, on trees about Tjiradjas, in the province of Kwang. Loranthus tetragonus. Blum. bijdr. p. 663. Schultes, syst. p. 7. p. 149. Corolla 3 lines long. Tetragonal-branched Elytranthe. Shrub par.

15 E. subumbellata; leaves opposite, oblong-lanceolate, long-acuminated, coriaceous, glabrous; racemes axillary, ultimate pedicels subumbellate; flowers hexandrous. † P. S. Native of Java, on trees near Tjiradjas, in the province of Kwang. Loranthus subumbellatus, Blum. bijdr. p. 662. Schultes, syst. p. 7. p. 148. Allied to E. sphaerocarpa, and is, as well as it, called Mengando by the natives of Java. Subumbellate-flowered Elytranthe. Shrub par.

§ 2. Rigidiflora (from rigidus, stiff, and flo, a flower; flowers stiff). Flowers pentandrous, tubular, eleft into 5 parts beyond the middle, having the lobes reflected from the middle; tube obconical, hardly pentagonal. Anthers erect. Bracteas one under each flower.

16 E. rigida; glabrous; branches terete, rather compressed when young; leaves opposite, petiolate; elliptic-lanceolate, acuminate; racemes axillary, simple, 7-flowered; flowers on short pedicels; bracteas ovate, lateral, one under each ovarium; calyx expanded, somewhat denticulated; tube of corolla ovate at the base; lobes linear-oblong, reflected from the middle. † P. S. Native of the East Indies, at Amberst. Loranthus rigidus, Wall. cat. no. 531. Leaves 2-3 inches long, and 18-18 lines broad. Corolla 9 lines long, finely velvety, as well as ovarium. Anthers linear. Flower-bud pentagonal at the apex. Stiff Elytranthe. Shrub par.

17 E. farinosa; glabrous; branches terete; leaves alternate, smooth, coriaceous, ovate, obtuse, on thick short petioles; racemes in axillary fascicles, clothed with much mealy stalkless whitish tomentum; tube of corolla ventricose, divided two-thirds of its length into 5 linear semi-recurred segments; berry large, ovate, slightly famstone. † P. S. Native of the East Indies, at Singapore. Loranthus farinosus, Desr. in Lam. dict. 3. p. 597. Wall. in Roxb. fl. ind. 2. p. 221. Schultes, syst. p. 111. D. C. coll. mem. vii. t. 4. Leaves nearly as large as a hand, with unequal margins, having the nerves remote and a little elevated. Flowers of a bright red colour, densely clothed with stalkless tomentum, which is easily rubbed off; they are about an inch long, having the tube wide. Mealy Elytranthe. Shrub par.

§ 3. Cupulata (from cupula, an acorn cup; in reference to the shape of the bractea, which surrounds the ovarium). Flowers small; bud of corolla equal at the base, terete, but globose and pentagonal at the apex; limb of 5 equal regular lobes. Anthers ovate, truncate, inserted by the base, dehiscing laterally. Stigma capitate. Bracteas cup-shaped, one girding or surrounding each ovary.

18 E. cupulata; branches terete, somewhat compressed at the apex; young petioles, leaves, peduncles, and flowers clothed with rusty down; leaves petiolate, ovate or oblong, acutish, coriaceous, more or less coriaceous at the base; peduncles very short, branched, umbrellately many-flowered; bracteas cup-shaped, one girding each ovary. † P. S. Native of Casamania, on the trunks of trees. Loranthus cupulatus, D. C. prod. 4. p. 298. Flowers 2-3 lines long. Branches clothed with rusty villi. Leaves variable in size and form. Berry obovate-globose. Lower part of the tube of the corolla cylindrical.

Cupular-bracted Elytranthe. Shrub par.

§ 4. Involutarâî (the flowers are involucrated with bracteas). Flowers tubular, 5-6-cleft. Anthers erect. Bracteas many, crowded, constituting an involucrum around the flowers, which are subcapitate.

19 E. involutarâî; glabrous; branches shining; leaves opposite, on short petioles, ovate-cordate, smooth; umbels axillary, nearly sessile, much shorter than the leaves, 4-flowered, involucrated by 4 bracteas; bracteas ovate-lanceolate, smooth, entire; calyx villous, with a 5-toothed border; tube of corolla villous, widening towards the mouth; limb regular, 5-parted, with linear-revolute segments; anthers oval; stigma 2-lobed. † P. S. Native of the East Indies, on the eastern border of Bengal; parasitical on trees. Loranthus involutarus, Roxb. fl. ind. 2. p. 209. Schultes, syst. p. 7. p. 106. Leaves 3-4 inches long. Flowers pentandrous. Stems equaling the segments of the corolla, and inserted on them below the middle. Ovarium silky. Style rather longer than the corolla. Var. $\beta$, hebeclada (D. C. prod. 4. p. 298. under Loranthus) branchlets angular, velvety from pale rusty down. † P. S. Native of Silhet. Wall. in fl. ind. p. 209. Corolla 6 lines long, villous on the outside, not gibbous at the base; lobes 5 equal. Anthers oval, inserted by the base. Involucrate-flowered Elytranthe. Shrub par.

20 E. gemmiflora; glabrous; branches tetragonal; leaves opposite, broad-ovate, or oval, obtuse, coriaceous; buds (imbricated involucra) axillary, solitary, sessile, many-flowered. † P. S. Native of Java, in woods on the mountains. Loranthus gemmiflorus, Blum. bijdr. p. 665. Schultes, syst. p. 159. Lepeostegæ gemmiflorus, Blum. in litt. This species is called Mengando by the Javanese. Flowers in capitulate heads, sessile, densely crowded upon the dilated tops of the peduncles. Anthers subulate, ex Blum. and the berries are pedicellate.

Bud-flowered Elytranthe. Shrub par.

21 E. loniceroides; glabrous; leaves almost sessile, ovate to lanceolate, attenuated, obtuse, rounded at the base; peduncles opposite, longer than the petioles, bearing each a head of a few sessile, hexandrous flowers, and each head supported by 4 broad-ovate, acute, concave bracteas; corollas long, tubular, slender, having the limb irregularly eleft into 5 cuneate spreading segments. † P. S. Native of the East Indies. Loranthus loniceroides, Lin. spec. 473. exclusive of the synonyme of Pluknet. Wall. in Roxb. fl. ind. 2. p. 216. Loranthus coriaceus and lonicerolodes, Schultes, syst. 7. pp. 107 and 108. Loranthus coriaceus, Desr. in Lam. dict. 5. p. 597. The flowers, according to Wallich, are hexandrous, but according to Lamarex pendentous. It is perhaps a species of Scirrula, on account of the irregular flowers. Honey-suckle-like Elytranthe. Shrub par.

22 E. ? umbellatus; leaves opposite, ovate-lanceolate; umbels axillary, opposite, on short peduncles, few-flowered; bracteas opposite, orbicular under each flower; limb of calyx truncate; corolla tubular; with 6 linear obtuse segments; anthers linear. † P. S. Native of the East Indies. Loranthus umbellatus, Roth. nov. spec. p. 192. but not of Wall. Schultes, syst. 7. p. 155. Flowers deep purple, glabrous, coriaceous.


§ 5. Elytranthes (from elytron, a sheath or case, and anthos, a flower; in reference to the large bracteas)

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forming a sheath to the flowers). *Flowers tubular, 6-cleft, hexandrous; lobes of limb linear, acute. Flower-buds nearly terete. Anthers erect. Flowers sessile, and decussate along the rachis of the spikes, furnished each with 3 bracteas, one under the flower and two opposite lateral combined ones; all large, concave, and deciduous."

23 E. \( L. \) (Blum, in litt. 1329.) glabrous; branches compressed; leaves opposite, oval-oblong, acute, coriaceous; spikes axillary, on short peduncles, sub-capitate, each bearing 4 decussate, tribracteate flowers. \( \frac{2}{3} \). P. S. Native of Java, in woods on the mountains. \( L. \) albidos, Blum. bijdr. p. 665.

\section*{Whitish Elytranthe. Shrub par.}

24 E. \( L. \) omninutus; branches terete, straight; leaves spathulately linear, thickened at the apex; peduncles nutate, somewhat secund. \( \frac{2}{3} \). P. S. Native of Brazil, on the banks of the Rio Grande. \( L. \) omninutus, Spreng, cur. port. 139. Each ovary is supplied by a cup-shaped bractea, or by 3 concrete ones.

\section*{Clothed Elytranthe. Shrub par.}

\section*{Culture. Like the rest of the genera of the present order, the species are not cultivable. The plants have much the habit of \( \textit{Lonicera}. \)

\section*{XI. \( L. \) NOTANThA-REA (from \( vescer \), \( notos \), the back, and \( \alpha \) \( \nu \) \( \psi \) \( \gamma \), \( anthera \), an anther; the anthers are fixed by the back to the filaments; hence they are oscillator). \( L. \) Notanthera, sect. iv. Notanthera, exclusive of \( \textsection \) IV. \( L. \) Tetramerium and \( \textsection \) III. \( L. \) Calanthe, D. \( \& \) pro. p. 307. - \( L. \) Notanthera species of authors.}

\section*{Lin. syst. \( Penta-Hexadria \), Monogynia. Flowers hermaphrodite. Petals 5-6-7-8, but usually 6, sometimes almost distinct to the base, and sometimes equally joined together at the base, linear or lanceolate. Stamens equal in number to the petals; filaments adnate to the corolla at the base, but free at the apex; anthers fixed by the back, oscillator or incumbent. Style filiform. Stigma clavate. Berries ovate.—Parasitical shrubs, natives of South America, except one from Asia. Peduncles coriaceous or racemose; branchlets usually bearing 3 flowers and 3 bracteas; sometimes the pedicels are 1-flowered, and with a bractea under each flower.}

\begin{center}
\textsection 1. \textit{Pentameria} (from \( \pi \) \( \nu \) \( \tau \) \( \tau \), \( pente \), five, and \( \mu \) \( \pi \) \( \nu \) \( \rho \), \( nera \), a part; the flowers are pentamous or divided into 5 parts.). \( L. \) pentameri and pentandrous, large, from 1-8 inches long.
\end{center}

1 N. \( \textit{grandilobus} \); shrub glabrous, dependent; stems terete; leaves on short petioles, oval, thick; racemes terminal, subcorymbose, few-flowered; pedicels bearing each 1 flower and 1 bract; bracteas ovate, concave, length of fruit; petals 5, linear, joined to the middle; anthers versatile. \( \frac{2}{3} \). P. G. Native of \( \textit{Parasitha} \), parasitical on trees, where it is called \( \textit{Hatun Mecuad} \). \( L. \) grandilobus, Ruiz, \( \& \) Pav. fl. per. 3. p. 45. t. 275. f. a. Schultes, syst. 7. p. 115. Corolla very long. Berry blue, size of an olive.

Great-flowered Notanthera. Shrub par.

2 N. \( \textit{lignobracteatus} \); glabrous; branches terete; leaves scattered, lanceolate, or ovate-lanceolate, acute, sessile, coriaceous, veiny; spikes terminal; bracteas foliaceous, linear-lanceolate; flowers adhering to the bracteas at the base; flower-bud clavate; petals 5, linear; anthers versatile. \( \frac{2}{3} \). P. G. Native of \( \textit{Parasitha} \). \( L. \) longobracteatus, Desr. in Lam. dict. 3. p. 590. Schultes, syst. 7. p. 117. Leaves 18-24 lines long, and 8-9 lines broad. Corolla 1 inch long.

\begin{center}
Long-bracteate Notanthera. Shrub par.
\end{center}

3 N. \( \textit{verticillatus} \); branches terete, 3 in a whorl; leaves also usually 3 in a whorl, lanceolate, nerveless, glaucous, usually secund; flowers terminal, secund, crowded into heads; bracteas ovate, concave, 1 under each flower; petals 5, joined at the base, spathulately-lanceolate and revolute at the apex; anthers oblong.

4 N. \( \textit{ceusius} \); glabrous; branches terete; leaves on short petioles, ovate-lanceolate, or lanceolate, thickish, veiny; peduncles 1-flowered, disposed in terminal racemes, bearing under each flower an oblong bractea, which is 3 times longer than the ovary; petals 5, joined to the middle, and spreading at the apex, linear; anthers incumbent. \( \frac{2}{3} \). P. G. Native of the Andes of Peru, upon trees. \( L. \) ceusius, Spreng syst. 1. p. 123. \( L. \) glaucus, Ruiz, \( \& \) Pav. fl. per. 3. p. 45. t. 275. f. b. H. B. \& Kuntz. nov. gen. amer. 3. p. 458. but not of \( \textit{Thunberg} \). \( L. \) glaucus, Ruiz, \( \& \) Pav. fl. per. 3. p. 458. but not of \( \textit{Fleischner} \). \( L. \) coriaceus, Dietr. gart. lex. 4. p. 468. Schultes, syst. 7. p. 117. Leaves an inch or more long, and half an inch broad; petioles 2 lines long. Flowers an inch long, red at base and apex, but yellow in the middle. Berry oval, dark purple. This species is nearly allied to \( L. \) glaucus, Ruiz.

\begin{center}
Grey Notanthera. Shrub par.
\end{center}

5 N. \( \textit{peloponnis} \); glabrous; branches terete, rather glaucous; leaves opposite, on short petioles, lanceolate, thickish, veiny; peduncles 1-flowered, disposed in a terminal raceme, bearing an ovate, acute bractea under each flower, which is one-half shorter than the ovary; limb of calyx truncate; petals 5, joined together a little beyond the middle; anthers fixed by the back to the filaments. \( \frac{2}{3} \). P. G. Native of \( \textit{Parasitha} \), where it was collected by Poeppig. Leaves an inch long. Flowers 2 inches long.

\begin{center}
Poeppig's Notanthera. Shrub par.
\end{center}

6 N. \( \textit{Sternebergianus} \); glabrous; branches terete; leaves ovate or oval, obtuse, coriaceous, veinless above; peduncles many, short, 1-flowered; crowded, coriaceous, rising from the axils of the upper leaves and the tops of the branches; bracteas ovate, one under each ovary, and shorter than it; petals 5, linear, hardly concrete at the base; anthers versatile. \( \frac{2}{3} \). P. G. Native of \( \textit{Parasitha} \), near \( \textit{La Guardia} \), and \( \textit{Aconcagua} \), and on the Cordillera of \( \textit{Chili} \). \( L. \) Sternebergianus, Schultes, fil. in herb. Henke, and syst. 7. p. 116. \( L. \) glaucus, Gill. but not of \( \textit{Ruiz} \) and \( \textit{Pav} \). nor \( \textit{Thunberg} \). Leaves 12-15 lines long, and 8-10 broad; petioles \( \frac{1}{2} \) inch line long. Allied to \( L. \) \( \textit{ceusius} \), but differs in the bracteas being one half shorter than the ovaries, not 3 times longer.

\begin{center}
Sterneberg's Notanthera. Shrub par.
\end{center}

7 N. \( \textit{Pohlii} \); glabrous; branches terete; leaves oval, obtuse at both ends, on short petioles, thick, coriaceous, glaucous; the middle nerve hardly distinct at the base, the rest of it obsolete; peduncles axillary, solitary, shorter than the leaves, opposite, dichotomously coriaceous, few-flowered; petals 5, linear, thick, almost distinct, bearing each a ligula beneath the stamens; anthers versatile. \( \frac{2}{3} \). P. S. Native of \( \textit{Parasitha} \), where it was detected by Pohl. \( L. \) glaucus, Pohl. in litt. but not of others. \( L. \) Pohlil, D. \( \& \) pro. 4. p. 308. Leaves 12-15 inches long, and 8-9 broad. Corolla an inch long. Bracteas small, very blunt, one under each flower. Perhaps a species of \( \textit{Eisittia-céntikisk} \).

\begin{center}
Pohl's Notanthera. Shrub par.
\end{center}

8 N. \( \textit{Mierráncéa} \) (from \( \mu \) \( \nu \) \( \sigma \) \( \nu \) \( \zeta \), \( mieros \), small, and \( \alpha \) \( \nu \) \( \theta \) \( \upsilon \), \( antheros \), a flower; flowers of the species small). Flowers small, usually hexameros or divided into 6 parts, but in a very few they are divided into 4-5-6 parts, disposed in racemes; the branches of the raceme usually bearing 3 flowers and 3 bracteas each.—Species all natives of \( \textit{America} \).
**Racemes axillary.**

8 N. *sarmentosus*; glabrous, rather scendent, hence the branches throw out roots on one side; branches angular; leaves petiolate, oblong-lanceolate, acute, somewhat complicate and keeled; having the middle nerve rather prominent; racemes axillary, about equal in length to the leaves; having their branches short and angular, and bearing 3 bracteas and 3 sessile flowers each at the apex; petals 6, linear-spatulate; anthers ovate, incumbent. P. P. G. Native of Peru, at Munna: parasitical on trees. Loranthus *sarmentosus*, Ruiz et Pav. f. fl. per. 3. p. 49. t. 278. f. a. Schultes, syst. 7. p. 145. Corolla yellowish, 3–4 lines long. Berry oblong, greyish. Leaves 1½ inch long, and an inch broad; petiolo 2 lines long.

*Sarmentose* Notanthera. Shrub par.

9 N. *acuminatus*; glabrous; branches angular, somewhat sarmentose; leaves petiolate, remote, ovate, long-acuminate; racemes axillary, one half shorter than the leaves; having their branches bracthate, and bearing each 3 ovate, concave, acute bracteas, and 3 sessile flowers; petals 6, linear; anthers ovate. P. G. Native of the Andes of Peru, in groves. Loranthus *acuminatus*, Ruiz et Pav. f. fl. per. 3. p. 49. Schultes, syst. 7. p. 144. Very nearly allied to N. *sarmentosus*, but differs in the leaves being flat, in the stigma being peltate, and the berries being brownish yellow.

*Acuminated-leaved* Notanthera. Shrub par.

**Racemes terminal and axillary.**

10 N. *sellowii*; glabrous; branches tetragonally terete, radicant; leaves obovate, retuse, or emarginate, ending in a recurved mucrone, cartilagineous, feather-nerved, tapering into the short petioles; racemes axillary and terminal, naked, shorter than the leaves; having the branches bearing 3 flowers and 3 bracteas; limb of calyx lax; corolla 6-parted; with linear lobes; anthers versatile. P. P. S. Native of Brazil. Loranthus *Sellowii*, D. C. prod. 4. p. 312. Loranthus rethusa, Cham. et Schlecht. in Linneä. 3. p. 215. but not of Jack. Leaves 20 lines long, and 13–16 lines broad; petiolo 4 lines long. Corolla 3 lines long. Stigma thickish.

*Sellii's* Notanthera. Shrub par.

11 N. *radicans*; glabrous; branches terete, elongated, radicant; leaves ovate, oblong, or lanceolate, acuminate, ending in a subulate point, feather-veined, with carilagineous margins, running down the petioles at the base; spikes axillary and terminal; flowers and bracteas by threes; corolla 6-parted, with linear lobes; anthers versatile. P. P. S. Native of Brazil. Loranthus *radicans*, Cham. et Schlecht. in Linneä. 3. p. 207. Leaves 5 inches long and 1¼ broad; petiolo hardly 5 lines long. Corolla 3 lines long. Flowers disposed in something like whorls of fives.

*Rooting* Notanthera. Shrub par.

12 N. *buxifolius*; branches rather angular, and rather hispid from stiff short hairs; branches terete, and are as well as the petiolo and leaves glabrous; leaves oval, coriaceous; racemes terminal and axillary, erect; pedicels bearing each 3 flowers and 3 bracteas; corolla tubular, 4–5–6-parted; having the lobes dilated and concave at the apex; anthers versatile. P. G. Native of Chili, near Talcahuano: parasitical on various trees. Loranthus *buxifolius*, Cham. et Schlecht. in Linneä. 3. p. 207. Loranthus Eschscholziánus, Mart. in Schultes, syst. 7. p. 117. Leaves 9 inches long in the young state. Bracteas fringed at the apex. The root, according to Chamisso, creeps under the bark of the trees on which the plant grows. Style acutus at the apex. Corolla 3–4 lines long. This comes very near to N. *heterophyllus*; and appears only to differ in the branches being covered with short rigid hairs.

**Box-leaved** Notanthera. Shrub par.

13 N. *heterophyllus*; branches terete, slender, scabrous, rusty; leaves scattered, on short petiolo, cordate or oval, mucronate, coriaceous, glabrous; racemes terminal and axillary, angular; pedicels short, bearing each 3 bracteas and 3 flowers; the 2 lateral flowers stalked: and the middle one sessile; bracteas small; petals 6, linear-spatulate; anthers incumbent. P. G. Native of Chili: parasitical upon trees, especially myracaceous trees. Loranthus *heterophyllus*, Ruiz et Pav. fl. per. 3. p. 48. t. 273. f. b. Schultes, syst. 7. p. 153. The old branches are smooth; the younger ones are angled, glabrous, or sometimes roughish from minute rust-coloured tubercules. Pedals 4–5, concave, and dilated at the apex. Leaves 6–12 lines long, and 4–9 lines broad; petiolo 2 lines long. Corolla purplish white, 4–5 lines long.

*Variable-leaved* Notanthera. Shrub par.

14 N. *elipticus*; glabrous; branches terete, slender, angular; leaves petioloate, elliptic, somewhat acuminate, thick-coriaceous, veinless, shining above; peduncules axillary and terminal, racemose; pedicels short, bearing each 3 bracteas and 3 sessile flowers at the apex; petals 6, linear, somewhat dilated and concave at the apex; anthers ovate, versatile. P. S. Native of Peru, in groves, in high frigid places on the Andes near Pozuzo. Loranthus *elipticus*, Ruiz et Pav. fl. per. 3. p. 47. t. 276. f. a. Schultes, syst. 7. p. 159. Leaves an inch long, and half an inch broad; petiolo 2 lines long. Corolla yellow, 4 lines long. Perhaps a species of Giaidendron.

*Elliptic-leaved* Notanthera. Shrub par.

15 N. *ligustrióideus*; glabrous; branches terete; leaves oblong-lanceolate, acuminate, coriaceous; corollas axillary and terminal, one half shorter than the leaves, solitary; pedicels crowded, bracteas, bearing 2–3 flowers; petals 6, linear, somewhat dilated and concave at the apex; anthers ovate, versatile. P. G. Native of Peru, or Chili, where it was collected by Henke. Loranthus *ligustrióideus*, Schultes, fil. in herb. Henke, and in syst. 7. p. 155. Loranthus *ligustrius*, Willd. herb. ex Schultes, but not of Wall. Leaves 2 inches long, and 9–10 lines broad; petiolo 2 lines long. Corolla 4–5 lines long, black in the dried state.

*Privet-leaved* Notanthera. Shrub par.

16 N. *vexetus*; glabrous; branches scendent, terete; leaves elliptic-oblong, ovate, rounded at the apex, thick-coriaceous, glaucoscent, on short petiolo, racemes axillary, solitary; pedicels short, bracteate, bearing each 3 sessile flowers at the apex, drooping in the fructiferous state. P. G. Native of Mexico, near Cuernavaca. Loranthus *véxetus*, D. C. prod. 4. p. 313. H. B. et Kunth, nov. gen. amer. 3. p. 434. Leaves 2 inches long, and 10–12 lines broad. Flowers unknown. Berries ovate-oblong.

*Lilly-leaved* Notanthera. Shrub par.

17 N. *orbicularius*; glabrous; branches tetragonal; leaves petioloate, orbicular, acutish, thick-coriaceous, obsolescent veined; racemes axillary, solitary; pedicels short, bearing each 3 sessile flowers at the apex; petals 6, glabrous, anthers ovate. P. S. Native of Quito, near Guayaquil, on trees. Loranthus *orbicularius*, H. B. et Kunth, nov. gen. amer. 3. p. 434. Schultes, syst. 7. p. 149. Leaves 18 inches long and 16–17 broad; petiolo 4–5 lines long. Flowers 4 lines long, green on the outside, and white on the inside.

*Oribacular-leaved* Notanthera. Shrub par.

18 N. *salicícola*; plant glabrous, pruinose? branches terete, compressed at the nod; leaves oblong-lanceolate, acuminate, margined petiolo; racemes axillary, solitary or twin, erect, sessile; pedicels very short, bearing each 3 flowers and 3 bracteas; corolla 4-parted, with linear lobes, which are shell-formed at the apex; anthers versatile; stigma capitate. P. S.
Native of Brazil. Loranthus salicifolius, Cham. et Schlecht. in Linnaea. 3. p. 216. Leaves 4½ inches long and ½ inch broad; petioles 6 lines long. Flowers a line long.

Willow-leaved Notanthera. Shrub par.

19. N. lanceolatus; glabrous; branches terete, slender, rather angular; leaves on short petioles, lanceolate-oblong; peduncles racemose, axillary, and terminal; pedicels short, bearing each 3 bracteas and 3 sessile flowers at the apex; petals 7-9, linear, spathulate, joined at the base; anthers incumbent. ½. P. S. Native of Peru, on the Andes at Pillao. Loranthus lanceolatus, Ruiz et Pav. fl. per. 3. p. 47. t. 278. f. b. but not of Beauv. Loranthus lanceolatus, Poir. ex Schultes, syst. 7. p. 142. Leaves 2 inches long and an inch broad; petioles 2-3 lines long. Corolla yellow, half an inch long. Berries oblong.

Lanceolate-leaved Notanthera. Shrub par.

20. N. oxyphyllus; glabrous; branches terete, but somewhat compressed at the apex; leaves lanceolate-oblong, tapering into the petioles at the base, and much acuminated at the apex, feather-nerved; having the middle nerve rather prominent; racemes axillary or solitary, shorter than the leaves; pedicels opposite, bearing each 3 bracteas and 3 sessile flowers at the apex; petals 6, linear, acute, hardly joined together at the base, longer than the filaments; anthers ovate, erect, incumbent. ½. P. S. Native of Brazil, where it was collected by Pohl. Loranthus oxyphyllus, Pohl. ex D. C. prod. 4. p. 514. Loranthus acuminatus, Pohl. in litt. Leaves 2 inches long. Flower-bud sub-clavate. Style thickish; stigma truncate.

Sharp-leaved Notanthera. Shrub par.

21. N. suaveolens; glabrous; branches terete; leaves petiolate, ovate-oblong, acuminated, rounded at the base, coriaceous; racemes 2-4 together; pedicels short, approximate, bracteas bearing 3 stalked flowers at the apex; petals 6, linear, spreading; anthers incumbent. ½. P. S. Native of Peru, in groves near Gonzanama. Loranthus suaveolens, H. B. et Kunth, nov. gener. 3. p. 435. Schultes, syst. 7. p. 145. Leaves 26-27 lines long and an inch broad; petioles 2-3 lines long. Flowers 3 lines long, white, glabrous.

Sweet-scented Notanthera. Shrub par.

22. N. conduplicatus; glabrous; branches tetragonal; leaves petiolate, ovate, acuminated, acute at the base, rather coriaceous, conduplicate recurved; panicle terminal, much branched, leafy; having the branches twin, and as are as thick as the rachis of the racem; pedicels very short, bearing 3 flowers and 3 bracteas at the apex; petals 6, linear. ½. P. S. Native of Cuman and Cumanoca, on trees. Loranthus conduplicatus, H. B. et Kunth, nov. gener. 3. p. 441. Loranthus anceps, Will. vel. in Schultes, syst. 7. p. 131. Leaves 24-27 lines long, and 14-17 lines broad; petioles 4-5 lines long. Flowers hardly 2 lines long.

Conduplicate-leaved Notanthera. Shrub par.

23. N. attenuatus; plant glabrous, twining; branches terete; leaves rather alternate, obturate-oblong, cuneated at the base, and tapering into the petioles, and mucronate at the apex; mucron deciduous; racemes axillary, twin or tern, shorter than the leaves; pedicels short, bearing each 2-3 bracteas and 2-3 sessile flowers at the apex; petals 6, linear, hardly connected at the base, longer than the filaments; anthers ovate-ellipsoid, fixed by the base. ½. P. S. Native of Brazil. Loranthus attenuatus, Pohl. in litt. ex D. C. prod. 4. p. 515. Leaves 12-15 lines long and 6-7 broad. Corolla ½ line long. Stigma not capitae.

Attenuated-leaved Notanthera. Shrub par.

24. N. anceps; glabrous; branches terete; branchlets and peduncles compressed and 2-edged; leaves alternate or opposite, oblong-elliptic, petiolate, ending in very short mucrones, feather-nerved; racemes axillary, solitary, or twin, and terminal, subcorysbose, unequal; pedicels short, bearing each 3 bracteas and 3 sessile flowers at the apex; anthers ovate, erect. ½. P. S. Native of Brazil, where it was detected by Pohl. Loranthus anceps, D. C. prod. 4. p. 315. Loranthus oblongo-ellipticus, Pohl. in litt. Leaves an inch long and 5-6 lines broad; petioles 3 lines long. Corolla 2 lines long. Allied to Loranthus paucifolius.

Two-edged-branched Notanthera. Shrub par.

25. N. ovatus; glabrous; branches unknown; leaves ovate, acute, somewhat acuminated, petiolate, coriaceous: having the middle nerve rather prominent, and the lateral ones hardly conspicuous; racemes a little shorter than the leaves; pedicels short, bearing 3 bracteas and 3 sessile flowers at the apex; petals 6, linear, distinct, acutish, a little longer than the filaments; anthers erect, fixed by the base. ½. P. S. Native of Brazil. Loranthus ovatus, Pohl. ex D. C. prod. 4. p. 515. Leaves 2½ inches long and 1½ broad; petioles 2-3 lines long. Branchlets racemose, 2 lines long. Ovarium glaucous. Petals 2 lines long. Style thickish, equal at the apex. Perhaps this and the preceding belong to Struthanthus.

Ovate-leaved Notanthera. Shrub par.

Cult. The species are not cultivable, and have the habit of those of the other parasitical genera of the order.

XIII. LOXANTHE'RA (from loxos, loxos, oblique, and anthera, an anther; in reference to the filaments being curved at the apex). Blum. in litt. Loranthus, sect. ii. Loxanthera, D. C. prod. 4. p. 316. Linn. syst. Hexandra, Monogynia. Flowers hermaphrodite. Tube of corolla geniculated at the base, but clavate, and rather oblique at the apex, with a 6-lobed limb; lobes oblong, attenuated at the base, and somewhat spirally twisted. Filaments stiffly curved at the apex, not attenuated, but somewhat dilated; anthers inserted by the back. Style longer than the stamens. Stigma clavate.—Parasitical shrubs.

1. L. speciosa (Blum. in litt. 1829.) glabrous; leaves oblong, obtuse or bluntly acuminated, coriaceous, 1-nerved, veinless; peduncles axillary, few-flowered; tube of corolla elongated. ½. P. S. Native of Java, in woods. Loranthus loxanthérea, D. C. prod. 4. p. 316. Bud of corolla 4 inches long, scarlet, but yellowish inside. Stigma blood-coloured.

Shorey Loxanthera. Shrub par.

2. L. spirostylis; glabrous; branches terete, tetragonally compressed at the apex; leaves somewhat alternate, petiolate, oblong-lanceolate, coriaceous, having the middle nerve rather prominent, the rest veinless; racemes solitary or twin, axillary, shorter than the leaves; rachis angular; petals 6, linear; anthers fixed by the back to the filaments; style spirally twisted. ½. P. S. Native of Mexico, at Acapulco. Loranthus spirostylis, D. C. prod. 4. p. 315. Spirostylis Hæneæana, Presl, ex Schultes, syst. 7. p. 164. Flowers 2 lines long. This is perhaps a distinct genus, as it differs from all the others in the twisted style; and from the present in the filaments not being curved at the apex, and in the petals not being spirally twisted.

Scren-styled Loxanthera. Shrub par.

Cult. The species of this genus have the habit of the other parasitical genera of the order, and are not cultivable like them.

† Plants referred to the old genus Loranthus by authors, but the number of the parts of the flowers and their structure being unknown, it is impossible to refer them to any of the genera broken off from that genus; therefore they must stand under the names originally given.

1. L. florul'entus (Rich. act. soc. hist. nat. par. p. 107.) branches opposite, spreading, quadrangular; leaves oblong-ovate, very blunt; peduncles solitary and sessile in all the axils.
Native petals corolla anthers P. P. 

Spotted-leaved Lauranthus. Shrub par. 16 L. eucalyptoides (D. C. prod. 4, p. 318.) glabrous; branches terete, dichotomous; leaves opposite, petiolate, lanceolate-linear, acutish, thick-coriaceous, almost veinless. P. G. Native of New Holland. L. eucalyptoides, Sieb. fl. nov. holl. no. 242, but not of Kunth. Leaves 3-4 inches long, and 6-7 lines broad. Petiolo 6 lines long. Flowers and fruit unknown. Schultes, syst. 7, p. 163.

Eucalyptus-like Lauranthus. Shrub par. 17 L. Hoffmannseggii (Wildl, in Schultes, syst. 7, p. 113.) leaves ovate-oblong, acute; racemes axillary, usually twin; flowers verticillate. P. S. Native of Brazil, at Para. Lor. verticillatus, Hoffmansegg in herb. Wildl. Flowers pentandrous.

Hoffmannsegg's Lauranthus. Shrub par. 

† † Species only known by name.

1 L. accice-Nilolice, Oudh. in Brown, append. 2. 2 L. calycinus, R. Brown, in Salt, abyss. 3 L. congestus, R. Br. l. c. 4 L. leucus, R. Br. l. c. 5 L. serrulatus, Roxb. ex Steud.

N. B. Asclepias lactifera, Burm. fl. ind. p. 61. is a species of Loranthus not known.

Tribe II.—Terrestrial shrubs.

XIII. a GAIADE'NDRON (from γαα, gaia, the earth, and ἔδον, deodon, a tree; these trees grow in earth and not parasitical, like other genera broken off from Loranthus). Loranthus species of authors.

Lin. syst. Hexa-Octandria, Monogynia. Calyx 6-8-toothed. Petals 6-8, narrow, sometimes free and sometimes joined at the base. Stamens 6-8, inserted in the petals. Style filiform; stigma simple. Ovarium oblong-cylindric. — Terrestrial trees, with obovate leaves and racemes of yellow flowers. 1 G. eugenioides; arboreous; branches terete; leaves ovate-oblong, acuminate, running down the petioles at the base, rather coriaceous; racemes axillary and terminal, solitary or racemes short, approximate, 3-flowered, bracteose; flowers pedicellate; corolla 5-6-parted; lobes linear-acute; anthers incumbent. P. G. Native of Peru, and in the Andes, near Guanacabamba, and of Brazil. Loranthus eugenioides, H. B. e. Kunth, nov. gen. amer. 3, p. 435. Schultes, syst. 7, p. 135. Cham. et Schlecht. in Linnaea, 3, p. 214. Loranthus attenuatus, Wildl. herb. but not of Pohl. Flowers about half an inch long, white, sweet-scented. Racemes 1½ to 3 inches long.

Eugenia-like Gaiadendron. Tree 15 to 20 feet. 2 G. Ta'aua; arboreous; branches terete; leaves oblong, acute, running down the petioles at the base, coriaceous, shining above and dotted beneath; racemes axillary, solitary; pedicels short, usually 3 together, approximate, bearing each 3 bracteas and 3 flowers; flowers on short pedicels; petals 7, spreading, linear, acute. P. G. Native about Santa Fe de Bogota. Loranthus Tagua, H. B. et Kunth, nov. gen. amer. 3, p. 436. Schultes, syst. 7, p. 159. Loranthus arboreus, Mutis mss. Leaves 3½ inches long, and 14-18 lines broad; petiolo 6 lines long. Flowers 9 lines long. Berry ovate-oblong. Very like N. punctatus.

Tagua Gaiadendron. Tree 15 to 20 feet. 3 G. Laurifolium; arboreous; glabrous; branchlets angular; leaves elliptic-oblong, bluntish, running into the petioles at the base, coriaceous, shining above; racemes axillary and solitary, terminal, and panicled; pedicels short, usually by threes, approximate, bearing each 3 bracteas and 3 sessile flowers;
petals 7-8, linear, rather dilated at the apex; anthers incumbent.


**Laurel-leaved Gaiadendron.** Tree 15 to 20 feet.

4. G. nitidum; arboreous, glabrous; branches terete; leaves petiolar, oblong, obtuse at both ends, coriaceous, shining above, veinless, having the middle nerve obsolete; corymbs terminal; peduncles bearing each 2-3 flowers and 3 bracteas; flowers sessile; petals 8, linear; anthers incumbent. G. Native of the Andes of Quito, in Paramo de Saraguri, in temperate parts. Loranthus nitidus, H. B. et Kunth, nov. gen. amer. 3. p. 437. Schultes, syst. 7. p. 160. Leaves 2 inches long, and 10 lines broad; petals 4 lines long. Flowers sweet-scented, about an inch long, yellow, glabrous. Berries ovate.

**Shining-leaved Gaiadendron.** Tree 15 to 20 feet.

5. G. Peracense; arboreous, glabrous; branches terete; leaves lanceolate-oblong, acutish, running into the petioles at the base, coriaceous, shining above, and beset with black spots beneath; racemes terminal; peduncles short, 3-5-together, approximately, each bearing 3 bracteas; from 1-3 flowers; petals 6-8, linear. G. Native on the Andes, about Popayan, in Paramo de Purace. Loranthus Puraceensis, H. B. et Kunth, nov. gen. amer. 3. p. 437. Schultes, syst. 7. p. 160. Leaves 22-27 lines long, and 9-10 lines broad; petals 4 lines long. Racemes 4-6 inches long. Corolla yellow. Perhaps sufficiently distinct from N. Tagua.

**Purace Gaiadendron.** Tree 10 to 15 feet.

6. G. Puccatius; arboreous, glabrous; branches terete; leaves obovate or oval, somewhat attenuated at the base into the short petiolar, coriaceous, beset with black dots beneath, having the middle nerve rather prominent; racemes long, terminal, and from the axils of the superior leaves; peduncles somewhat verticillate, bearing each 3 bracteas and 3 sessile flowers at the apex; petals 6, linear-spatulate; anthers incumbent, fixed by the back near the base to the filaments. G. Native of the Andes of Peru, in cold places in groves. Loranthus punctatus, Ruiz et Pav. fl. par. 3. p. 47. t. 177. f. a. Presl, in herb. Huenke, Schultes, syst. 7. p. 194. Leaves 2 inches long, and 1 broad; petals 2-5 lines long. Corolla yellow, almost an inch long before expansion. Berry ovo-ovate, crowded, crowned by the limb of the calyx, which is truncate.

**Dotted-leaved Notanthera.** Tree par.

**Cult.** For culture and propagation see **Nytsia**.

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**Bundles-flowered Nytsia.** Cult. 1831. Tree 15 to 25 feet. Cult. A mixture of sand, loam, and peat will be a good soil for this singular tree. Cuttings will probably root if planted in sand under a hand-glass.

**XIV. SCHEEPFFIA.**

**Bundles-flowered Nytsia.** Cult. 1831. Tree 15 to 25 feet. Cult. A mixture of sand, loam, and peat will be a good soil for this singular tree. Cuttings will probably root if planted in sand under a hand-glass.

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**LIN. SYST. Pentandria, Monogynia.** Flowers hermaphrodite. Margin of calyx entire; tube adnate to the ovarium, very narrow, calculeate at the base. Corolla gamopetalous, tubular, with a 5-cleft limb, rarely with a 4-6 cleft limb; lobes valvate in aestivation. Stamens equal in number to the lobes of the corolla, and situated in front of them, and having the filaments adnate to the tube; anthers ovate or roundish, dehiscing laterally by a double chink. Style erect, truncate; stigma capitate or 5-lobed. Ovarium 3-celled, with a solitary ovulum in each cell. Drupes containing a 3-celled-seeded nucleus, or only 1-seeded from abortion. Embryo minute, placed in the vertex of the albumen, which is amygdaline: with a turbinate radicle. Small smooth terrestrial trees. Leaves alternate, petiolar, entire, feather-nerved. Peduncles axillary, usually many flowered.

—This genus comes near to *Caprifoliaceae* from the gamopetalous corolla and 3-celled fruit; but differs from it, and agrees with Loranthaceae, in the stamens being in front of the lobes of the corolla, and in the flowers being calculeate. It also agrees with the order *Symphoricarpos* in the 3-celled fruit.

*Tube of corolla ovate, with a naked throat.—American species.*

1. S. Arbore'scens (Roxb. et Schultes, syst. 5. p. 160.) leaves ovate; peduncles axillary, usually twin, 1-3-flowered. G. Native of the islands of Santa Cruz, Montserrat, ex Rohr; and of Guadaloupe, ex Bertero; but in Rohr's specimen the leaves are obtuse, while in that of Vahl's they are acuminate; they are therefore probably distinct species. Codonium arbore'scens, Vahl. act. soc. hist. hafn. 2. pt. 1. p. 206. t. 6. symb. bot. 3. p. 36. Schreb. Lam. ill. 2. p. 51. S. Americana, Willd. spec. 1. p. 996. Flowers yellow. Arborescent Scheepffia. Tree 8 to 10 feet.

2. S. Flexuosa (Roxb. et Schultes, syst. 5. p. 160.) leaves ovo-lanceolate, acute; racemes axillary, solitary, 4-5-flowered; tube of corolla ovate; lobes acute; throat naked. G. Native of Peru, on the Andes, on the mountains at Pillao and St. Antonio de Playa Grande. Huenkea flexuosa, Ruiz et Pav. fl. per. 3. p. 8. t. 251. Leaves 3-4 inches long. Branches flexuous, diffuse, Corolla yellow.

Flexuous-branched Scheepffia. Tree 10 to 12 feet.

* * * Tube of corolla terete, having the throat furnished with fascicles of hairs at the origin of the stamens.—Species natives of Asia.*

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**XIII. b NYTSIA.** (named after Peter Nytsia, a celebrated Dutch navigator, and discoverer of that part of New Holland called Nytsland). R. Br. in geogr. soc. trans. vol. 1.

**LIN. SYST. Hexandria, Monogynia.** Teeth of calyx 3-5, unequal. Petals 6-7, linear, distinct. Stamens 6-7, inserted towards the middle of the petals; anthers versatile, sub-hastate, 2-celled. Ovarium turbinate, rather trigonal. Style subulate; stigma acute. Fruit 1-seeded, covered by pulp or glutin, and of a different texture from the rest of the Loranthaceae genera.

—A terrestrial tree, native of New Holland.

1. N. floribunda; arboreous, glabrous; branches terete; leaves alternate, linear, obtuse, thick; racemes elongated, simple; peduncles longer than the flowers, bearing each 3 bracteas and 3 flowers at the apex. G. Native of New Holland, in Van Lewin's Land. Loranthus floribundus, Labill. nov. holl. 1. p. 87. t. 113. Schultes, syst. 7. p. 193. Loranthus celastrodes, Sieb. fl. nov. holl. essic. no. 244. Leaves 2-3 inches long, and 4-5 lines broad. Racemes 6-8 inches long, crowded at the tops of the branches. Corolla 9-10 lines long, sulphur-coloured.
exquisitely fragrant, even after being dried, disposed in racemes, which are about half the length of the leaves. Ovarium supported by a calyciform bractea like the rest of the species, which is divided into 2 or 3 unequal acute segments. Corolla rather flabby; tube nearly an inch long. Drupe pale yellow, almost white, about the size of an olive, 1-seeded from abortion. The perfume of the flowers is of a most delightful kind, and may be perceived on steeping them in warm water even long after they have been dried.

_Fragrant Schöepfia._ Tree 10 to 15 feet.

4. _S. Acuminata_ (Wall. cat. no. 486.) leaves ovate, acuminate, obtuse at the base; racemes axillary, many flowered; tube of corolla terete: lobes bluish. η: G. Native of Nippon, on the Pundua mountains. Flowers yellow.

_Acuminate-leaved Schöepfia._ Tree 10 to 12 feet.

_Cult._ A mixture of loam, peat, and sand will suit these trees; and young cuttings of them will be easily rooted if planted in sand, and placed under a hand-glass.

**XV. AU'CUBA (the Japanese name of the shrub).** Thunb. fl. jap. p. 4. Lam. ill. t. 759. D. C. prod. p. 274.—Aūkuba, Koempf. amen. 5. p. 775.—Eubáasis, Salisbury. prod. p. 68.

_LIN. SYST. DIOTÉCIA, TETRÁDRIA._ Flowers dioecious. Calyx closely adhering, with the margin a little elevated and 4-toothed: teeth obtuse, very short. Petals 4, deciduous, alternating with the calycine teeth, inserted in the margin of the elevated fleshy, 4-angled disk ovate, acuminate, fleshy, with the margin truncate on one side, and minutely papillose on both surfaces, valvate in comparison, induplicate at the apex. Stamens 4, opposite the petals? Ovarium cylinhrical, adhering closely to the tube of the calyx, 1-celled, containing one ovulum. Style very short, thick, terete: stigma capitata, thick, fleshy, viscid, oblong 2-lobed. Berry fleshy, 1-seeded, crowned by the permanent style. The rest unknown.—A small evergreen tree, native of Japan; branches dichotomous or verticillate in the manner of _Loranthus_ and _Viscum_. Leaves opposite, petiolate, broad, ovate-lanceolate, acuminate, toothed, coriaceous, glabrous, shining, pale green, beautifully spotted with yellow, having the midrib rather prominent, the rest of the leaf reticulately veined. Petioles cylindrical. Flowers small, panicled. Panicles many, spike-formed, pedunculate; peduncles rather villous. Bracteas lanceolate, membranous, pale, caducous. Calyx beset with adpressed villi. Petals dark blood-coloured. The buds are large, angular, imbricated from conduplicate stipules; the leaves are large, toothed, and veiny, and the petioles are articulated with the branches and dilated at the base; hence there is some analogy in the genus to _Fráxinus_. This genus was included by Jussieu in the order _Rhâmi_; but from its having no affinity whatever to either of the families into which that order has been since divided, its place in the natural system has remained undetermined; and perhaps also from its want of novelty, the plant has been despised by botanists, and its characters and affinities consequently overlooked. Like the _Sâlicia Babylónica_, or weeping-willow, too, we possess only one sex of the tree in Europe, and that the female, which circumstance has likewise prevented its being accurately examined. The structure of the female flower agrees so exactly with that of _Viscum_, that, notwithstanding the different mode of growth of the two genera, and the absence of more accurate details respecting the male blossoms, and the ripe fruit, its arrangement among the _Loranthaceae_ appears fully justified. It will ultimately be found the connecting link between the _Araliaceae_ and the present family.

1 _A. Japónica_ (Thunb. fl. jap. p. 64.) η: H. Native of Japan. Banks, Icon. Koempf. t. 6. Thunb. icon. fl. jap. t. 12 and 13. Sims, bot. mag. 1197. Eubáasis dichótomus, Salisbury. prod. p. 68. The _Auceba_ is a well-known laurel-like evergreen shrub, having the leaves mottled with yellow; but in Japan the leaves are said to be sometimes green by Thunberg. According to Koempfer, the fruit is a red oblong drupe, like a laurel-berry, with a white sweetish pulp, and a kernel with a bitter taste. The shrub is called in the gardens _aucuba_ or spotted-leaved laurel.

**Japan Aucuba.** Fl. May, July. Cit. 1783. Shrub 6 to 10 feet.

_Cult._ This is a showy evergreen shrub, well adapted for shrubberies and small gardens. It is easily increased by cuttings from the young wood planted in autumn under a hand-glass or by layers. The shrub will grow in any soil.

**ORDER CXXVIII. CHLORANTHEÆ (plants agreeing with _Chloranthus_ in particular characters)._ R. Br. in bot. mag. 2190. (1821) and in Parry, vol. 1824. Lindl. coll. bot. 17. (1821). Blum. fl. jav. (1829) vol. 1.

Flowers disposed in spikes, hermaphrodite or unisexual; with a supporting tridentate calyx. Stamens lateral; if more than one connate definite; anthers 2-4-celled, bursting lengthwise, each adnate to a fleshy connective, which coheres laterally in various degrees; filaments slightly adhering to the ovary, which is 1-celled; stigma simple, sessile; ovulum pendulous. Fruit drupeaceous, indehiscent. Seed pendulous. Embryo minute, placed at the apex of a fleshy albumen; having the radicle inferior, and consequently remote from the hilum; cotyledons divaricate.—Herbaceous plants or under shrubs, with an aromatic taste. Stems jointed, tumid under the articulations. Leaves opposite, simple, with sheathing petioles, and minute interstipulating stipules. Flowers disposed in terminal loose slender spikes.

This order is nearly allied to _Loranthaceae_, from which it differs in the tridentate calyx, in the want of petals, in the fewer stamens, in the structure of the anthers, and in the inferior radicle, &c. It is said to be nearly allied to _Sarúcea_ and _Piperácea_, from both of which it differs in the want of a sack to the embryo, and in the pendulous ovulum, and opposite leaves with intermediate stipules. The anthers consist of a fleshy mass, upon the face of which the cell lies that bears the pollen; whether their anthers are 1 or 2-celled is a matter of doubt, one botanist considering those that have 2 cells to be double anthers, another understanding those with 1 cell to be half anthers. This order comes nearest in affinity to _Rubíaceae_, tribe _Opércularíceae_.

The whole plant of _Chloranthus officinális_ has an aromatic fragrant smell, which is gradually dissipated in drying; but its roots retain a fragrant camphorated smell, and an aromatic somewhat bitter flavour. They are found to possess very nearly the properties of _Aristolóchia serpentina_, and in a high degree. There seems to be no doubt that it is a stimulant of the highest order.

**Synopsis of the genera.**

1 _Chlo'a'ntus_. Flowers hermaphrodite. Anther seated on the side of the ovary, undivided and 2-celled, or trilobed and 4-celled. Ovarium 1-ovulate. Drupe 1-seeded.

2 _Ascarína_. Spikes dioecious. Filament short; anther oblong, 4-furrowed, and probably 4-celled. Stigma 3-lobed. Drupe 1-seeded.

3 _K_
3 Hedysourum. Flowers monoecious. Male amenis oblong, naked; anthers numerous, closely imbricated. Female flowers in racemes, with a tridentate calyx. Drupe trigonal, 1-seeded, clothed by the baccate calyx.


Lyn. s. Monandria, Monogynia, R. Br. Gymnandria, Tridrindria, Spreng. Calyx tridentate or wanting. Corolla wanting. Anther seated on the side of the ovary, undivided, and 2-celled, or trilocular and 4-celled: in the latter case the middle lobe alone is perfect and 2-celled, while the 2 lateral lobes are imperfect and only 1-celled. Ovarium 1-seeded: ovulum pendulous; stigma capitate. Drupe 1-seeded. Small subhemiaceous shrubs: with opposite toothed leaves, and slender spikes of inconspicuous flowers.

1 C. Officinalis (Blum. enum. pl. jay. 1. p. 79. fl. jay. 1. p. 10. t. 1) stem suffruticosus; leaves oblong-lanceolate, acuminate at both ends, serrated; spikes branched, terminal; anther 3-celled; middle lobe perfect and 2-celled; lateral ones imperfect and 1-celled. G. Native of Java, in high mountain woodlands. Stratiophora Doronora, ined. Berries white. The plant has an aromatic and fragrant smell, and is a stimulant of the highest order. It is used in medicine by the Javanese.

Officinal Chloranthus or Chu-Lan. Shrub 3 to 4 feet.

2 C. Brachyspathys (Blum. fl. jay. 1. p. 13. t. 2) stem suffruticosus; leaves oblong-lanceolate, acuminate at both ends, serrated; spikes branched, terminal; anther undivided, 2-celled. G. Native of Java, in the provinces of Bantam and Java, in woods on the highest mountains. Ascarina serrata, Blum. enum. pl. jay. 1. p. 180.

Short-spired Chloranthus or Chu-Lan. Shrub 2 to 3 feet.

3 C. Monostachys (R. Br. in bot. mag. 2190. Lindl. coll. t. 171.) stem suffruticosus; leaves elliptic, serrated, acuminate; spikes solitary, simple; flowers alternate; anther incurved, 2-celled: the middle lobe 2-celled and perfect, and the lateral lobes 1-celled and imperfect. G. Native of China. Flowers yellowish.

One-spiked Chloranthus or Chu-Lan. Fl. Feb. May. Cilt. 1819. Shrub 1 to 2 feet. 4 C. Incognitus (Swartz, in phil. trans. vol. 77. p. 359. t. 15.) suffruticosus; leaves ovate-oblong, obtuse, serrated, pale beneath; spikes axillary, branched; branches alternate; flowers opposite; anther 3-celled; middle lobe perfect and 2-celled, the lateral ones imperfect and 1-celled. G. Native of China and Japan. Nigrina spicata, Thunb. fl. jap. p. 65.


5 C. Monander (R. Br. in bot. mag. under no. 2190.) spikes bracteate; flowers opposite? anther undivided, 2-celled, perfect. G. Native of China.


6 C. Elatiolar (R. Br. l. c.) shrubby; leaves oblong-lanceolate, serrated, petiolate: spikes slender, long, reflexed, crowded, nearly terminal; anther 3-celled, the middle lobe perfect, 2-celled, the lateral lobes imperfect and 1-celled. G. Native of China and Cochinchina. Credos odorifer, Lour. coh. p. 89. Flowers small, yellow, sweet-scented. Branches long, somewhat secedent. In Cochinchina this plant is grown in gardens for the sake of the scent of the flowers.

Taller Chloranthus or Chu-Lan. Shrub 6 feet. 7 C. Serratus (Ran. et Schultes, s. 3. p. 461.) leaves ovate-oblong, acute, doubly serrated; spikes bracteate, axillary. G. Native of Japan, in the interior of the islands. Nigrina serrata, Thunb. act. ups. t. 7. p. 142. t. 5. f. 1. Stem simple, about a foot high. Leaves a hand long, having the serratures acute.

Serrate-leaved Chloranthus or Chu-Lan. Pl. 1 foot. Cult. A mixture of loam, sand, and a little peat, is a good soil for the species Chloranthus; and they are easily increased by cuttings under a hand-glass, or by suckers.

II. ASCARINA (from ascaris, ascaris, ascarides, or small round worms; the name is applied to this genus because the anthers are formed like small worms). Forst. char. gen. t. 59.


1 H. Septanas (Swartz, fl. ind. occ. 2. p. 599. prod. p. 84.) frutescent; branches lax; leaves lanceolate, acuminated; petioles short, connate on both sides from stipulaceous membranous sheaths at the base, which are reflexed and culiata on the margins. G. Native of Jamaica, in woods, on the highest mountains. Shrub branched. Branchlets tetragonal, jointed, rising from the axils of the sheaths of the petioles. Leaves serrated, pale green. Male amenis pendunculate, oblong, obtuse, filiform, rising from the sheaths of the petioles. Female racemes terminal and axillary from the same axils as the male ones, usually tripartite. Calyx tetradenate. Drupe triquetrous, hard, shining, brown, clothed by the roundish, scarlet, fleshy calyx. The whole plant has a grateful smell, and an aromatic hot taste.

Nodding-spiked Hedysosnum. Shrub 1 to 4 feet.

2 H. Racemos a; leaves oblong, serrated, short-acuminated; female peduncles twin, racemose, flexuous. G. Native of Peru, at Cuchero and Pillao, where it is called Carval and Aquacapi. Tafallia racemosa, Ruiz et Pav. fl. per. s. 271. There is a white pellucid sweet-scented resin issues from this plant, which has the scent of gum-arabic.

Racemose-flowered Hedysosnum. Tree 15 feet.

3 H. Arborescens (Swartz. fl. ind. occ. 2. p. 961. prod. p. 84.) arboresecent; branches straight, erect; leaves ovate-lanceolate; sheaths of petioles eucallate, bidentate; male amenis oblong, usually twin; female racemes tripartite. G. Native
of Jamaica and Martinico, on the higher mountains. Branches angular near the sheaths of the petioles, knotty, rather fleshy. Leaves serrated, attenuated and oblong at the apex, brownish green, shining. Stipulaceous sheaths large, cucullate, bidentate at both sides. Female flowers crowded on the racemes by threes, sessile. Scales 3-4 under the flowers. Ovarium trigonal. Style triquetrous: stigma obtuse. Fruit white, rather diaphanous. Calyx baccate, like that of the first species.

**Arborescent Hedyosmum.** Shrub 12 to 16 feet.

4 H. HESI'TUM (H. B. et K. nov. gen. amer. 7. p. 164.) sheaths and leaves oblong, serrated, hairy beneath. S. Native of New Granada.

**Hair-leaved Hedyosmum.** Shrub.

5 H. GLabra'TUM (H. B. et K. nov. gen. amer. 7. p. 165. t. 685.) leaves oblong-lanceolate, serrated, rough; amens and strobiles term. S. Native of Peru, in Pati and Muna, where it is called Ayacupi; and New Granada. Tafalla scabra, Ruiz et Pav. fl. per. syst. p. 270.

**Smooth Hedyosmum.** Tree 20 feet.

6 H. BONPLANDIA'NUM (H. B. et K. nov. gen. 7. p. 164. t. 684-685.) leaves oblong, acuminate, glabrous, serrated; male peduncles tufted, 3-spired; those of the female branched. S. Native of Peru, in the mountains of Cuchero and Aco- mago, where it is called Ayacupi and Almacijas; and New Granada. Tafalla glabra, Ruiz et Pav. fl. per. syst. p. 271. Bonpland's Hedyosmum. Tree 25 feet.

**Cult.** For culture and propagation see Chloranthus, p. 454, with the exception that the species require more heat. They are shrubs of no beauty.


Cailey having the tube adhering to the ovary (f. 77. c.), and the limb free and 5-lobed (f. 77. d. f. 78. a.). Corolla gamopetalous (f. 77. b. f. 78. b. f. 79. b.), inserted in the calyx, with the tube short (f. 77. b.), or long (f. 78. b.), and the limb 5-lobed (f. 77. b.), and sometimes irregular (f. 78. b. f. 79. b.), not valvate in separation. Stamens inserted in the calyx, and adnate to the corolla at the base (f. 82. f. f. 79. c.), and alternating with its lobes, and equal in number to them (one of which is sometimes abortive), sometimes exserted (f. 79. c. f. 78. c.), sometimes inclosed (f. 82. f. f. 81. b.); filaments subulate; anthers ovate, 2-celled. Ovarium adnate to the calyx, while young 3-celled (f. 77. c.). Style exserted (f. 78. c.) or wanting; stigmas 3, sometimes distinct, sometimes combined into a head. Berry crowned by the limb of the calyx (f. 77. d. f. 81. g.), usually pulpy, rarely almost dry, many-celled in the adult state, but often 1-celled from the dissepiments, which are very thin, having vanished. Seeds inverted, solitary, twin, or numerous in the cells, but sometimes many of them are abortive; spermatangia crustaceous. Embryo in the centre of a fleshy albumen; with a superior radicle, and 2 ovate-oblong cotyledons.—Shrubs, rarely herbs or trees. Leaves opposite, extipulate (rarely furnished with 2 small stipules at the base of each petiole) simple, undivided, toothed, rarely pinnate, feather-nerved. Flowers terminal, corymbose, or axillary.

Taking *Lonicera* for the type of the order, there will be found a striking affinity with *Rubiaceae*, Tribe Cinchonaceae in the monopetalous tubular corolla, definite stamens, inferior ovary, and opposite leaves, an affinity which is confirmed by the corolla of the latter being occasionally regular or irregular. With *Apocynaceae* it has an intimate alliance for the same reasons, differing chiefly in their qualities, with the non-convivance of the anthers, the destivation of the corolla, and the structure of the fruit. To *Loranthaceae* they also approach, in the structure of the flowers and berries. Besides these points of affinity, *Caprifoliaceae* probably tends towards *Umbelliferae* through *Sambucus*, from the divided leaves and half herbaceous habit. The genus *Triosteum* appears to be a link between this order and *Rubiaceae*. The fragrance and beauty of the honeysuckle tribe have been the theme of many a poet's song. They consist either of twining or erect shrubs, with clusters of trumpet-shaped, fragrant, white, scarlet, or yellow flowers; or of fine bushes: having cymes of white blossoms. The honeysuckle is the representative of the former and the elder of the latter. Here too is found the modest and delicate *Linnæa boréalis*, which, however inferior its attractions for the vulgar eye may be to those of its more ostentatious neighbours, yields to none of them in elegance or interest for the botanist; but independently of such recommendations, they possess properties of considerable interest. Their bark is generally astringent; that of *Lonicera corymbosa* is used for dying black in Chili. The flowers of the elder are fragrant, soporific, and sudorific, its leaves and inner bark fettid, emetic, and a drastic purgative, qualities which are also possessed by the honeysuckle. The fruit of *Viburnum* is destitute of these properties, but has instead an austere, astringent pulp, which becomes eatable after fermentation, and is made into a sort of cake by the American Indians. *Triosteum perfoliatum* is a mild cathartic; in large doses it produces vomiting; and its dried or roasted berries have been used as coffee. All caprifoliaceous plants love shady and cool places in both hemispheres, but few have been found in such as endure a very severe climate.

**Synopsis of the genera.**

**Tribe I.**

**Sambucus.** Corolla gamopetalous, regular, rotate (f. 74. a. f. 75. a.); petals 5, only connected a little at the base, rarely tubular. Style wanting. Stigmas 5, sessile.

1 *Sambucus.* Limb of calyx 5-cleft. Corolla rotate (f. 74. a.), urceolate. Berry roundish, pulpy, 1-celled, 3-4-seeded (f. 74. b.), hardly crowned (f. 74. c.).

2 *Viburnum.* Limb of calyx 5-cleft (f. 76. a.), permanent. Corolla rotate (f. 75. a. f. 76. b.), sub-campanulate or tubular. Berry ovate or globose, 1-seeded from abortion, crowned by the calycine teeth.

**Tribe II.**

**Lonicera.** Corolla gamopetalous (f. 77. b. f. 78. b.) more (f. 78. b.); or less (f. 77. b.) tubular, usually irregular (f. 78. b. f. 79. b.). Style filiform (f. 78. c.), crowned by 3 distinct or concrete stigmas.
3 Triosteum. Calyx with an ovate tube and a 5-parted permanent limb (f. 77. a.). Corolla gibbous at the base, almost equally 5-lobed (f. 77. b.). Stamens inclosed. Stigmas oblong, thick. Berry coriaceous, ovobovate triquetrous (f. 77. c.), crowned by the calyx (f. 77. d.), 3-celled (f. 77. e.), 3-seeded.


5 LonicerA. Tube of calyx 5-toothed (f. 78. a.). Corolla tubular (f. 78. b. f. 79. b.), funnel-shaped (f. 79. b.), or campanulate (f. 80. a.), with a 5-parted, usually irregular limb (f. 78. b. f. 79. b.). Stigma capitulate (f. 78. c.). Berry 3-celled; cells few-seeded.

6 Leysteirea. Calyx with an ovate tube, and a 5-parted irregular limb, ciliated with glands. Corolla funnel-shaped, with the tube gibbous at the base, and the limb 5-parted and campanulate. Stigma capitulate. Berry roundish, 5-celled, crowned by the calyx; cells many-seeded.

7 Symphoricarpos. Calyx with a globose tube (f. 81. c.), and a small 4-5-toothed limb. Corolla funnel-shaped (f. 81. c.), with an almost regular 4-5-lobed limb. Stigma semi-globose. Berry crowned by the calyx (f. 81. g.), 4-celled, 2 of them empty, and the other 2 containing 1 seed each.


9 Linnea. Calyx with an ovate tube (f. 82. a.), and a 5-parted limb (f. 82. b.). Corolla turbinate (f. 82. d.), somewhat campanulate, 5-lobed (f. 82. d.). Stamens 4, 2 long and 2 short, inclosed. Stigma globose (f. 82. e.). Berry almost dry, small, ovate-globose, 3-celled.

† Genera allied to the present order, but not sufficiently known.


12 Karpathon. Limb of calyx 4-toothed. Corolla tubular, 4-cleft, bilabiate. Stamens 2; anthers 2-lobed. Style under the superior lip of the corolla; stigma simple. Capsule crowned by the calyx, 1-celled, 4-seeded.

 Tribe I.


I. SAMBU'CUS (from σαμβουκα, which the Latins have changed to sambuca, a musical instrument, which is believed to have been made of elder-wood; this wood has always been renowned for its hardness). Tourn. inst. 376. Lam. gen. no. 372. Gärtn. fruct. t. 27. Lam. ill. t. 211. Schlkr. handb. t. 83. D. C. prod. 4. p. 321.—Phytæm, Lour. coch. p. 158, but not of Lin.

Lin. syst. Pentándria, Trigynia. Calyx small, but divided into 5 deep segments, permanent. Corolla rotate (f. 74. a.), urceolar, 5-lobed; lobes obtuse. Stamens 5 (f. 74. b.), about the length of the corolla; filaments awl-shaped; anthers roundish, heart-shaped. Style none; stigmas 3, obtuse. Berry globose (f. 74. c.), pulpy, of 1 cell, containing 3-5 seeds (f. 74. b.), which are convex on the outside and angular inside. —Shrubs, rarely herbaceous; having a strong disagreeable scent; stems with a solid spongy pith. Leaves opposite, stalked, pinnate; leaflets toothed, pinnate, or jagged, bi-stipellate or bi-glandular at the base. Flowers white or purplish, disposed in terminal cymes, which are in some flat and in others thyrsoid. Berries purplish, cathartic. Those plants of the genus which have pinnate or jagged leaflets are not true species but only varieties, all the true species having only toothed leaflets.

* Leaves pinnate. Flowers cymose or corymbose.

1 S. E'bula (Lin. spec. p. 385.) root fleshy, creeping; stems herbaceous, simple, deeply and unequally furrowed; leaflets ovate-lanceolate, acute, sharply serrated, unequal at their base; stipules foliaceous, cut; cymes of 3 main branches; flowers all hermaphrodite. Υ. H. Native of Europe, even to Caucasus, in waste ground about hedges. In Britain, in like situations, but not common either in England or Scotland. Smith, engl. bot. t. 475. Curt. lond. 3. t. 15. Woody, med. bot. suppl. t. 260. Oed. fl. dan. t. 1156. — Mill. ill. t. 296. S. hūmilis, Lam. fl. fr. 3. p. 370.—E'bulus, Math. valgr. 2. p. 608. with a figure. Cam. epit. 979. with a figure. Leaflets 4-5 inches long, nearly smooth. Flowers all stalked, of a dull purplish hue, with thick white filaments, whose anthers are reddish. Berries globose, black, not always perfumed, 3-4-seeded.

Our ancestors evinced a just hatred of their brutal enemies the Danes, in supposing this nauseous, fetid, and noxious plant to have sprung from their blood; hence it was formerly called Dane-wort. Its qualities are violently purgative, sometimes emetic; yet a rob of the fruit is said to have been taken with safety, as far as an ounce. The foliage is not eaten by cattle, nor will moles come where these leaves, or those of any of the species are laid. They also drive away mice from granaries, and the Silesians strew them where their pigs lie, under the persuasion that they prevent some of the diseases to which swine are liable. The specific name is from εμβολη, ευβολη, an eruption.

Var. β, hūnilis (Mill. dict. no. 5.). Mr. Miller makes this a distinct species. He says that the roots do not creep so much; that the stems do not rise so high; that the leaves have seldom more than 7 leaflets, and towards the top only 5, longer and narrower than in the common dwarf elder, deeply cut on their edges, and ending with winged acute points. Υ. H. Savi collected this variety about Pisa.
Dwarf-elder or Dane-wort. Fl. July. Brit. Pl. 4 to 5 feet.

2 S. CHINE'NSIS (Lindl. hort. trans. 6. p. 297) root creeping; stems herbaceous, warted, with dark furrows; leaves pinnate; leaflets 7-9, oblong-lanceolate, crenately serrated, naked on both surfaces; flowers monoecious; female ones cup-shaped, apetalous and fleshy. H. Native of China. A strong, rough herbaceous plant, very like S. Ebulus.

The male flowers are white and numerous, with brownish-purple anthers.


3 S. PALME'NSIS (Link. in Buch. can. p. 151.) stems unknown; leaves pinnate; leaflets lanceolate, serrated; petals, nerves of leaves, and peduncles, densely hairy. H. Native of the island of Palma, one of the Canaries, near Sauces.

Palma Elder. Shrub?

4 S. ANNA'TA (Wall. cat. no. 482.) stems suffruticose; leaves pinnate; leaflets 5-7, oblong-lanceolate, sharply serrated, pubescent along the nerves, unequal at the base: the lower side decurrent; cymes trichotomous; berries ovate, striped, almost dry. H. Native of Nipaul, at Gassington. Flowers white?

Adnate-leatfletted Elder. Shrub.

5 S. JAV'A'NICA (Reinw. in Blum. bijdr. p. 637.) stem suffruticose; stipulas foliaceous; leaves pinnate; leaflets oblong-lanceolate, acuminate, equal at the base, sharply serrated; stipulas ovate, foliaceous, serrated; corystyl pedunculate, umbellate, of 5 main rays or branches. H. Native of Java, frequent on the mountains, where it is called Kitespon.

Java Elder. Shrub.

6 S. GAUDICHAUDI'NANA (D. C. prod. 4 p. 322.) stem suffruticose; leaves pinnate, glabrous; leaflets ovate-lanceolate, acuminate, equal, both at the base, sharply serrated; stipulas ovate, foliaceous, serrated; corystyl pedunculate, umbellate, of 5 main rays or branches. H. Native of New Holland, at Port Jackson, where it was collected by Gaudichaud. According to the description this appears to be nearly allied to S. Jaténica.

Berries ovate-globose, small.

Gaudichaud's Elder. Shrub 8 to 10 feet.

7 S. MEXIC'ANA (Prel. in herb. Henke, ex D. C. prod. 4 p. 322.) stem suffruticose; leaves pinnate; leaflets 7, ovate or oblong-lanceolate, acute, serrated, rather hairy beneath as well as on the petioles and branches; corystyl of 5 principal rays or branches. H. Native of Mexico. S. subalpinum, Cham. et Schlecht. in Linnana. 5. p. 171.

Mexican Elder. Shrub 5 to 8 feet.

8 S. CANADA'NIS (Lin. spec. 385.) frutescent, glabrous; leaves pinnate or sub-pinnate; leaflets about 4 pairs, oblong-oval, stiffish, acuminate, more or less pubescent beneath, sometimes appendiculated at the base; cymes of 5 main branches. H. Native of North America, from Carolina to Canada, in swamps and near heads, and throughout Canada, as far as the Saskatchewan. Schmidt, arb. 2. t. 142. Flowers said to be almost inodorous. Berries deep bluish-black.


9 S. NIPA'D (Lin. spec. 385.) arboreous; leaves pinnate; leaflets usually 5, smooth, deep green, ovate or oblong-oval, acuminate, the lower leaflets sometimes terebin, with cymes of 5 main branches. H. Native throughout the whole of Europe, Caucasus, Siberia, and probably of Japan, in hedges, coppices, and woods, common; plentiful in Britain, in like situations; the varieties rare, except in gardens. Dunal. arb. 2. t. 65. ed. nov. 1. t. 55. Hayn. term. bot. t. 92 f. 2. Smith, engl. bot. t. 479. Woody. med. bot. t. 78. Fl. dan. t. 645. Branches, after a year's growth, clothed with smooth grey bark, and filled with a light spongy pith. Flowers cream-coloured, with a sweet but faint smell. Berries globular, purplish black; their stalks reddish. It may be remarked that our uncertain summer is established by the time the elder is in full flower, and entirely gone when its berries are ripe. The tree is, as it were, a whole magazine of physic to rustic practitioners, nor is it quite neglected by more regular ones. The berries make a useful and agreeable rob, of a slightly purgative quality, and very good for catarrhs, sore throats, &c. The inner bark is more actively cathartic, and is thought beneficial in rustic ointments and cataplams for burns. The dried flowers serve for fomentations, and make a fragrant but debilitating tea, useful perhaps in acute inflammations, but not to be persisted in habitually. An infusion of the leaves proves fatal to the various insects which thrive on blighted or delicate plants; nor do many of this tribe, in the caterpillar state, feed upon them: cattle scarcely touch them, and the mole is driven away by their scent. A wine is made from the berries, to be taken warm, with spices and sugar; and they are said to frequently enter into the composition of a less innocent beverage—artificial or adulterated port. An infusion of the inner green bark of the trunk in wine, or the expressed juice of the berries, in the dose of half an ounce, is said to purge moderately, and in small doses to prove debilitating. The expressed juice of the berries, inopissipated to the Consistence of a rob, proves an useful aperient medicine, and if continued for a sufficient length of time, is of considerable service in various chronic disorders. The young leaf-buds are strongly purgative, and act with so much violence as to be accounted unsafe. The flowers have an agreeable aromatic flavour, like that of Frontignac wine, which they yield in distillation to water, and impart, by infusion, to vinous and spirituous liquors and oils. Sydenham recommends as an effectual hydragogue diuretic 3 handfuls boiled in a quart of milk and water till only a pint remains, of which one half is to be taken night and morning, and repeated several days. Boehrhaave gave its expressed juice in doses from a drachm to half an ounce. It is said also that if sheep who have the rot can get the bark they will soon cure themselves. An infusion of the leaves is useful for gardeners to sprinkle over the buds of such flowers as they wish to preserve from minute caterpillars, for few insects can bear the elder. In Scotland the tree is called Bountray.


Var. γ, levucocárpa; fruit white. H. H.

Var. δ, laci'niata; leaves cut into fine segments. H. S. laciniata, Mill. di. no. 2.—Lob. icon. 2. t. 164. f. 2. Called Parsley-leaved elder.

Var. ε, rotun'difólia; leaves ternate; leaflets petiolate, roundish, serrated; corystyls few-flowered. H. H. Cultivated in Chelsea garden.

Var. ζ, monstrósa; branches striped; flowers of from 5-15 parts, and with from 5-15 stamens; stigmas 5-12; berries irregular. H. S. monstrosa, Hort.

Var. τ, variegátta; leaves variegated with yellow or white. H. H.

Common or Black-berried Elder. Fl. June. Britain. Shrub 10 to 15 feet.

10 S. PEZUV'INNA (H. B. et Kunth, nov. gen. amer. 3. p. 429.) arboreous; leaves pinnate; leaflets 7, oblong, acuminate, obtuse at the base, nearly equal; petioles glabrous; corystyl somewhat trichotomous; berries usually 5-seeded. H. H. Native of Peru, on the Andes, in cultivated places, at the elevation of 4000 feet. S. suavóleons, Wild. in Schultz, syst. 6. p. 441. Flowers white. Berries black.

Peruvian Elder. Shrub 12 to 20 feet.

11 S. A'bustralis (Cham. et Schlecht. in Linnana. 3. p. 140.) shrubby; leaves pinnate; stipules glabrous; leaflets 11-13, ovate-lanceolate, usually unequal at the base; corystyls branched.
teate: stigmas 5, sessile; berries 5-celled.  ﬤ  H. Native of Brazil, and cultivated at Talcahuano in Chili. Flowers cream-coloured? There is a variety of this having 4 stigmas and a 4-celled berry.

**Southern Elder.** Shrub 5 to 10 feet.

* * * Leaves pinnate. Flowers panicked.

12 S. racemosa (Lin. spec. 386.) shrubby; leaves pinnate; leaflets 5, membranous, obl. acum., serrated, unequal at the base; petioles glabrous; panicle ovate.  ﬤ  H. Native of middle and south Europe, and Siberia on the mountains. Jacq. icon. rar. 1. p. 59. Duham. arb. t. 66. and ed. nov. 1. t. 56. S. montana, Cam. epit. 976. S. cervina, Tabern. t. 1029. —Lob. icon. t. 163. Leaves pale green, pretty smooth. Flowers of a whitish green colour. Fruit red or scarlet when ripe.


**Racemos-flowered Elder.** Fl. April, May. Clt. 1596. Shrub 10 to 15 feet.

13 S. pubens (Michx. fl. bor. amer. 1. p. 181.) shrubby; leaves pinnate; leaflets 5, membranous, ovate-lanceolate or oblong, acum., serrated, pubescent, but chiefly on the under side; panicle thyrsoid.  ﬤ  H. Native from Carolina to Canada, on the highest mountains, as far as the Sacramento. S. racemosa, Hook, fl. bor. amer. 1. p. 279. but not of Lin. Berries red. Flowers whitish. Resembles S. racemosa very much.

Var.  ﬤ, heptaphylla; leaves larger than those of the species; leaflets 7.  ﬤ  H. Native of North America, on the east side of the Rocky Mountains: and shores of the Columbia, near Fort Vancouver, and at its confluence with the sea. The Rocky Mountain specimens, and, more especially those from the Pacific, are remarkable for the great size and length of their leaflets, and there being almost constantly seven upon each brachis.

**Downy Elder.** Fl. May, June. Clt. 1812. Sh. 6 to 10 ft.

* * * Leaves bipinnate.

14 S. ebuloides (Desv. in herb. mus. par.) suffruticosum; leaves bipinnate; leaflets lanceolate, serrated; panicle composed of racemes.  ﬤ  H. Native of China, in the suburbs of Canton. Phyteuma bipinnata, Lour, coch. 158. Branches angular and furrowed. Flowers white. Fruit perforated, 5-celled, many-seeded.

**Danewort-like Elder.** Shrub 5 to 6 feet.

15 S. Phyteumoides (D. C. prod. 4. p. 328.) suffruticosum; leaves bipinnate; leaflets lanceolate, serrated, wrinkled; peduncles many-flowered, divaricata.  ﬤ  H. Native of Cochinchina, on the mountains. Phyteuma Cochinchinensis, Lour. coch. 139. Flowers white. Berry roundish, pustule, small, 1-celled, many-seeded. Very nearly allied to S. ebuloides.

**Phyteuma-like Elder.** Shrub 5 feet.

† Doubtful species, to be inquired into or excluded from the order.

16 S.? Loureiriana (D. C. prod. 4. p. 328.) arboreous; leaves pinnate; leaflets 5, broad-lanceolate, quite entire, glabrous.  ﬤ  H. Native of China, on the mountains. S. nigra, Lour. coch. p. 181. but not of Lin. Cymes 5-parted and 3-parted; peduncles long, nearly equal. Fruit a round, small, reddish-brown, 3-seeded inferior berry. The berries are used by the Chinese in coldness of the extremities, as they are of a heating nature, from which quality, and the quite entire leaflets, it is not likely to be a species of *Sambucus*, but probably a species of *Turpinia*.

Loureiro's Elder. Shrub 8 feet.

17 S.? Japonica (Thunb. fl. jap. p. 125.) shrubby; leaves impari-pinnate, with 3-7 pairs of leaflets and an odd one; leaflets ovate, acute, cartilaginosely serrated, glabrous; flowers disposed in panicked, trichotomous cymes.  ﬤ  H. Native of Japan. Ovarium superior and style filiform, for which reason it ought evidently to be excluded from the genus; it is probably also a species of *Turpinia*. Stigmas capitate, white.

**Japan Elder.** Shrub.

18 S.? Thunbech; shrubs 5-parted; leaves somewhat bipinnate.  ﬤ  H. Native of Japan, near Naga-saki and elsewhere, where it is called by the Japanese Sokuso and Saki-Teki. Shrub perishing just above the earth every year. S. Canadensis, Thunb. fl. jap. p. 126. This plant is hardly known as well as the S. nigra, Thunb. l. c.

**Thunberg's Elder.** Shrub.

Cult. All the species of elder are of the most easy culture, and will thrive in any soil or situation. The perennial herbaceous species creep much at the root, and are difficult to extirpate, having once got hold in the ground. The shrubby and arboreous kinds are easily increased by cuttings, stuck in the ground in autumn or spring. Those species, natives of warmer climates, will require a little protection in severe weather in winter.


**Lin. syst. Pentandria, Trigynia.** Limb of calyx small, 5-cleft (f. 76.a.), permanent. Corolla rotate (f. 75.a. f. 76.b.), somewhat campanulate, or tubular, with a 5-lobed limb (f. 76.b.). Stamens 5, equal (f. 75.b.). Stigmas 3, sessile. Berry ovate or globose, 1 seeded from abortion, crowned by the calycine teeth. Seeds compressed.—Shrubs. Leaves opposite, petiolate. Coryms of flowers terminal. Flowers usually white, but sometimes verging to a rose colour.


§ I. Leaves quite entire or toothed. Style almost wanting; stigmas 3, sessile.

1 V. Tixus (Lin. spec. 383.) leaves ovate-oblong, quite entire, permanent; having the ramifications of the veins beneath, as well as the branchlets, furnished with glandular hairs.  ﬤ  H. Native of the south of Europe, in the region of the olives, and of the north of Africa, as well as Portugal, Spain, Italy, the south of France, and Algiers. Duh. arb. ed. nov. 2. t. 37. Curt. bot. mag. t. 38. V. laurifolius, Lam. fl. fr. 3. p. 385. Tixus, Tourne. inst. p. 607. t. 377. Tinus laurifolius, Bornh.
in Rem. arch. 1. pt. 2. p. 20. Corymbs flat. Flowers white, but rose-coloured before expansion, and sometimes afterwards for a little time. Berries dark blue. The Laurotina or Laurestina is one of the most ornamental of evergreen shrubs, with shining leaves and showy white flowers, which appear during the winter months. The name of Laurestina was given to the shrub by old authors, they supposing it to be a kind of bay or laurel. The berries are very hot, and inflame the fauces violently, like those of Mizeron; and they are also violently purgative, according to Parkinson; but some kinds of birds are said to eat them greedily.

Var. a, hirtum (Ait. hort. kew. 2. p. 166.) leaves oval-oblong, hairy beneath and on the margins. G. Native of Portugal and Spain, and the country of Nice. V. Tinus, Mill. dict. no. 4.—Clus. hist. 1. p. 49. no. 1. The flowers of this variety appear in autumn and continue all the winter. It is the most hardy and most common sort, called Hairie Laurestine. V. lycidum, Mill. Pers. and Schultes.—Clus. hist. 1. p. 49. no. ii.

Var. b, lacedum (Ait. l. c.) leaves ovate-oblong, glabrous on both surfaces, shining. G. Native about Algiers and on Mount Atlas. The cymes as well as the flowers are larger than the common sort; these seldom appear till the spring, and when the winters are sharp the flowers are killed, and never open unless they are sheltered. Called Shining Laurestine.

Var. ε, virgatum (Ait. l. c.) leaves oblong-lanceolate, pilose on the margins as well as on the veins beneath. G. Native of Italy, about Rome and Tivoli, &c.—Clus. hist. no. iii. with a figure. Called Common Laurestine.


3 V. sinsoides (Lin. fil. suppl. p. 184.) leaves elliptic-glabrous, quite entire; branches terete, and are as well as the corymbs hairy. G. Native of South America, where it was collected by MUTIS.


4 V. glabratum (H. B. et Kuntch, nov. gen. amer. 3. p. 428.) leaves ovate-oblong, acuminate, rounded at the base, quite entire, and very glabrous; petioles naked; branches canescent and powdery; corymbs involucrated. G. Native of South America, in woods on the Andes, about Popayan, at the altitude of 5000 or 4000 feet. V. glabrum, Willd. in Schultes, syst. 6. p. 639. Calyx bluntly 5-toothed. Flowers white.

Smooth Laurestine. Tree 15 to 20 feet.

5 V. ayavacense (H. B. et Kuntch, nov. gen. amer. 3. p. 428.) leaves ovate, acute, cordate, quite entire, glabrous, shining above, but with the axis of the veins beneath furnished with stellate hairs, as well as the branchlets and corymbs; petioles naked. G. Native of Peru, near Ayavaca, in temperate places, at the elevation of 4000 or 5000 feet. Teeth of calyx roundish-ovate, acute, ciliated. Flowers white? Perhaps the same as V. sinsoides.

Ayavaca Laurestine. Shrub 4 to 6 feet.

6 V. integerrimum (Wall. cat. no. 457. D. C. prod. 4. p. 324.) leaves oval, acute at the base, acuminate, quite entire, glabrous, rather coriaceous, dotless; petioles, branchlets, and peduncles hairy; corymbs loose, terminal; fruit oval, compressed. G. Native of the island of Pulo-Penang. This species agrees with V. Tinus on the one hand and V. punctatum on the other. Calyces toothed, exceeding the berries.

Quite-entire-leaved Laurestine. Shrub 4 to 6 feet.

7 V. chineense (Hook. et Arn. in Beech. voy. pt. bot. p. 190.) leaves membranous, broad-elliptic, acute and unequally toothed, glabrous above while young, puberulous and dotless beneath; corymbs terminal, pubescent. G. Native of China.

China Laurestine. Shrub.

8 V. punctatum (Hamilt. in D. Don, prod. fl. nep. p. 142.) leaves oval-oblong, quite entire, mucronulate, glabrous on both surfaces, beset with dots beneath; corymbs terminal, smooth, spreading, sessile. G. Native of Napal, at Suemba, where it is called Hemu-say by the Nawar people. Teeth of calyx obtuse. Flowers white.

Dotted-leaved Laurestine. Shrub.

9 V. acuminatum (Wall. cat. no. 465. D. C. prod. 4. p. 325.) leaves elliptic, acuminate at both ends, glabrous, coriaceous, beset with curly dots; corymbs terminal, trichotomous, shorter than the leaves; berries oval-oblong. G. Native of the East Indies, on the Nelligherry Mountains, where it was collected by Notan. Very nearly allied to V. punctatum.

Acuminated-leaved Laurestine. Shrub.

10 V. prennaceum (Wall. cat. no. 461. D. C. prod. 4. p. 325.) leaves elliptic-oblong, acuminated, glabrous above and dotless beneath, and downy along the nerves, having 1 or 3 coarse serratures on each side; petioles short, and as well as the branchlets and peduncles clothed with villous tomentum; corymbs terminal, with 5 main branches, involucrated by 5 elliptic leaves. G. Native of the East Indies, on the Pandua mountains. Leaves 3½ inches long, and 1½ inch broad, feather-nerved; but the lower lateral nerves arise from the base and give the leaf the appearance of being 3-nerved.

Prenna-like Laurestine. Shrub 5 to 7 feet.

11 V. nervosum (Hook. et Arn. in Beech. voy. pt. bot. p. 190.) evergreen; leaves elliptic-lanceolate, glabrous, acute at the base and apex, dotless beneath, with a few serratures towards the apex on both sides; nerves impressed above, but prominent beneath, glabrous in the axils, and with numerous transverse conspicuous veins between them; peduncles and petioles short and glabrous; corymbs terminal. G. Native of China. This is closely allied to V. prennaceum, Wall. in which plant is observed, besides the character given by D. C. that the axis of the leaves are furnished with a tuft of short hairs, which is totally absent from the present species.

Nerved-leaved Viburnum. Shrub.

12 V. Colebrokeana (Wall. cat. no. 460. D. C. prod. 4. p. 325.) leaves elliptic, acuminated, hardy obtuse at the base. Regularly serrate-toothed, glabrous, dotless: petioles, branches, and peduncles scurfy from stellate down; corymbs axillary, pedunculate, without any involucre. G. Native of the East Indies, on the Pandaunas Mountains. The corymbs are not truly axillary, but are borne on short leafless, axillary branchlets or peduncles, which are furnished with 2 leaves at the base. Flowers white.

Colebrookea’s Laurestine. Shrub 4 to 6 feet.

13 V. vugidum (Wall. cat. no. 466. D. C. prod. 4. p. 325.) leaves elliptic-oblong, cuneated at the base, coarsely and minutely toothed, glabrous above, but villous along the nerves beneath; petioles, branchlets, and peduncles villous; corymbs terminal, pedunculate, of 6 main branches, without any involucre; fruit almost sessile, oval. G. Native of the Burman Empire, on Mount Taong-Dong, near Ava. Leaves 2
CAPRIFOLIACEÆ. II. VIBURNUM.

Petid Viburnum. Shrub 4 to 6 feet.

14 V. samu'cinum (Reinw. in Blum. bijdr. p. 656.) leaves elliptic-oblong, attenuated at both ends, almost quite entire, puberulous on the ribs beneath; corymb terminal, distichate, puberulous. % S. Native of Java, among bushes on the mountains. Flowers white. Var. β; leaves oval, acute at both ends, smoothish, serrated at the top. % S. Native of Java, at the foot of Mount Salak.

15 V. lute'sciens (Blum. bijdr. p. 655.) leaves oblong, bluntly acuminate, acutely and coarsely serrated at the base, coriaceous, shining, paler beneath; corymb terminal, distichate, puberulous. % S. Native of Java, in the provinces of Krawang and Tjanjak, among other bushes on the mountains.

Yellowish Viburnum. Shrub 4 to 6 feet.

16 V. punicifolium (Lin. spec. p. 383.) leaves roundish-obovate and oval, glabrous, rather membranous, crenately serrated, ending in a short cuneum; petioles margined, glabrous; cymes sessile; berries ovate or roundish. % H. Native of North America, from New England to Carolina, in hedges and fields; also of Canada about Lake Huron. Wats. indr. t. 23.—Pluck. aln. 46. f. 2.—Duham. 2. t. 38. Flowers white as the rest of the species. Berries dark blue. This species appears to be very nearly allied to V. nuditum, but the leaves are broader and more membranous.


17 V. pyrifolium (Poir. dict. 5. p. 658.) leaves ovate, acute, or ovate, glabrous, sub serrated; petioles smooth; corymb somewhat pedunculate; fruit ovate-oblong. % H. Native of Pennsylvania, New Jersey, &c. on the banks of rivers. Flowers white. Berries black. Resemblances the preceding species, but is not so strongly in its growth.

Pear-leaved Viburnum. Fl. May, June. Shrub 5 to 8 feet.

18 V. len'tago (Lin. spec. p. 384.) leaves broad-ovate, acuminate, sharply serrated, glabrous; petioles with narrow or serrulate margins; corymb terminal, sessile. % H. Native of North America, from New England to Carolina, among hedges, and on the borders of woods. Throughout Canada to the Saskatchewan. Wats. indr. t. 21. Schmidt, arb. 3. t. 176. ex Romet et Schultes, syst. 6. p. 637. Flowers white. Fruit black. Serratures of leaves hooked a little, and somewhat cartilaginous. This species is more inclined to grow to a tree than any of the rest. The specific name is from lento, to make pliant, on account of the pliable propendent branches.


19 V. nuditum (Lin. spec. p. 383.) leaves oval-oblong, angular at the base, bluntish, with revolute obsolete crenately serrate margin, quite glabrous; petioles beset with scale-like scurf or down; corymb pedunculate, infuscvolucrate. % H. Native from Canada to Georgia, in swamps, particularly on a sandy soil; about Quebec, and on the banks of the Saskatchewan; and of Newfoundland. Wats. indr. t. 20. Mill. fig. 274. V. squamatum, Willd. enum. 1. p. 337. ex Torrey, fl. un. st. p. 319. Wats. indr. t. 24. Flowers white. Berries globose, black, or dark blue. In the southern states this shrub becomes evergreen; the young branches are flourescent, and sometimes the under side of the leaves. According to Richard, in Brot's herb, this is the same as V. pyrifolium, Poir.


20 V. obova'tum (Walt. car. p. 116.) glabrous; leaves obovate, crenately toothed, or quite entire, obusse, but acute at the base, on short petioles; corymbs sessile; berries ovate-roundish. % H. Native of Carolina and Georgia, in shady woods. Lodg. bot. cab. 1476. V. cassinodea. Michx. fl. bor. amer. 1. p. 179. but not of Lin. Flowers white. Fruit black, shining. Var. β; acetabulum (Desf. arb. 1. p. 345.) leaves oblong-obovate, obtuse, entire or loosely crenated at the apex. % H. Growing along with the species.

Obovate-leaved Viburnum. Fl. May, June. Clt. 1812. Sh. 3 to 6 feet.

21 V. cassinodea (Lin. spec. p. 384.) leaves ovate-lanceolate, acute at both ends, crenated, glabrous above, with subrevolute edges; under side of leaves, as well as the petals, which are keeled, and branches, which are tetragonal, covered with scurfy dots; corymb sessile; fruit ovate. % H. Native from New York to Carolina, in swamps. V. punctatum, Rafin. in litt. Flowers white. Berries bluish-black.


23 V. nuditum (Ait. hort. kew. 1. p. 371.) quite glabrous; leaves linear-lanceolate, shining above, obsolescently serrate or entire; branches tetragonal. % H. Native of Carolina and Georgia, in sandy barren woods. A low shrub, with small leaves. Flowers white.


24 V. odoratissimum (Ker, bot. reg. t. 456.) evergreen, glabrous; leaves coriaceous, elliptic-oblong, almost entire, with revolute margins; branches of thyrse opposite, having the peduncles of the branches triquetrously pedicellate; style simple, short; berries oblong. % G. Native of China. V. Sinense, Zeyh. in Coll. hort. ripul. 145. app. 2. p. 330. t. 16. V. Chinense, Zeyh. ex Steud. nom. p. 880. Coffea monospérama, Hook. et Arn. Berries red, but at length becoming blackish, shining, 1-seeded, crowned by the lobes of the calyx, which are erect.

Flowers white, with the scent of those of Olea fragrans, or sweet olive. This shrub has scarcely at all the appearance of a Viburnum, from which genus the presence of a style essentially distinguishes it. (F. 76.)


25 V. lan'tana (Lin. spec. p. 384.) leaves cordate, rounded, finely serrated, veiny, clothed beneath, but more sparingly on the upper side, with starry mealy pubescence, like that on the branches, petioles, and peduncles; cymes pedunculate, broad, flat, of numerous crowded white flowers; bracteas several, small, acute. % H. Native throughout Europe, even to Caucasus, in hedges. In Britain in woods and hedges, especially on
a chalky or limestone soil. Smith, engl. bot. t. 331. Jacq. austr. t. 341. — V. tomentosum, Lam. fl. fr. 3. p. 363. — Cam. ept. 122. with a figure. — Duham. arb. 2. t. 103. — Lob. icon. 2. t. 106. A small tree, with copious, opposite, round, peltate, mealy branches. Under side of leaves and branchlets white from mealy down. Berries compressed in an early state, red on the outer side, yellow on the inner, finally black, with a little mealy astrin- gent pulp. Seed large, flat, and furrowed. The leaves turn of a dark red in autumn. This shrub is hardly worth cultivat- ing for ornament, nor is it of any particular use, except that the bark serves to make bird-lime; but that of the holly is much better. It is supposed to be the viburnum of Virgil. The name lantana is from lento to make pliant, on account of the pliant branch

Way-faring Tree. Fl. May, June. Britain. Shrub 6 to 15 feet.


27 V. DENTATOM (Lin. spec. p. 384.) partly glabrous; leaves ovate, and nearly orbicular, plicate, coarsely and dentately serrated, with the nerves thick and feathered, glabrous on both surfaces; cymes or coryllia pedunculate; fruit nearly globose. F. H. Native of North America, from New York to Carolina, in mountain woods, and of Mexico. Jacq. hort. vind. 1. t. 56. Wats. dend. t. 25. V. dentatum lucidum, Ait. Hort. kew. 1. p. 572. V. dentatum glabulum, Michx. fl. bor. amer. 1. p. 179. Flowers white. Berries small, dark blue, crowned by the calyx. In North America the shrub is known by the name of arrow-root.


Downy Viburnum. Fl. June, July. Cilt. 1736. Shrub 3 feet. 29 V. ELLIPITICUM (Hook. fl. bor. amer. 1. p. 280.) leaves elliptic, obtuse, on short petioles, coarsely serrated at the top, very hairy beneath, but most so on the veins, which are parallel; coryllia dense, pedunculate; ovaries hairy; berries oval-globose, deep black. F. H. Native of North America, common on the branches of the Columbia, near its confluence with the Pacific. Bark of branches pale brown. Leaves about 2 inches long.

Var. β; ovaries glabrous. H. H. Growing along with the species.

Elliptic-leaved Viburnum. Shrub 2 to 4 feet. 30 V. Villosum (Swarz, prod. p. 54. fl. ind. occ. 1. p. 564.) leaves ovate, acuminate, quite entire, glabrous above in the adult state, but tomentose beneath from stellate down, as well as the pedicels and branchlets; coryllia terminal, pedunculate; fruit ovate-oblong. S. Native of the south of Jamaica, on the mountains. Peduncles and calyces rather villous. Corollas white. This species agrees with V. Tinus in the leaves being entire, and from the tomentum with V. Lantana. Peduncles quadriangular and channeled.

Villosum Viburnum. Clt. 1824. Shrub 5 to 6 feet.

31 V. Cotinifolium (D. Don, prod. fl. nep. p. 141.) leaves roundish-oval, quite entire, clothed with stellate tomentum on all surfaces, grey beneath, as well as the branches; coryllia terminal, woolly. H. Native of Nipail, at Sirinagur. Flowers white.

Cotinifolia-leaved Viburnum. Shrub.

32 V. Nervosum (D. Don, prod. fl. nep. p. 141.) leaves cordate, acuminate, nerved, serrated, clothed with deciduous stel- late tomentum beneath, as well as on the branches; peduncles terminal, tern, cymose, few-flowered. H. Native of Nipail, at Sirinagur, where it is called Pheelaroom by the natives. V. Lantana, Wall. mss.

Nerved-leaved Viburnum. Shrub 4 to 6 feet.

33 V. Cardifolium (Wall. cat. no. 462. D. C. prod. 4. p. 327.) leaves heart-shaped, acuminate, dentately serrated, membranous, glabrous above, clothed with stellate down on the pedicels and nerves, which is at first dense, but at length scattered; coryllia terminal, sessile, with 5-7 long main branches or rays; berries elliptic. H. Native of Nipail, in Kamaon and Gosainthong. Leaves 4 inches long, and 2½ broad. Petioles 12-15 lines long. There are 4-6 nerves at the base of the limb of the leaf on each side, rising from the midrib.

Heart-leaved Viburnum. Shrub 5 to 6 feet. 34 V. Mullaha (Hamilt. in D. Don, prod. fl. nep. p. 141.) leaves ovate, acuminate, distantly serrated, rounded at the base, densely clothed with tomentum beneath, as well as on the branches; coryllia terminal, compound, spreading, tomentose; teeth of calyx short. H. Native of Nipail, at Suembo. Nearly allied to V. tomentosum. Flowers white.

Mullaha Viburnum. Shrub.

35 V. Stellalatum (Wall. cat. no. 463. D. C. prod. 4. p. 327.) leaves ovate, cordate, acuminate, glabrous above, except on the middle nerve, densely clothed with stellate down beneath, as well as the branchlets and peduncles; the margin serrated: serratures distant, small, callys; coryllia terminal, with 5-7 main branches, exinvolucrate. H. Native of Nipail, in the valley, and at Kamaon. Wall. pl. rar. assi. 2. p. 54. t. 169. Flowers white. Leaves roundish-cordate. Berries scarlet.

Starry-haired Viburnum. Shrub 12 to 20 feet. 36 V. Involucratum (Wall. cat. no. 458. D. C. prod. 4. p. 327.) leaves ovate, acuminate, somewhat cordate at the base, villous from simple hairs while young, as well as the branchlets; coryllia terminal, decomposed; bracteae and bracteoles foliaceous, oval, attenuated at the base, acuminate, nearly entire, exceeding the flowers. H. Native of Nipail. Branches of coryllia and calyces villos. Flowers white.

Involucrated Viburnum. Shrub 4 to 6 feet.

§ 2. Leaves serrated and denticulated. Flowers monogyne from the style being a little elongated, and the stigmas being concrete.

37 V. Erusum (Thunb. fl. jap. p. 124.) leaves broad-ovate, acuminate, closely serrated, rather villous on both surfaces;
petioles tomentose; umbels decompound, pilose; style simple.

39 V. acerifolium (Lin. spec. 383.) branches and petioles pilose; leaves ovate-cordate, usually 3-lobed, acuminated, sharply
and loosely serrated, downy beneath; petioles glandless, when
young stipulaceous at the base, and rather tomentose; corymb
terminal, pedunculate, not radiate. ￡. H. Native of North
America, from New England to Carolina, and of Newfound-
land, in rocky mountainous situations. Throughout Canada from
Lake Huron to the Saskatchewan; and about Fort Vancouver
on the Columbia. Vent. hort. celts. t. 72. Wats. dend. brit. t.
118. Flowers white. Berries black, oval, compressed.

§ 3. Leaves 3-lobed.

39 V. acerifolium (Lin. spec. 383.) branches and petioles
pilose; leaves ovate-cordate, usually 3-lobed, acuminated, sharply
and loosely serrated, downy beneath; petioles glandless, when
young stipulaceous at the base, and rather tomentose; corymb
terminal, pedunculate, not radiate. ￡. H. Native of North
America, from New England to Carolina, and of Newfound-
land, in rocky mountainous situations. Throughout Canada from
Lake Huron to the Saskatchewan; and about Fort Vancouver
on the Columbia. Vent. hort. celts. t. 72. Wats. dend. brit. t.
118. Flowers white. Berries black, oval, compressed.


40 V. orientalis (Pall. fl. ross. t. 58. f. H.) leaves 3-lobed,
acuminated, coarsely and bluntly toothed; petioles glandless,
grabous; corymb terminal, not radiate; fruit oblong, compressed.
￡. H. Native of Siberia, in woods, on the moun-
tains, &c. Bieb. fl. taur. 1. p. 245. O’pulus orientalis, folio
ampissimo tridentato, Tourn. cor. p. 42. Flowers white. Seed
oval, furnished with 2 channels on both sides, as in V. Lantana.

Very like the preceding species.


Sect. II. O’pulus (a name altered from populus, the poplar:
the leaves resembling those of the poplar). Tourn. inst. t. 376.
Moench, meth. p. 605. Outer flowers of the corymbs radiant
and sterile, much larger than the rest, which are fertile. Seed
obcordate.

41 V. O’pulus (Lin. spec. 384.) quite grabous in every part;
leaves broad, 3-lobed, acuminated, unequally serrated, very
petioles beset with glands towards the top, and several oblong
leafy appendages below; cymes pedunculate, white, with
linear bractes: with several of the marginal flowers dilated
flat, radiant, and without stamens or pistils; berries elliptical,
bright red, very juicy, but bitter and nauseous; seed compres-
sed. ￡. H. Native throughout Europe to Caucasus, in watery
hedges and swampy thickets. In Britain in like situations.
Smith, engl. bot. t. 322. Fl. dan. 661. Hayn, term. t. 32. f. 4.
V. lobatum, Lam. fl. fr. 3. p. 363. O’pulus glandulosus,
1002. with a figure. Math. valgr. 2. p. 607. with a figure.
Branches smooth, green. Leaves bright green in summer, but
in autumn assuming a beautiful pink or crimson hue, like other
European species of the genera, that are principally American,
as Cornus, Rhus, &c. Flowers white. Berry crowned by the
limb of the calyx. There is to be found in the gardens a varie-
gated leaved variety.

Var. $\beta$, stérilis (D. C. prod. 4. p. 328) ￡. H. Cultivated in
gardens. This variety is called snow-ball-tree or guelder-rose.
It is commonly planted in shrubberies along with the lilac and
linden, being grouped elegantly with the various purple hues of
the former, and the golden tints of the latter, but they are all mere
summer beauties; nor does any thing profitable or ornamental
follow. The several marginal flowers of the corym in the species
are dilated, flat, and radiant, without stamens or pistils. In this

42 V. edule (Pusch, fl. bor. amer. 1. p. 203.) leaves 3-lobed,
bluntish behind, and 3-nerved: lobes very short, denticulate
serrate: serratures acuminate; pediolas glandular; outer
flowers of corymbas radiate. ￡. H. Native of North America,
from Canada to New York, on the banks of rivers. In Canada
from the Saskatchewan to Slave Lake, in lat. 66°. V. O’pulus
dulce, Michx. fl. bor. amer. 1. p. 180. A smaller and more up-
right shrub than the preceding species. The berries of the same
colour and size, but when completely ripe more agreeable to
eat, and sometimes employed as a substitute for cranberries.
It does not seem to differ much from V. oxyeococcus except in the
broader base of the leaf.

5 to 10 feet.

43 V. oxyeococcus (Pusch, fl. bor. amer. 1. p. 203.) leaves
3-lobed, acute behind, 3-nerved; lobes divaricate, acuminate,
coarsely and distantly serrated; pediolas glandular; cymes ra-
diant; fruit oblong-ovate. ￡. H. Native of North America;
in Kentucky, near Danville; Tennessee and Upper Carolina,
180. V. O’pulus Americana, Ait. hort. kew. 1. p. 375.
Flowers white. Berries subglobose, red, of an agreeable acid,
resembling that of cranberries, for which they are a very good
substitute. Very like the V. O’pulus of Europe.

Var. $\beta$, subintegrifolus (Hook. fl. bor. amer. 1. p. 281.) leaves
but little cut, very pubescent beneath. ￡. H. Native on
the banks of the Columbia.


44 V. molle (Michx. fl. bor. amer. 1. p. 180.) leaves near-
by orbicular, cordate, plicate, toothed, rather tomentose
beneath from very soft down; petioles rather glandular; corymbs
radiant; fruit oblong-ovate. ￡. H. Native of North America,
in Kentucky, near Danville; Tennessee and Upper Carolina,
in woods. V. alnifolium, Marsh. arb. p. 162. Flowers white.
Berries red. Bark deciduous. Very like V. oxyeococcus, and
perhaps only a variety of it.


45 V. microcarpum (Cham. et Schlecht. in Linnaea. 5.
p. 170.) leaves subcordate, orbicular, or obovate, short-acuminated,
remotely and sinutately toothed, pubescent above, and clothed
with hoary tomentum beneath; petioles short, without glands;
rays of cyme almost sessile. ￡. H. Native of Mexico, near
Jalapa and San Meguel del Soldado. Leaves like those of
the filbert. Fruit black.

Small-fruited Guelder-rose. Shrub 6 to 8 feet.

Sect. III. Solochnthus (from σωλην, solen, a tube, and
tinus, the laurestine; in reference to the corollas being tubular.
D. C. prod. 4. p. 328. Corollas not radiant. Corolla obconical
or cylindrical. Seeds oval-oblong. This section agrees with the
tube Lonicerae in the corollas being tubular.

46 V. daivuki (Pall. fl. ross. ed. 8vo. p. 52.) leaves
ovate, somewhat cordate at the base, crenately serrated, beset
with stellate down, as well as the branchlets; corymb dichoto-
mous, few-flowered; corollas tubular, somewhat funnel-shaped,
bluntly 5-toothed. ￡. H. Native of Dahuria. Lonicera
Mongolica, Pall. fl. ross. 1. t. 38. and t. 58. f. F. G. Gmel. sib.
t. 25. Cór纳斯 Daúrica, Laxm. Berry 5-7 seeded, ex Pall
ed. 1, 1-seeded, at first red, but at length becoming black and sweet, ex Pall. ed. 2. Allied to *V. Latifolia*. Flowers yellowish white.

**Dahurian Viburnum**. Shrub 6 to 8 feet.

47 *V. Polycoronum* (Wall. cat. no. 455.) leaves cordate, ovate, somewhat acuminate, glabrous above, and tomentose from dense stellate white down beneath, but at length rather naked; corollas terminal, 5-rayed, on short peduncles; corollas obconically tubular; berry elliptic, glabrous.  \( \frac{1}{2} \). H. Native of Nipaul, at Kamaon and Sirmore. Leaves 4-5 inches long, and 3 inches broad; petioles 4 lines long.

**Many-flowered Viburnum**. Shrub 6 to 8 feet.

48 *V. cylindricum* (Ham. in D. Don, prod. fl. nep. p. 142.) leaves oval-oblong, acuminated, coriaceous, quite entire, pubescent beneath, and on the branches; corollas compound, erect, tomentose; corolla oblong, tubular, with a short 5-toothed limb.  \( \frac{1}{2} \). H. Native of Nipaul, at Narainhatt. This species has the habit of *V. nudum*. Flowers white, tubular, very like those of *V. Dahuricum*.

**Cylindrical-flowered Viburnum**. Shrub.

49 *V. Grandiflorum* (Wall. cat. no. 464. D. C. prod. 4. p. 329.) leaves elliptic, acuminate, dentately serrated, pubescent along the nerves beneath, when young ornamented with pencilled hairs in the axils of the serratures above; corollas terminal, bracteate; corollas cylindrical.  \( \frac{1}{2} \). H. Native of Nipaul, at Kamaon. Very nearly allied to *V. erubescent*, but differs in the singular hairs on the leaves. Bracteas villous, foliaceous, 4-5 lines long. Flowers white.

**Great-flowered Viburnum**. Shrub.

50 *V. Erubescent* (Wall. pl. rar. asiat. 2. t. 134. D. C. prod. 4. p. 329.) leaves elliptic, acuminate, serrated, glabrous; branchlets, petioles, and peduncles rather hairy; corollas terminal; bracteas linear-subulate, small; corollas cylindrical.  \( \frac{1}{2} \). H. Native of Nipaul, at Kamaon. Leaves white young downy and ciliated. Flowers white. Berries oblong, red, 1-seeded, crowned.

**Erubescent Viburnum**. Shrub 10 to 12 feet.

51 *V. Coriaceum* (Blum. bijdr. p. 656.) leaves ovate or oval-oblong, acuminate, denticulated, coriaceous, glabrous: corollas terminal, fastigate; tube of corolla cylindrical.  \( \frac{1}{2} \). H. Native of Java, in woods on the higher mountains.

**Coriaceous-leaved Viburnum**. Shrub 6 to 7 feet.

† Species natives of Japan, but are not sufficiently known.

52 *V. Cuspidatum* (Thunb. fl. jap. p. 125.) leaves ovate, cuspidate, serrated, villous; umbels supra-decompound, terminal, radiant.  \( \frac{1}{2} \). H. Native of Japan. Flowers white.

**Cuspidate-leaved Viburnum**. Shrub.

53 *V. Dilatatum* (Thunb. fl. jap. p. 124.) leaves ovate, acuminate, unequal, toothed; petioles and peduncles villous; panicle axillary, decompound, but not radiant: style simple, very short.  \( \frac{1}{2} \). H. Native of Japan.

**Dilatatum Viburnum**. Shrub.

54 *V. Tomentosum* (Thunb. fl. jap. p. 123.) leaves ovate, acuminate, serrated, veiny, tomentose beneath and on the petioles; umbels lateral, radiant.  \( \frac{1}{2} \). H. Native of Japan, in woods. Sijo vulgo Adsai, Kempf. amen. ex p. 854. Branches glabrous, reddish. Flowers blue, disposed on a dense large round head like the Snow-ball Guelder-rose; some are radiate and sterile, and others are small and pendant.

**Tomentose Viburnum**. Shrub 5 to 6 feet.

**Cult.** The species of *Viburnum* are all beautiful shrubs, and the hardy species are well adapted for ornamental shrubbery. They are either increased by laying in the shoots, or by cuttings under a hand-glass in a shady situation. The greenhouse and hardy kinds are early flowerers, which render them very desirable.

**Prize II.**

**Lonicera** (plants agreeing with *Lonicera* in important characters). R. Br. chart. et descr. (1818) p. 4. D. C. prod. 4. p. 329.—*Caprifoliaceae*. A. Rich. dict. class. 3. p. 173.—Caprifolia, Batsch, tabl. aff. p. 239. Corolla gamopetalous, more or less tubular, often irregular. Style filiform; stigmas 3, free, or combined in one.

**III. TRIOSTEUM** (from treec, three, and osstov, ostov, a bone; in reference to the three bony seeds in each berry). Linn. gen. no. 234. Gærtn. fr. t. 26. Lam. ill. t. 150. D. C. prod. 4. p. 329.

**Lin. Syn.** Pentantria, Monogynia. Tube of calyx ovate; limb 5-parted (f. 77. a.): lobes linear-lanceolate, permanent. Corolla tubular (f. 77. b.), almost equally 5-lobed, gibbous at the base, a little longer than the calyx. Stamens 5, inclosed. Stigma thick, oblong. Berry coriaceous (f. 77. c.), obovately trigonous, crowned by the calyx (f. 77. d.), 3-celled (f. 77. e.), but sometimes only 1-celled at maturity. Seeds 3 in each capsule, rarely 5, boiny, elliptic.—Perennial herbs, rarely suffrutescent. Leaves tapering into the petioles, and somewhat connate at the base. Flowers axillary, sessile, or on very short pedicels.

1 **T. Perfoliatum** (Lin. spec. 250.) leaves oval, acuminate, abruptly narrowed at the base, and connate; flowers sessile, appearing verticillate.  \( \frac{1}{2} \). H. Native of North America, in the states of New Jersey, New England, Upper Carolina, and Virginia, in rich rocky grounds, principally in a lime stone soil. Schkuhr, handb. 1. t. 41. Diggel. med. bot. 90. t. 9. T. majus, Michx. fl. bor. amer. 1. p. 107.—Dill. eth. p. 394. t. 239. f. 378. Flowers and berries deep purple. Leaves sometimes subsinuated. There are glabrous and pubescent varieties of this species. The roots of this species, as well as those of the following, are used in North America as an emetic for ipecacuanha. It was first brought into notice by Dr. Tinkar, and hence it has been called Tinkar's root.


**Narrow-leaved Fever-woe.** Fl. June, July. C1699. Pl. 1 to 2 feet.

3 **T. Himalayana** (Wall. in Roxb. fl. ind. p. 180.) plant covered with long hairs; leaves obovate, acute, connate at the base; lowermost ones free; racemes terminal, bearing the flowers in whorls.  \( \frac{1}{2} \). H. Native of Nipaul, on the Himalaya at Gosangthah, where it grows on very high and exposed rocks. Stems terete. Leaves membranous, rounded at the end, with a short acumen, 6-8 inches long, about 4 fingers broad, somewhat narrow towards the base. Berries oval, about the size of a small gooseberry, 3-furrowed, 1-celled, 3-seeded, hairy, yellow.

**Himalaya Fever-woe.** Pl. 2 to 3 feet.
CAPRIFOLIACEÆ. IV. DIERVILLA. V. LONICERA.

4 T. hirsutum (Roxb. fl. ind. 2. p. 180.) plant suffruticose, hairy; leaves on short petioles, lanceolate, entire, acuminate; flowers axillary, sessile, much shorter than their numerous lanceolate bracteae; berries 5-seeded. 2. H. Native of Chittagong, where it flowers during the hot season.

Hairy Fever-wort. Pl. 2 to 3 feet?

Cult. These species of Triostem will grow in almost any kind of soil, although they prefer a peat or vegetable mould; and they are easily increased by dividing at the root, or by seed, which generally ripen in abundance.


LIN. Syst. Pentándria, Monogónia. Tube of calyx oblong, bisectate at the base; limb 5-cleft. Corolla funnel-shaped, 3-cleft, spreading twice the length of the calyx. Stamens 5, somewhat exerted; stigma capitata. Capsule oblong, acute, 1-celled, not crowned by the limb of the calyx, as in most of the other genera of the present order. Seeds numerous, minute.—Erect shrubs. Leaves ovate, acuminate, serrated. Peduncles axillary, bisectate, usually dichotomous, 2-3 or 4-flowered.


Japan Diervilla. Shrub.


Corea Diervilla. Shrub.

Cult. The species of Diervilla are well fitted for the front of shrubberies; and they are easily increased by cuttings put into the ground in autumn and spring; or by suckers, which rise from the roots in plenty.

V. LONICERA (named after Adam Lonicer, a German who was born in 1528, and died in 1586. There was another Lonicer, John, who wrote comments on Dioscorides). Desf. fl. atl. 1. p. 183. Lam. ill. t. 150. D. C. prod. 4. p. 330.—Lonicera species, Lin. and many other authors.—Caprifolium and Xylotoma, Juss. gen. p. 212.—Xylotomum, Caprifolium, Chamaecerasus, and Periclymenum, Tourn. inst. t. 378 and 379.—Caprifolium and Lonicera, Roem. et Schultes, syst.—Lonicera and Xylotomum, Torrey, fl. un. st.

LIN. Syst. Pentádria, Monogónia. Tube of calyx 5-toothed (f. 78. a.). Corolla tubular (f. 78. b. f. 79. b.), campanulate, or funnel-shaped; with a 5-cleft, usually irregular limb (f. 78. b. f. 79. b.). Stamens 5. Style filiform; stigma capitata (f. 78. c.). Berry 3-celled; cells few-seeded. Seeds crustaceous.—Erect or climbing shrubs. Leaves opposite, sometimes connate, entire, but sometimes somewhat runcinate (f. 79. e.) in the same species. Flowers axillary, variously disposed.


* Flowers rigenti.—Caprifolium, Tourn. inst. p. 608.

1 L. Caprifolium (Lin. spec. p. 246.) branches twining; leaves deciduous, obovate, acute, glaucescent; uppermost ones broader and connate; flowers ringent, terminal, disposed in capitale whors. 5. H. Native of middle and south Europe, even to the Terek, in woods, hedges, and thickets. In England in like situations; in a wood near Elsfield, Oxfordshire, plentifully in Chalkpit Close, Hinton, Cambridgeshire, certainly wild; also in another copice in the same parish. In several woods in the south of Scotland. Smith, engl. bot. t. 799. Jacq. austr. t. 357. Engl. gard. cat. 14. t. 5.—Dodon. p. 137. 411. with a figure.—Math. valgr. vol. 2. p. 321. with a figure. Cam. epit. 713. with a figure.—Rivin. irrit. t. 123. Periclymenum perfoliatum, Ger. emac. p. 891. with a figure. Stem twining from left to right. Buds acute, glaucescent. The lower leaves are distinct and somewhat stalked; 2 or 3 of the upper pairs united; the uppermost of all forming a concave cup. Flowers in one or more axillary whors: the uppermost whorl terminal: with a central bud, 6 in each whorl, highly fragrant, 2 inches long, yellowish, with a bluish-coloured tube. Berries elliptical, of a tawny orange colour, each crowned by an almost entire calyx.

Goat's-leaf or Pale-perfoliate Honeysuckle. Fl. May, June. Shrub tw.


Caprifoliaceae. V. Lonicera.

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Sic. 1 p. 257. Caprifolium implexum, Rem. et Schultes, syst. 5. p. 261. Flowers purplish before expansion, becoming paler on the outside as they expand; white on the inside; but finally changing to yellow, as in the common woodbine. The leaves in Curtis's figure appear to be ovate and acuate.


4 L. Cyrenica (Viv. fl. lib. spec. 12. t. 8. f. 1.) quite glabrous; branches twining; leaves elliptic, glaucous beneath; lower ones sessile, distinct: upper ones truncate at the base, and confluent; flowers disposed in whorled heads. H. Native of Syria, in the vicinity of Cyren, on hills. Said to be allied to L. Caprifolium, but differs in the upper leaves being much smaller, almost as in L. Periclymenum.

Cyren Honeysuckle. Shrub tw.

5 L. Periclymenum (Linn. spec. p. 247.) branches climbing; leaves all separate, deciduous, sometimes downy, glaucous beneath, ovate, obtuse, attenuated at the base; upper ones the smallest; heads of flowers all terminal, ovate, imbricated; flowers violet. H. Native of Middle Europe, in hedges, groves, and thickets, common; plentiful in Britain, in like situations. Smith, engl. bot. t. 800. Curt. fl. lond. fasc. 1. t. 15. Oed. fl. dan. t. 908. Schmidt. arb. t. 107. Svensk, bot. t. 140. Caprifolium Germânicum, Ræi, syn. p. 458. Engl. gard. cat. t. 5. Periclymenum, Ger. enac. p. 801. with a figure. Periclymenum Germânicum, Riv. mon. irr. t. 122. P. hor-ténea, Gesn. icon. pict. fasc. 1. 98. t. 7. f. 49. Caprifolium Periclymenum, Rom. et Schultes, syst. 5. p. 262. Caprifolium sylvaticum, Lam. fl. fr. 3. p. 365. There are varieties of this species with either smooth, pubescent, or variegated leaves; and when the plant grows by the sea-side they are occasionally more glaucous and rather succulent. Corollas externally deep red, or in the earlier flowering varieties all over buff coloured; in the maritime plant smaller and greenish. Berries nearly globular, deep red, bitter and nauseous, accompanied by permanent bracteas. The early writers attribute virtue to this shrub which are now quite given up, but the beauty and exquisite fragrance of the flowers make it a favourite plant in gardens and shrubberies. This is the true woodbine of poets, though likewise the "twisted elagante" of Milton. Notwithstanding Curtis's imperfect quotation, Shakespear is guiltless of this blunder. He says,

"So doth the woodbine, the sweet honeysuckle,
Gently entwist the maple."

Var. β, serótimum (Ait. hort. kew. 1. p. 378.) branches glabrous; flowers late, reddish. H. Hort. angl. 14. no. 4. t. 7. Mill. fl. t. 79. Riv. mon. irr. t. 122. Periclymenum Germânicum, Mill. dict. no. 4. This, the late red honeysuckle, produces a greater number of flowers together than either the Italian or Dutch honeysuckle, so that it makes a finer appearance than either of them, during the time of flowering. It has not been such a long inhabitant of our gardens as the Dutch honeysuckle, for about the year 1715 it was considered a great curiosity, when it was called the Flemish honeysuckle, and was probably brought over by the Flemish florists.

Var. γ, Belgica; branches smooth, purplish; leaves oblqong-

oval, of a lucid green above, but pale beneath, on long petioles; flowers in terminal, verticillate heads, each flower arising out of a scaly cover, reddish on the outside, and yellowish within, of a very agreeable odour. H. Periclymenum Germânicum, Mill. dict. no. 4.—Hort. angl. 15. no. 5. t. 6. This, the Dutch honeysuckle, may be trained with stems, and formed into heads, which the wild sort cannot, the branches being too weak and trailing for that purpose.

Var. δ, quercifolium (Ait. hort. kew. 1. p. 378.) leaves simulated like those of an oak. H. This variety is to be found in England in a wood near Kimberley, Norfolk; and near Oxford. There is also a kind of this with variegated leaves. The flowers are like those of the species. This is called the Oak-leaved honeysuckle.


7 L. pubescens (Sweet, hort. brit. p. 194.) branches twining; leaves broad-ovate-elliptic, on short petioles, pubescent and ciliated, glaucous beneath; upper ones connate perfoliate; spikes or racemes composed of verticillate heads of flowers; corollas beset with glandular pubescence. H. Native of North America, in Massachusetts, Vermont, New York, and Canada, in many places. Caprifolium pubescens, Goldie, in edib. phil. journ. 1822. april. p. 329. Hook, exot. fl. t. 27. L. hirsuta, Eaton, man. bot. ed. 3. p. 341. ex Torrey, fl. un. st. 1. p. 242. L. Goldii, Spreng. syst. 1. p. 758. Flowers yellow. This appears to hold the place in the more northern parts which L. flava does in the south; of which indeed Dr. Torrey suspects it to be a variety.


8 L. parviflóra (Lam. dict. 1. p. 728.) quite glabrous; branches twining; leaves elliptic, sessile: lower ones somewhat connate: upper ones connate perfoliate, glabrous, very glaucous beneath; flowers disposed in verticillate heads; corollas glabrous; with the tube gibbous at the base on one side; filaments hairy. H. Native of North America, from New England to Carolina, in rocky sandy situations; frequent in Canada, and as far north as the Saskatchewan; and from Hudson's Bay to the Rocky Mountains. Caprifolium parvifolórum, Pursh, fl. amer. sept. 1. p. 161. Lonicëéra dioïca, Lin. syst. veg. ed. 15. p. 181. L. média, Murr. nov. comm. gott. 1776. p. 28. t. 3. Caprifolium bractéatum, Michx. fl. bor. amer. 1. p. 105. Caprifolium dioïcum, Rem. et Schultes, syst. 5. p. 260. Caprifolium glácum, Moench. Flowers yellow, smaller than in any of the foregoing species; but it varies exceedingly in the colour of the flowers, for there is a variety mentioned by Michaux having purplish flowers.

Var. β; leaves pubescent or tomentose beneath. H. Native of Canada, along with the species.


9 L. douglasëa (D. C. prod. 4. p. 392.) branches twining; leaves oval, acute at both ends, petiolate, glabrous, ciliated, tomentose on the outside; upper ones connate; flowers disposed in capitellae or heads; stigma exerted; stamens inclosed. H.
Native of the western coast of North America, on the banks of the
1844. Corollas pubescent, bilabiate, deep orange red.
Leaves 4-6 inches long, deep green. Hooker in his fl. amer.
1. p. 282. considers this nothing but a variety of *L. parviflora*. 

branches twining; leaves small, on short petioles, cordate, ob-
tuse, stiff, hispid from pili as well as the branches, pale and
glaucescent beneath.  h.  c.  H. Native of north-west America,
on the subalpine range of Mount Hood, in rocky, partially
shady places, abundant; sparingly at the Grand Rapids, and on
steep rocks near Oak Point, on the Columbia. The specimens
examined have no flowers, but judging from the habit of the
plant it may perhaps safely be referred to this genus, and to
the present division of it. The leaves are hardly 6 lines long,
uniform, exactly cordate, very villous as well as the stems with
brown hairs.

*Small-leaved Honeysuckle*. Shrub tw.
11 L. crata (Ait. hort. kew. 1. p. 231.) branches twining;
leaves permanent, ovate, rather mucronate, glaucous beneath
and reticulated veined, glabrous: upper ones connately perfo-
litate; spikes composed of approximate flowers of flowers;
corollas ringent.  h.  c.  H. Native of North America, from
Carolina to New York, on the mountains, rambling among
rocks in shady moist situations, but rare. Hort. angl. p. 15.
p. 161. *R. em. et Schultes, syst. 5. p. 262.* L. Virginíana,
Marsh, arb. 136.? Períleymenum Americánum, Mill. dict. no.
7. Branches reddish brown. Flowers inclining to scarlet on
the outside, according to Pursh. Corolla ringent, reddish on
the outside, and yellow inside. Berries red.

* * Limb of corolla nearly equal.—Períleymenum, Tourn.
12 L. sempervivens (Ait. hort. kew. 1. p. 280.) quite gla-
brous; leaves permanent, evergreen, ovate or ovate, glaucous
beneath, glabrous: upper ones connately perfoliate; spikes
nearly naked, composed of whorls of flowers; tube of corolla
ventricose on the upper side; limb nearly regular, with 5
roundish lobes.  h.  c.  H. Native of North America, from
New York to Carolina, in stony dry woods. Hort. angl. t. 7.
amer. 1. p. 105. Períleymenum sempervivens, Mill. dict. no.
1. *Alátérnus sempervivens*, Roehl. ex Steud. Períleymenum
Virgíníicum, Riv. mon. 116. Branches brown. Leaves deep
green above, 2 inches long and an inch broad. Whorls of
flowers usually 3, at the top of each branch. Flowers of a
beautiful scarlet outside and yellow inside, about 1 inch long;
inodorous. There are several varieties of this species, particu-
larly one with an almost upright stem.

Var. a. major (Ait. l. c.) leaves roundish.  h.  c.  H. Curt.
bot. mag. 781. Schmidt, arb. t. 104. Great Trumpet Honeys-
uckle.

Var. b. minor (Ait. l. c.) leaves oblong, acute at both ends:
upper ones obtuse, perfoliate.  h.  c.  H. Sims, bot. mag.
1753. Ker. bot. reg. t. 556. L. connáta, Meerb. icon. t. 11.?
Small Trumpet Honeysuckle. According to the figure in bot.
mag. the flowers are scarlet both outside and inside.

*Evergreen or Trumpet Honeysuckle*. Fl. May, June. Clt.
1656. Shrub tw.
13 L. *siliósa* (Poir. suppl. 5. p. 612.) plant twining; upper
part of the branches hairy on one side; leaves coriaceous, reti-
culated, ovate, on short petioles, glaucous beneath, and ciliated
on the margins; upper ones connately perfoliate; spikes composed
of approximate vittellate heads of nearly sessile flowers; tube
of corolla hairy, ventricose in the middle; limb nearly equal.

14 L. occidentális (Hook. fl. bor. amer. 1. p. 282.) twining;
leaves oval, almost sessile, glabrous, ciliated, glaucous
beneath: upper ones connately perfoliate; flowers disposed in
vittellate heads; corolla glabrous, with an elongated tube,
which is gibbous above the base; the limb nearly equal; sta-
mens almost inclosed.  h.  c.  H. Native about Fort Van-
reg. t. 1457. *Caprifólium ciliósum*, Doug. ms. The flowers
are longer than any other British North American species, and
of a full orange red. Branches and peduncles glabrous.

15 L. *pilósas* (Willd. ms. ex Kunth, D. C. prod. 4. p. 333.)
leaves ovate-oblong, ending in an acute, cuspitate point, ciliated,
pijole on the nerves beneath: upper ones connately perfoliate;
flowers disposed in a vittellate terminal head; heads sessile:
tube of corolla long; limb nearly equal.  h.  c.  H. Native of
New Spain, in frigid places. *Caprifólium pilósas*, H. B. et
Kunth, nov. gen. amer. 3. p. 427. t. 298. Flowers purple.

*Pilosé Honeysuckle*. Shrub tw.

**Sect. III.** Xylóstéum (zólóx, xylon, wood, and oséro, osten,
a bone; the wood of *L. xylóstéum* is as hard as bone).—D. C.
fl. fr. ed. 3. vol. 4. p. 271. D. C. prod. 4. p. 333.—*Xylóstéum,
Juss. gen. 219.—Lonicéra, R. em. et Schultes, syst. 5. p. 10.
—Xylóstéum and Chamácecrasus, Tourn. inst. p. 609.—*Xylóst-
écum and Isiak, Adans. fam. 2. p. 501.—Cóix, Neck. elem.
no. 219. Pedicels axillary, 2-flowered, bibracteate at the apex.
Berries twin, distinct, or joined together more or less, 3-celled
in the young state, rarely 2-celled in the adult state; the limb
of the calyx is generally deciduous, therefore the fruit is usually
not crowned.—Climbing or erect shrubs. Leaves never connate.

§ 1. *Nin-töo* (Nin-töo or Sin-too is the name of *L. Jápónica
in China*).—D. C. prod. 4. p. 333. *Oearia and berries altogether
distinct. Stems scandent. Flowers irregular.*

16 L. macrántiá (D. C. prod. 4. p. 333.) branches twining,
hispid; leaves ovate or oblong, rather cordate at the base, and
acuminated at the apex, of an ash-grey colour and villous beneath,
glabrous above, except along the nerves; peduncles axillary
and terminal, 2-flowered, longer than the petioles, the whole
forming an ample leafy raceme; calycine segments subulate,
hispid; corolla very long.  h.  c.  H. Native of Nipaul, at
Suemóo, and of Silhiet. *Caprifólium macrántihum*, D. Don,
fl. nep. p. 140. *Xylóstéum scándens*, Ham. ms. Lon. Jápó-
nica, Wall. in litt. and in Roxb. fl. ind. 2. p. 174. Leaves 3-5
inches long, shining above, and villous along the nerves and
margins:美丽fully reticulated, glaucous, villous, and hairy
beneath. The flowers are at first snow-white and gradually
changing into a beautiful yellow, acquiring thereby a peculiarly
varied appearance. Berries nearly globose, smooth, deep
purple, covered slightly with a pale bloom, crowned by the
permanent villous calyx, 3-celled; cells 4-seeded. In Nipaul
this species embellishes most of the forests, both in the valley
and on the surrounding hills.

*Large-flowered Honeysuckle*. Fl. April, June. Shrub tw.
17 L. corfú's (D. C. prod. 4. p. 333.) branches twining,
pubescent; leaves ovate, acute, rounded at the base, downy on
both surfaces as well as on the peduncles; peduncles axillary,
longer than the petioles, 2-flowered, opposite, disposed in some-
CAPRIFOLIACEÆ.  V. LONICERA.

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Loirea's Honeysuckle. Shrub tw.

22 L. COCHICHA'SIS; climbing or twining, much branched; leaves ovate, pubescent, small; peduncles 2-flowered, axillary; berries distinct, roundish. H. Native of Cochinchina, among bushes and in hedges. L. Xylosteum, Lour. coch. p. 150. Tube of corolla very long; limb bilabiate: one of the lips 4-cleft and the other entire. Berry red. Flowers white.

Cochin-china Honeysuckle. Shrub tw.

23 L. TELFAIRII (Hook. et Arn. in Beech. voy. pt. bot. p. 190.) branches twining, pubescent; leaves petiolate, oblong, acute, obrate at the base or cordate, glabrous above in the adult state, and densely clothed with velvety pubescence beneath; peduncles bibracteate at the apex, 2-flowered, axillary, solitary, one half shorter than the pedioles; the terminal ones forming a kind of head; calyx villous; with minute, ovate, acute teeth; tube of corolla elongated, equal, villous. H. Native of China. Lonicera Periclymenum, Lour. coch. p. 150. Closely allied on the one hand to L. confusum, D. C. from which it differs in the leaves being smooth above, and in the shorter peduncles, and on the other to L. Leschenaultii, Wall. which, however, is said to have ovate-subcordate ciliated leaves; and villous branches.

Telfaire's Honeysuckle. Shrub tw.

24 L. LESCHENAU'TII (Wall. in Roxb. fl. ind. 2. p. 173.) branches twining; leaves ovate, subcordate, acute, quite entire, smooth above, hoary and villous beneath; with the margins ciliolate; peduncles 2-flowered, axillary, solitary, or in terminal fascicles. H. Native of the East Indies, on the Nelligery Mountains, where it is called Moule Gudea by the natives. Leaves 1-2 inches long; petioles villous. At the apex of each pedicle there is an involucrum, consisting of six unequal villous bracts, which support the two flowers. Calycine teeth linear, villous. Corolla large, probably yellow; with a villous slender tube, about an inch in length; and a bilabiate limb, which is nearly as long as the tube; the upper lip consisting of 4 ovate, obtuse lobes; under lip deeply divided; throat villous. Ovarium ovate, villous. Stamens long.

Leschenault's Honeysuckle. Shrub tw.

25 L. GLASRA'TA (Wall. in Roxb. fl. ind. 2. p. 175.) glabrous in every part; (branches twining; leaves ovate, acuminate, glaucous beneath, glabrous except on the nerves beneath, which are pubescent; peduncles axillary and terminal, short, villous, bearing towards the apex several opposite, approximate, very short, 2-flowered pedicels; tube of corolla rather short, cylindrical, widening at the apex; bracteas ovate. H. Native of Nipal, on the top of Sheopore, and from Kabelas in the valley: L. nigra, Thunb. jap. p. 89. and in Lin. trans. 11. p. 330. Bark of branches shining, brownish. Leaves 3-5 inches long, seldom obtuse at the base; the upper surfaces polished; petioles about half an inch long, surrounding the stem and branches with an elevated margin, as in L. acuminatea. Flowers yellow, smooth, with a purplish bloom on the outside, supported by a common involucre, consisting of 6 very small, ovate, ciliated bracteas. Calycine segments subulate, ciliolate. Tube of corolla about an inch long, widening at the apex into a bilabiate limb, which as well as the filaments and style are rather hairy; upper lip trifid, obtuse, the intermediate lobe retuse; the under lip oblong. Berries distinct, almost black, 3-celled; cells 4-seeded. Smooth Honeysuckle. Shrub tw.

26 L. ACUMINATA (Wall. in Roxb. fl. ind. 2. p. 177.) branches twining, villous; leaves ovate to oblong, cordate, acuminate, slightly hairy, membranous; peduncles axillary, longer than the pedioles; petioles, 2-flowered; bracteas linear, acuminate, ciliated, longer than the ovaries; corolla not gibbous, funnelform. H. Native of the Himalayas, at Gosangthan.
Leaves 3-5 inches long; petioles half an inch long. At the apex of the peduncles there is usually an involucremum of 6 small bracteas, which are hairy. Flowers like those of _L. Xylésteum_, and about the same size; they are yellow, tinged with pale purple, slightly hairy on the outside. Calycine segments lanceolate, ciliate, bluntest. Style and filaments hairy.

_Acuminate_—leaved Honeysuckle. Shrub tw.

27 _L. Diversifolia_ (Wall. in Roxb. fl. ind. 2. p. 178.) branches twining; leaves ovate, cuspidate, acute, or acuminate, rounded or suborbate at the base, pustulose above, villous beneath; peduncles axillary, shorter than the petioles, 2-flowered; calyx cup-shaped, acutely 5-lobed; corolla gibbose, funnel-shaped, villous; ovaries villous. H. Native of the East Indies, on Mount Curvul. Branches villous. Leaves 3 inches long, on very short petioles. Peduncles smooth. Bracteas ciliate with long hairs. Flowers resembling those of _L. Xylósteum_ both in size and colour.

_Var. β_, Roygeïna (Wall. cat. no. 487. D. C. prod. 4. p. 334.) leaves oval; peduncles length of petiole. H. Native of Nipaul, on Sirmore and Kamaon.

_Diverse-leaved_ Honeysuckle. Shrub tw.

28 _L. Ligustriïna_ (Wall. in Roxb. fl. ind. 2. p. 179.) branches slender, twining, covered with ash-grey, shining, smooth bark; young shoots villous; leaves ovate; ovary petiolate, shining, ciliate, obtuse at the base, acute at the apex; peduncles villous, axillary, very short, 2-flowered; limb of calyx truncate; berries distinct, and are as well as the ovaries covered by a common membrane. H. Native of Nipaul, on the mountains, in woods. Xylósteum ligustriïnum, D. Don, prod. fl. nep. p. 140. X. Naisœca, Hamil. ms. ex D. Don. l. c. Young shoots surrounded at the base with some lanceolate, acute, quadrifidriormly imbricated bud-scales. Leaves dark green above, pale and reticulated beneath; petioles villous. Bracteas 2 at the apex of each peduncle. Corollas yellowish-white, funnel-shaped, half an inch long; tube gibbose and pubescent at the base, villous within: limb nearly equal, spreading, divided into 5 ovate, obtuse, ciliate segments. Filaments smooth, about the length of the limb of the corolla. Ovaries distinct, 3 celled; cells 3-seeded.

_Priët-leaved_ Honeysuckle. Shrub tw.

29 _L. Lanceolatâ_ (Wall. in Roxb. fl. ind. 2. p. 177.) stems almost eect, bushy; leaves lanceolate, acuminate, hairy, acute at the base and glaucous beneath; peduncles axillary, longer than the petioles, and like them villous; berries distinct, glabrous smooth; bracteas 2 linear and 4 ovate. H. Native of Nipaul, at Goksinestham. Stem covered with fibrous epidermis, probably erect. Branches slender, pubescent. Leaves pubescent above and shining, glaucous and hairy beneath, with somewhat repand margins. Petioles short. Berries the size and colour of black currants, smooth, crowned, 3-celled, supported by 2 linear and 4 ovate bracteas, the latter recurved and shorter.

_Lanceolate-leaved_ Honeysuckle. Shrub erect?

30 _L. Canéscens_ (Schousb. mar. 1. p. 88.) branches twining, and are as well as the leaves canescent from down; leaves petiolate, ovate, cordate, blunts!; peduncles 2-flowered, longer than the petioles; bracteas and lobes of calyx oblong. H. Native of hedges about Mogodor, and on Mount Tria in Mauritania; and of Sicily at Palermo. ex Guss. fl. sic. 1. p. 250. L. biblôra, Desf. fl. atl. 1. p. 184. t. 52. Corolla bilabiata, attenuated at the base, velvety on the outside. Berries nearly distinct.

_Canescens_ Honeysuckle. Shrub tw.

§ 2. _Chamaeëdras_ (The name signifies a kind of false cherry; the fruit of some of the species resemble cherries). _D. C. prod._

4. p. 335. Berries distinct, but usually connected together at the base, and diverging at the apex. Corolla hardly gibbose at the base or equal. Erect bushy shrubs.


_Var. γ_, rubíbôra (D. C. l. c.) flowers red. L. Sûbîrica, Hortul. ex Pers. encl.

_Tartarian_ Honeysuckle. Fl. April, May. Clyt. 1752. Sh. 4 to 6 feet.

32 _L. Ciliâta_ (Muhl. cat. p. 22.) erect; leaves ovate or oblong, cordate, thin, ciliate, villous beneath in the young state; peduncles elongated; bracteas 2, ovate, 3 times shorter than the ovaries, which are distinct; corolla blunted spurred at the base: with short, nearly equal lobes; berries distinct, red, divaricate. H. Native of North America, on mountains among rocks, in rich soil; from Canada to Virginia, and throughout Canada to the Saskatchewan, frequent. Xylósteum ciliâtum, Pursh, fl. sept. amer. 1. p. 161. L. Tatârica, Michx. fl. amer. 1. p. 166. but not of Lin. L. Canadésis, Roem. et Schultes 5. p. 260. Flowers white, with a tinge of red or yellow; tube ventricose above; limb with short, acute segments. Style exerted. The variety β of Pursh is _Vaccinium album._


33 _L. Pyreînäca_ (Lin. spec. p. 248.) glabrous, erect; leaves obovate-lanceolate, acute, glaucescent beneath; peduncles 2-flowered, shorter than the leaves; bracteas oblong-linear, folicaceous; flowers almost regular; berries globose, distinct. H. Native of the Pyrenees, on calcareous rocks, in exposed situations. Duham. arb. 2. t. 110. ed. 2. vol. 1. t. 15. Magn. hort. p. 299. with a figure.—Caprîfolium Pyreînâicum, Lam. fl. fr. 3. p. 366.—Xylósteum, Pourn. inst. 605. Corolla white, twice the size of those of _L. Xylósteum_, funnel-shaped; limb 5-cleft, flat: with equal, ovate, obtuse segments.

_Pyreneân_ Honeysuckle. Fl. May. Clyt. 1739. Sh. 4 to 5 ft.

34 _L. Punîceâ_ (Sims, bot. mag. t. 2469.) erect; leaves ovate, subacute at the base of the same colour on both surfaces: peduncles axillary and almost terminal, 2-flowered, shorter than the leaves; tube of corolla rather gibbose at the base; segments of corolla nearly equal, irregularly arranged; one way and 2 another; berries distinct? H. Native country unknown. Symphoricarpus puniceus, Sweet. Flowers deep red or crimson. Leaves sometimes 3 in a whorl on the young shoots.

_Crimson-leaved_ Honeysuckle. Fl. April, May. Clyt. 1821. Shrub 2 to 4 feet.

35 _L. Xylósteum_ (Lin. spec. p. 248.) erect, downy; leaves...
ovate, acute, petiolate, soft; peduncles 2-flowered, shorter than the leaves; bracteas hairy, double: the 2 outer ones lanceolate, spreading: inner a small concave scale under each germ; berries oval, distinct, 1-celled, 6-seeded. ½. H. Native nearly throughout the whole of Europe, even to Caucasus, in thickets, hedges, and rocky places, and by the sides of woods. In Britain in like situations; in the fissures of rocks under the Roman wall near Shewing-Reels, or rather Seven-Rele, in Northumberland, plentiful; and certainly wild, in a copice called the Hacketts, to the east of Houghton Bridge, 4 miles from Arundel, Sussex. Smith, engl. bot. t. 916. fl. græce. t. 223. Oed. fl. dan. t. 808.

Var. ß, leucocéarpa (D. C. prod. 4. p. 335.) berries white.—Duh. arb. ed. 2. vol. 1. p. 52.

Var. γ, zanthocéarpa (D. C. l. c.) berries yellow.—Duham. l. c.

Var. ë, melanocéarpa (D. C. l. c.) berries black.—Baub. pin. 451.

Bony-wooded or Upright Fruity Honeysuckle. Fl. July. Brit. Sh. 4 to 5 ft.

36 L. nigra (Lin. spec. 247.) erect; leaves oval-oblong or elliptic, on short petioles, rather villous white, but nearly glabrous in the adult state; peduncles 2-flowered, elongated, shorter than the leaves. ½. H. Native of middle Europe, in subalpine woods, as in France, Switzerland, Austria, Silesia, Piedmont, &c. Jacq. aust. t. 314. Schmidt, arb. t. 110. Caprifolium roseum, Lam. fl. fr. 3. p. 368. Chamæcærus nigra, Delarb. fl. avv. ed. 2. p. 130.—Gesn. fasc. 37. t. 8. f. 48. Corolla reddish and pubescent on the outside, but whitish on the inside. Bracteas 4 under the ovaries; the 2 outer ones lanceolate, and the inner quadridi. Berries black, globose, joined together at the side.


37 L. hispida (Pall. ex Willd. mss. Led. fl. ross. alt. ill. t. 212.) branches hispid; leaves ovate, ciliæted, petiolar, glabrous on both surfaces; peduncles 2-flowered; bracteas ovate-elliptic, exceeding the berries. ½. H. Native of Siberia, on the Altaiæan Mountains. Branches opposite, glabrous or bristly, brownish. Leaves 2 inches or 1½ inch long, and an inch broad, glabrous on both surfaces, cordate at the base. Flowers greenish white, pendulous. Berries distinct, purple.

Hispida Honeysuckle. Shrub 2 to 3 feet.

38 L. flexuosa (Thunb. in Lin. trans. 2. p. 330. but not of Lod. nor Ker) erect, branched; branches very villous at the apex; leaves ovate-oblong, acute, on short petioles, glabrous; petioles villous; nerves of leaves puberulous; flowers axillary, few, almost sessile; berries globose, glabrous. ½. H. Native of Japan. L. nigra, Thunb. fl. jap. p. 89. but not of Lin. L. brachypoda, D. C. prod. 4. p. 335. Stems flexuous. Leaves about an inch long: upper ones the smallest. Peduncles hardly a line long. Berries distinct, ovate, acuminated, black.


§ 3. Cymæphæra (from κυμα, κυρφος, a curve, and ανθος, a flower; in reference to the flowers being gibbous on one side at the base). D. C. prod. 4. p. 336. Berries either distinct or joined together. Corollæs very gibbous on one side at the base. Erect bushy shrubs.

39 L. gibbosa (Willd. mss. in Schultes, syst. 5. p. 257.) vol. iii.

erect; leaves on very short petioles, ovate-oblong, acuminated, rounded at the base, pubescent beneath; peduncles 2-flowered, shorter than the leaves; bracteas linear, shorter than the ovaria; tube of corolla gibbous on the outer side at the base; berries almost globose, joined at the side. ½. F. Native of Mexico, at Real del Monte, in woods. Xylosteum Mexicænum, B. et Kunth, nov. gen. amer. 3. p. 426. t. 297. Corolla scarlet; with the limb oblique and bluntly 5-lobed.

Gibbous-flowered Honeysuckle. Shrub 3 feet.

40 L. Moenia (D. C. prod. 4. p. 338.) erect; leaves petiolar, elliptic-oblong, acuminated, obtuse at the base, pubescent beneath; peduncles 2-flowered, shorter than the leaves; bracteas oblong, acuminated, longer than the ovaria; tube of corolla gibbous above at the base; berries globose, joined together a little on the inner side. ½. H. Native of Mexico. L. gibboa, Moc. et Sesse, fl. mex. icon. ined. Very nearly allied to L. gibboa, but differs in the corolla being yellowish; but when decayed of a blood colour, permanent, and jagged, with the bracteas spreading. Berries globose, dark purple.

Mocino's Honeysuckle. Shrub.

41 L. involucratâ (Banks, herb. ex Spreng. syst. 1. p. 759.) erect; branches acutely tetragonal; leaves ovate or ovate, petiolar, membranous, beset with adpressed hairs beneath; peduncles axillary, 2-3-flowered; bracteas 4:2 outer ones ovate: 2 inner broad, obcordate, at length widening, clothed with glandular pubescence; corollæs pubescent, gibbous at the base on the outside; style exerted. ½. H. Native of North-West America, between lat. 54° and 64° (but probably confined to the vicinity of the Saskatchewan), thence to the Rocky Mountains. Lindl. bot. reg. 1179. Xylosteum involucratum, Richards, in Frankl. 1. journ. ed. 2. append. p. 6. Corolla yellowish, tinged with red.

Involucrated Honeysuckle. Fl. May. Clt. 1824. Sh. 2 to 3 ft.

42 L. ledboëri (Eschsch. mem. act. soc. petersb. 10. p. 284. Hook. et Arn. in Beech. voy. pt. p. 145.) erect; branches elongated, acutely tetragonal; leaves ovate or oblong, somewhat acuminate, stiff, pubescent, tomentose on the nerves; peduncles axillary, 2-3-flowered; bracteas 4:2 outer ones ovate: 2 inner broad-obcordate, pubescent, at length increasing in size; corollæs gibbous at the base on the outside; berries distinct. ½. H. Native of California. Cham. et Schlecht. in Linneæa. 4. p. 136. Very nearly allied to L. involucrata and hardly to be distinguished from it. Flowers yellow, tinged with red.

Ledeboë's Honeysuckle. Shrub 2 to 3 feet.

§ 4. Isika (a name employed by Adanson for this tribe of the genus Lonicëra, and is probably without a meaning). D. C. prod. 4. p. 336. Berries on each peduncle, joined together in one, which is bivocabulate at the apex.—Erect bushy shrubs.—Isika, Adans. fam. 2. p. 501.—Isika, Mœnch. mth. p. 504.

43 L. altigena (Lin. spec. 248.) erect; leaves oval-lanceolate or elliptic, acute, glabrous, or pubescent, on very short petioles, rather ciliated; peduncles 2-flowered, shorter than the leaves; corollæs gibbous at the base. ½. H. Native of middle and south Europe, in subalpine places of mountains. Jacq. fl. aust. t. 274.—Duh. arb. ed. 2. vol. 1. t. 16.—Mill. fig. t. 167. f. 2. Caprifolium alpinum, Lam. fl. fr. Caprifolium Alpigenum, Gaertn. fr. 1. p. 136. Isika Alpigena, Börck, Isika lucida, Mœnch. Chamæcærus Alpigena, Delarb.—Lob. icon. 173. Corolla greenish yellow, tinged with red or purple. Berries red, size and appearance of those of a cherry; hence it is called Cherry woodbine by Jonstone. Leaves large.

Var. β, Silírica (D. C. prod. 4. p. 336.) lower leaves rather 3 M.
CAPRIFOLIACEÆ. V. LONSDERA.

**Alpine Honeysuckle.** Fl. April, May. Cirt. 1596. Shrub 3 to 5 feet.

44 L. Microphylla (Wild. rel. in Rom. et Schultes, syst. 5. p. 259.) erect; leaves elliptic, acute at both ends, glaucous beneath; peduncles 2-flowered. H. Native of Eastern Siberia. Led. fl. ross. alt. illt. t. 213. L. Alpigena, Sievers. The epidermis falls from the branches. Leaves rather villous on both surfaces, sometimes rounded at the base. Peduncles shorter than the leaves. Corollas greenish, yellow. Berries joined, of a reddish orange colour.

**Small-leaved Honeysuckle.** Cirt. 1818. Shrub 3 to 4 feet.

45 L. Weibiana (Wall. cat. no. 476. D. C. prod. 4. p. 336.) erect; leaves ovate-oblong, acuminate, obtuse at the base, on very short pedicel, pilose along the nerves, and ciliated on the margins; peduncles 2-flowered, 3 times shorter than the leaves; berries semi-concrete. H. Native of the East Indies, in Sirinagur. Habit almost of L. Alpigena, but differs in the leaves being pilose and ciliated, in the peduncles being equal in length to the internodes, not longer than them, &c. Corolla unknown.

**Webb's Honeysuckle.** Shrub 3 to 4 feet.

46 L. Govani'na (Wall. cat. no. 481. D. C. prod. 4. p. 337.) erect; leaves elliptic or lanceolate, acute at both ends, membranous, glabrous; peduncles 2-flowered, 3 times longer than the pedicel, but 4 times shorter than the leaves; bracteas linear, length of ovary; corollas gibbous at the base; berries joined. H. Native of the East Indies, in Sirmore, where it was collected by Mr. Govan. Allied to L. Alpigena, but the leaves are much thinner, the pedicels longer, the flowers smaller and sometimes solitary by abortion.

**Govan's Honeysuckle.** Shrub 3 to 4 feet.

47 L. Augustiformis (Wall. cat. no. 480. D. C. prod. 4. p. 337.) erect; leaves oblong-lanceolate, acuminate, glabrous; peduncles 2-flowered, a little shorter than the leaves; bracteas linear, twice the length of the ovary; berries joined together completely; corollas nearly equal, pubescent on the outside. H. Native of Nipaul, in Kamaon, and of Sirmore. Branches numerous, smooth. Leaves 15 lines long and 4 lines broad, pale and glaucous beneath; pedicels 2-3 lines long. Corolla pale, 4 lines long.

**Narrow-leaved Honeysuckle.** Shrub 3 to 4 feet.

48 L. Obovatoformis (Hook. fl. bor. amer. 1. p. 284. t. 100.) erect; leaves oblong or oval, clothed with velvety pubescence beneath; peduncles elongated, erect; bracteas obsolete; tube of corolla hairy, gibbous at the base on one side; limb unequal, deeply bilabiate: the upper lip 4-toothed, and the lower one nearly entire; berries joined in one, which is bicamellate at the top, bluish black in the dried state. H. Native of North America, in the island of Montreal, in the St. Lawrence; about Montreal, Lake Winnipeg, and of the western parts of the state of New York. Xylóstemon oblongifolium, Goldie, in edinb. phil. journ. 6. p. 323. Corolla hairy, yellow? Berries bluish black, size of a pea.

**Oblong-leaved Honeysuckle.** Fl. April, May. Cirt. 1823. Shrub 4 feet.


50 L. Orientalis (Lam. dict. 1. p. 731.) erect; leaves on very short pedicel, ovate-lanceolate, acute, quite entire, smoothish; peduncles 2-flowered, shorter than the leaves; bracteas 2, setaceous; berries joined in one, somewhat didymous and bimembrate at the apex, 10-seeded. H. Native of Iberia and Asia Minor, in woods. Bieb. fl. taur. et suppl. no. 305. L. Caucaica, Pall. fl. ross. p. 1. p. 57. L. caerulea, Güld. bot. 1. p. 423. ex Pall. Chamaécrasus orientalis litorifolio, Tourn. corr. p. 42. Berries black (Lam. Bieb.), dark blue (Pall.). Leaves stiilik, veiny, larger than in L. Alpigena. Flowers greenish yellow. This is perhaps nothing more than L. caerulea.

**Oriental Honeysuckle.** Fl. April, June. Cirt. 1825. Shrub 3 to 5 feet.

51 L. Iberica (Bieb. fl. taur. et suppl. 395.) erect; leaves petiolate, cordate, roundish, tomentose or pubescent; peduncles 2-flowered, shorter than the leaves; bracteas oblong, ciliated; berries joined together to the middle, globose. H. Native of Iberia, about Tiflis and at the Dervent. Stev. mem. soc. mose. 3. p. 257. Xylóstemon Ibericum, Bieb. cent. pl. rar. t. 13. ex corr. Suppl. Corollas lurid, form of those of L. Alpigena, Ovarium tomentose. Berries blood-coloured. Leaves like those of Cotoneaster vulgáris.

**Iberian Honeysuckle.** Fl. April, May. Cirt. 1824. Shrub 3 to 4 feet.

*Species not sufficiently known.*

52 L. Quinquéfoliáris (Hardw. asiat. res. 6. p. 351. ex fl. ind. 2. p. 174.) shrub bushy; leaves petiolate, elliptic, acute, quite entire; peduncles short, 2-flowered; berries 5-celled. H. Native of the East Indies, in valleys about Shreemagara. Very like L. ligustrina, Wall. but differs in the 5-celled fruit, and is therefore probably a species of Leycestrá. 

**Five-celled-fruited Honeysuckle.** Shrub.

53 L. Corymbosâ (Lin. spec. 249.) leaves ovate, acute; corymb terminal. H. Native of Chili, near Conception, where it is called Yitiu. Itiu. Feuill. obs. 2. p. 760. t. 45. Lorrháthrhus Uitti, Molina, sargg. chil. p. 139. ex Schultes, syst. 7. p. 161. Fréchicha violácea, Spreng. syst. 1. p. 406. but the plant does not belong to Rubiáceae, according to Bertero, in merc. chil. 1829, may. p. 611. nor Lorrháthrhus, in consequence of the fruit being many-seeded. But from the flowers being 4-cleft, it is probably a genus of the present order. Leaves an inch broad, fine green. Corolla blood-coloured; and calyx 4-cleft to the middle. Stamens 4. Style yellow. Fruit form and colour of an olive; with sweetish flesh.

**Corymbos-flowered Honeysuckle.** Shrub 12 feet.

54 L. Quadrifoíliá (Wild. spec. 1. p. 986.) stem unknown;
leaves 4 in a whorl, ovate-lanceolate, glabrous, bluish; peduncles twin, 2-flowered, length of leaves; bracteas 2, linear; berries distinct. H. Native country unknown. Corollas like those of L. Xylosteum, but having the tube narrower.

**Four-leaved Honeysuckle.** Shrub.

**Cult.** All the species of honeysuckle are truly ornamental, particularly the climbing and twining species, which are well adapted for training on trellis work or arbours, or against walls. The greenhouse twining kinds have a fine appearance, trained on the rafters: The upright hardy species are well fitted for decorating shrubberies. They all grow well in any common garden soil, and are easily increased by cuttings taken off in autumn, and planted in a sheltered situation: those of the tenderer kinds under a hand-glass.

**VI. LEYCESTERIA** (named by Dr. Wallich after his friend William Leycester, formerly Chief Judge of the principal native court under the Bengal Presidency, who during a long series of years and in various distant parts of Hindoostan, has pursued every branch of horticulture with a minifice and zeal and success, which abundantly entitle him to that distinction). Wall. in Roxb. fl. ind. 2. p. 181. pl. rar. asiat. 2. p. 21. t. 120.

**Lin. syst. Pentandria, Monogyinia.** Calyx with an ovate tube and an unequally 5-parted, permanent limb; segments unequal, small, linear, glandularly ciliated. Corolla funnel-shaped, having the tube gibbose above the base, and the limb campanulate, and divided into 5 ovate, nearly equal lobes. Stamen 5; filaments exerted. Stigma capitate. Berry roundish, crowned by the calyx, 5-celled; cells many-seeded. Seeds smooth, shining, ovate. Albumen fleshy. Embryo minute, terete, centripetal.-A beautiful large rambling shrub, with elongated fistular branches, which rise from scaly buds. Leaves opposite, ovate-lanceolate, acuminate, petiolar, smooth, entire, membranous, glaucous, with an obtuse, subcordate base; petioles pilose. Flowers white, with a tinge of purple, middle-sized and sessile, in fascicles, disposed in approximate whorls of fives and sixes, the whole forming short leafy drooping racemes, which terminate the branches and branchlets. Bracteas large, foliaceous, purplish, pubescent, and ciliated, lanceolate, acuminate, surrounding the racis with their concave bases; there are generally 6 under each whorl of flowers, of which the 3 outer ones are 2 or 3 inches long, rounded, and generally connate at the base: the inner ones much smaller; those at the base of the flower being considerably larger than the rest. Berries deep purple, approaching to black, as large as a common-sized gooseberry; pulp very soft; cells 8-10-seeded.—This genus appears to be intermediate between the present order and Rubiaceae, but from the last it is distinguished in the want of stipulas.

1 L. FORMOSA (Wall. in Roxb. fl. ind. 2. p. 182.). H. Native on the highest mountains, surrounding the valley of Nipaul; and of the much more northerly situations towards Gosaingsthan. It is also found at an elevation of seldom less than 8000 feet above the plains, among the pine and oak forests of Bishupur, as at Huitoo and Desoo in the Thakoorae of Kionthul, blossoming from June to August, and called by the natives *Nulkaraoo.* Hamelée connata, Puerrari, ms. Dr. Govan remarks, with great propriety, that this is a most beautiful shrub when in blossom, from the contrast of the deep green hue of its stem and leaves with the purple colour of the large bracteas and the berries.


**Cult.** This elegant shrub grows best in a light soil; and it is easily increased by cuttings planted in autumn or spring, or by seeds which ripen in abundance. It is well fitted for decorating the front of shrubberies; but being rather tender, should be protected in winter by a mat, or the haum of herbaceous plants.


**Lin. syst. Pentandria, Monogyinia.** Tube of calyx globose (f. 81. c.); limb small, 4-5-toothed. Corolla funnel-shaped (f. 81. c.), almost equally 4-5-lobed. Stamens 5, hardly exserted. Stigma semi-globose. Ovarium adnate, 4-celled; fertile cells containing only one ovulum each; and the sterile ones few ovula. Berry 4-celled, crowned by the calyx (f. 81. c.), having 2 of the cells empty, and the other 2 containing one seed each. —Erect elegant bushy oppositely branched shrubs. Leaves oval, quite entire. Peduncles short, axillary, one or many flowered. Flowers biciliate, small, white or rose-coloured, on short pedicels.

1 S. VULGARIS (Michx. fl. bor. amer. 1. p. 100.) flowers disposed in axillary capitate clusters, composed of nearly sessile racemules. H. Native of Virginia, Carolina, and Pennsylvania, in sandy dry fields. Lonicera symphoricarpos, Lin. spec. 249. S. parviflora, Deaf. cat. Symphoria conglomerata, Pers. ench. 1. p. 214. Symphoria glomerata, Pursh. fl. amer. sept. 1. p. 162.—Schmidt. arb. t. 115.—Dill. elth. t. 278. f. 360.—Hort. ang. 85. t. 20. Corolla white. Berries red, size of hemp seed; but according to Pursh the flowers are small, red, and yellow; and the berries purple. Branches brown, smooth. Leaves elliptic, ovate, obtuse, glaucous, and pubescent beneath. The berries are cup-shaped, and ripen in winter.


2 S. RACEMOSUS (Michx. fl. bor. amer. 1. p. 107.) flowers disposed in nearly terminal loose interrupted racemes, which are often leafy; corolla densely bearded inside; style and stamens inclosed. H. Native of North America; on mountains near Lake Mistassins; on the banks of the Missouri; of Upper Canada; abundant about the Saskatchewan; on the banks of the Columbia, and at Puget's Sound, and Nootka Sound, north-west coast. Symphoria racemosa, Pursh. fl. amer. sept. 1. p. 162. Sims, bot. mag. 2211.

Lodd. bot. cab. t. 230. S. leucocarpa, Hort. Leaves glaucous beneath. Corolla rose-coloured. Berries large, white. This is a fine shrub, very common in our gardens, easily known by its large white berries, and small red flowers. The S. elongata and S. heterophylla, Presl, in herb. Hanke, which were collected about Nootka Sound, do not differ from this species, in which the lower leaves are sometimes deeply sinuated.


3 S. OCCIDENTALIS (Richards, in Frankl. 1st journ. ed. 2. append. p. 6.) spikes dense, terminal, and axillary, drooping; corolla and segments densely bearded inside; style and stamens a little exerted. H. Native of British North America, in the woody country, between lat. 54° and 64°, and known under the name of wolf-berry; abundant about the Saskatchewan and Red River; and about Fort Vancouver, on the Columbia. According to Dr. Richardson this species comes very near S. racemosus, but is distinguished by the larger, less glaucous,
more rigid, and denser foliage, and by the flowers being arranged in dense drooping spikes, larger than in S. racemösus, and by the prominent style and stamens.

_Symphoricàrpos_. Shrub 4 to 6 feet.


Small-leaved _St. Peter's-wort_. Shrub 3 to 4 feet.

5. **_S. glaucescens_** (H. B. et Kunth, l. c. p. 424. t. 295.) flowers axillary, solitary; leaves elliptic, acute, somewhat mucronate, smoothish. \( f. \) Native of Mexico, on the mountains near Santa Rosa, at the elevation of 4000 feet. *Symphoria montana*, Spreng. syst. 1. p. 757. Leaves glaucescent beneath.

*Glaucescent* _St. Peter's-wort_. Shrub 3 to 4 feet.

_Cult._ *Symphoricàrpos* is a genus of very beautiful and delicate shrubs, well adapted for shrubberies or borders. They grow in any common garden soil; and are easily increased by cuttings, which should be planted either in autumn or spring.

**VIII. Abelìa** (named by Mr. Brown after Clarke Abel, M. D., physician to the embassy to China under Lord Amherst; he collected and brought home many interesting plants). _R. Br._ car. and descrip. _pl._ Abel. 1818. in 4to. p. 5 with a figure.


_Lin. syst._ *Tétrâdría, Monogénia._ Calyx with an oblong tube, and a 2 or 5-petalled foliaceous limb: the segments oblong. Corolla tubular, funnelf-shaped, 5-lobed: lobes obovate, nearly equal. Stamens 4, didynamous or nearly equal. Stigma capitulate. Ovary 3-celled; 2 of the cells contain many ovula, but all become abortive, and the third contains only one ovulum, which comes to perfection. Pericarp 1-seeded, indehiscent, crowned by the foliaceous limb of the calyx.—Decumbent or weak glabrous shrubs. Leaves petiolate, dentately crenated. Peduncles axillary, trichotomous or trifid, or terminal and undivided. Involucre 2 or many flowers, composed of 6 or more leaves.

1. **_A. Chinensis_** (R. Br. l. c.) involucre 2-flowered; peduncles trichotomous; stamens exerted. \( f. \). _G._ Native of China, in the province of Kiang-si at the Lake Po-Yang, where it was collected by Dr. Clarke Abel. Tube of corolla 5-nerved: 4 of the nerves approximate, and the fifth remote. Ovary having one ovary on one side, and 4 on the other. Leaves ovate, finely pubescent.

_China._ Abelìa. Shrub 2 to 3 feet?

2. **_A. trifílora_** (R. Br. in Wall. pl. asiât. rar. 1. p. 14. t. 15.) flowers by threes, forming terminal corymb: lateral flowers furnished with 3 bracts: middle one sessile, naked: calyx 5-parted: the segments foliaceous, linear, and ciliated; leaves obovate-lanceolate, acuminate, quite entire, exsected with hyaline hairs. \( f. \) _G._ Native of the East Indies, on the highest mountains of Northern and Western Kamaon towards the Himalaya, where it is called *Kunki*. Flowers pale red, delightfully fragrant.

Three-flowered Abelìa. Tree small.

3. **_A. unifílora_** (R. Br. in Wall. pl. asiât. rar. p. 16.) peduncles 1-flowered, tribracteate. \( f. \) _G._ Native of China.

One-flowered _Abelia_. Shrub.

_Cult._ A mixture of loam, peat, and sand will be a good soil for the species of *Abélia*; and they may be easily increased by cuttings planted in any light soil, with a hand-glass placed over them.


_Lin. syst._ *Didynamía, Angiospérma._ Calyx double, superior one of one leaf; in 15, 5 deep, erect, lanceolate, acute, equal segments (f. 82. b.). Corolla bell-shaped (f. 82. d.); tube cylindric, gradually dilated upwards, about twice the length of the superior calyx; limb divided into 5, nearly equal, slightly spreading segments (f. 82. d.). Stamens 4, inclosed, didynamous (f. 82. f.): the 2 uppermost ones the shortest. Ovarium globose, of 3 cells. Style cylindrical, gently swelling upwards, declining longer than the corolla (f. 82. c.); stigma obtuse. Berry dry, obovate-oblong, of 1-cell, membranous, closely invested with the inferior calyx, and crowned with the superior one. Seed solitary, filling the cavity.—A trailing, somewhat shrubby plant, of an elegant aspect, and rendered most interesting to a botanist on account of the name given, with the concurrence of Linnaeus, by his friend Dr. J. F. Gronovius.

1. **_L. Borealis_** (Lin. spec. 880.) \( f. \) _H._ Native of Lapland, Sweden, Norway, Russia, Germany, Switzerland, Savoy, Siberia, &c., in dry, stony, shady, mossy, fér woods, on the mountains. In Scotland the plant was first found in an old fir wood at Inglisimdaie, on the borders of Mearns in 1795; it has since been found in several similar situations in the highlands of Scotland. In North America in several parts, as in the states of New England, New Hampshire, Vermont, but more particularly in Canada throughout the whole country from Lake Huron to the Arctic circle; and from Newfoundland and Labrador on the east to the Columbia, Unalascika, and Kotzebue's Sound on the west. _L. fl. succ._ 219. t. 1. fl. lapp. ed. 2. p. 214. t. 12. f. 4. Smith, engl. bot. t. 453. Wahl. fl. lapp. 170. t. 9. f. 3. Oed. fl. dan. t. 3.—A trailing, weak shrub, creeping, and evergreen plant, forming broad leafy patches; the young shoots hairy and leafy. Leaves obovate or ovate, firm, crenate in the fore part, slightly hairy, and of a full green above, paler beneath. Peduncles axillary, about a finger in length, bearing each 2 elegant, pendulous, flesh-coloured flowers at the apex, which are said to be very fragrant at night. A pair of very small leaves stand at the origin of the partial flower-stalks, or pedicles, and there is often a larger pair on two at the lower part of each peduncle. Corolla variegated internally with rose colour and yellow. The American plants are generally stronger than the European ones.

_Northern Linneas._ Fl. May, June. Scotland. _Pl. trailing._

_Cult._ This elegant little trailing evergreen shrub will not grow in cultivation unless in a peat border, where it will thrive and flower freely; and most so if the border is in a shady situation. It is sometimes grown in large pots or pans, filled with peat earth, and grows luxuriantly. It is easily increased by separating the creeping stems when rooted.

† Genera allied to Caprifoliaceæ, but are not sufficiently known.

X. **_Aidía_** (from aideos, aídos, perpetual; in reference to the durability of the wood of this tree). _Lour._ coch. p. 143. _D. C._ prod. 4. p. 940.

_Lin. syst._ *Pentâdria, Monogénia._ Tube of calyx adnate
to the ovary; limb 5-toothed, erect. Corolla superior, salver-shaped, with a woolly throat and a 5-parted limb: the segments lanceolate. Anthers 5, linear, inserted in the recesses between the segments of the corolla. Style equal in length to the stamens; stigma ovate-oblong. Berry ovate, umbilicate, 1-seeded.—A large tree, with very durable wood and spreading branches. Leaves opposite, lanceolate, quite entire, glabrous. Racemes axillary, short, loose. Flowers white.

1 A. Cochinchine'nsis (Lour. 1. c.) H. G. Native of Cochinchina. The wood of this tree is white and heavy, composed of thick fibres; and is used for the purpose of forming the foundation of bridges, being imperishable either by being under water or under ground.

Cochinchina Aidia. Tree large.

Cult. Any common soil will suit this tree; and cuttings will be easily rooted if planted under a hand-glass.


Lin. syst. Tetradria, Monogynia. Tube of calyx adnate to the ovary; limb 8-cleft. Corolla tubular: with a 5-cleft nearly equal limb. Stamens 4, epipetalous, nearly equal. Style filiform: stigma 2-lobed. Fruit 2-celled?—A twining shrub. Leaves opposite, petiolate, somewhat sagittate, a little serrated, acute. Flowers axillary, solitary, bifracteate; bracteas cordate, winged on the outside.—This genus is said by Rafinesque to be allied to Linnae'a, but the plant is wholly unknown to other botanists.

1 V. volubilis (Rafin. l. c.) H. C. G. Native of Abyssinia.

Twining Valentina. Shrub tw.

Cult. See Aidia, p. 452. for culture and propagation. The plant is well fitted for training up the rafter in a greenhouse.


Lin. syst. Diandra, Monogynia. Tube of calyx adhering to the ovary; limb 4-toothed. Corolla tubular, 4-cleft, bilabiate. Stamens 2; anthers 2-lobed; lobes remote. Style under the upper lip of the corolla; stigma simple. Capsule crowned by the calyx, 1-celled? 4-seeded. Stem herbaceous? angular; branches fastigate. Leaves opposite, sessile, oblong, hastate, unequally toothed at the base, acuminate, glabrous. Flowers small, sessile, disposed in whorls. According to the author it is allied to Dicervilla, but the genus is entirely unknown to any other author.

1 K. hastata'rum (Rafin. l. c.) Ψ. H. Native of Louisiana.

Anonyma, Rob. voy. p. 457.

Hastate-leaved Karpaton. Pl.?

Cult. This plant will grow best in a border of peat earth, and may probably be increased by dividing at the root.


Tube of calyx adhering to the ovary (f. 94. e. f. 97. g.); limb variable, truncate (f. 93. a.); or of many lobes, usually regular; the sepals or lobes equal in number to the petals (f. 84. c.), very rarely intermixed with accessory teeth. Corolla gamopetalous, inserted in the upper part of the tube of the calyx, usually with a 4-5 lobed limb (f. 93. b. f. 84. c.), rarely with a 3 or 9-parted limb (f. 101. b.); the tube either short (f. 84. b.) or long (f. 92. c.); the lobes or segments twisted or valvate in aestivation. Stamens equal in number to the segments of the corolla, alternating with them, and more or less adnate to its tube (f. 83. g. f. 91. b.). Anthers ovard, 2-celled (f. 111. c.), bursting inwardly. Ovarium situated within the calyx, and adh'ring to it (f. 94. c. f. 103. g. f. 93. g.), usually 2 (f. 94. c.) or many celled (f. 103. g.), rarely 1-celled by abortion: always crowned by a fleshy urceolus, or the limb of the calyx (f. 103. f.). Style one, rising from the urceolus (f. 85. d.); styles usually 2, distinct (f. 105. c.), or more or less combined (f. 83. e.), rarely more than 2. Fruit bacate (f. 107. h.), capsular (f. 95. k.), or drupaceous (f. 103. g.), 2 (f. 94. c.) or many celled (f. 103. g.); cells 1-2 or many seeded. The seeds, where they are solitary in the cells, are sometimes fixed by the apex, but usually by the base; but where they are numerous in the cells, they are fixed to a central placenta, and are usually horizontal. Alburnen large, horny or fleshy. Embryo straight, or a little curved, inclosed in the middle of the alburnum; with a terete radicle turned towards the hilum; and foliaceous cotyledons.—Trees, shrubs, and herbs, with terete or tetragonal branches. Leaves simple, girded by a marginal nerve, and therefore quite entire, opposite or verticillate, always bistrupulate. Stipulas variable in cohesion and form, interpetiolar or intrafoliaceous. Flowers arranged in various ways, but usually in panicles or corymbs, rarely unisexual by abortion.

This well marked order is nearly allied to Compósita, from which its distinct stamens, bilocular, and plurilocular ovary and inflorescence, distinguish it, and consequently it participates in all the relation of that extensive order. From Apecyeæ in the aestivation of the corolla, the presence of stipulas, and the inferior ovary distinguish it, yet, according to Mr. R. Brown, there exists a genus in equinoxial Africa which has the interpetiolar stipulas and seeds of Rubiaceæ and the superior ovary of Apecyeæ, thus connecting these two orders, Congo, p. 448. There is a striking affinity between Rubiaceæ and Caprifolium in the monopetalous tubular corolla, definite stamens, inferior ovary, and opposite leaves, which is confirmed by the corolla of the latter being occasionally regular or irregular. The tribe Operculariæ, referred to this order by Mr. R. Brown (Congo, p. 447.) and others (A. Rich. elem. ed. 4. p. 483.), is remarkable for having but 1-seed, and the number of stamens unequal to the lobes of the corolla, and therefore occupies an intermediate station between the Rubiaceæ and Dipsacaceæ. The tribe Stellitae is distinguished from the rest of the order in the stipulas being as large as the leaves, and of the same form and consistence; having from 1-3 between each leaf on both sides, forming with them a kind of star or whorl, from which circumstance the name stellate is applied. The leaves in this tribe can only be distinguished from the stipulas by the axillary buds.

Powerful febrifugal or emetic qualities are the grand features of this order, the most efficient products of which in these two respects are Quinquina and Ipecacuana. The febrifugal properties depend upon the presence of a bitter tonic astringent...
principle, which exists in great abundance in the bark; those of Cinchona are known to depend upon the presence of two alkalies, called cinchonine and quinine, both of which are combined with cinchic acid; two principles which, though very analogous, are distinctly different, standing in the same relation to each other as potash and soda. Turner, p. 648. Dr. Serttiner has obtained some other vegato-alkalies from Cinchona, one of which he calls chinioidia. Brande, journ. 12. p. 417. new series. The existence of this is denied by M. M. Neury and Delordre, ibid, July, 1830, p. 442. A detailed account of the qualities, synonyms, and commercial names of the species of Cinchona is given in Mr. Lambert’s work on the genus Cinchona, 4to. London, 1821. In the same work is the translation of Baron Humboldt’s account of the Cinchona forests of South America. Three species of Cinchona, the C. ferruginea, C. Vellooii, and C. Reniijiana, are found in Brazil, where they are used for the same purposes as the Peruvian bark, to which, however, they are altogether inferior. St. Hil. pl. usel. bras. no. 2. The French Guiana bark possesses properties analogous to those of Cinchona, and is obtained from Portlandia hexandra the Coutoure speciosa, Aublet. Humb. cinch. forest. p. 43. The Quinquina Pitou and Quinquina des Antilles are produced by species of the genus Ecosténuna, and are remarkable for possessing properties similar to those of the true Quinquina, but without any trace of either cinchonine or quinine. St. Hil. pl. usel. bras. no. 3. A kind of fever-bark is obtained at Sierra Leone from Rondetélita febrisfuga. Besides, there are a great number of other species possess barks more or less valuable. Pincknèya pubens is the fever-bark of Carolina; Condaminea corymbosa, Isétha coccinea, Antirhœa, and Morinda Rôjoc, are all of the same description. A lightish brown, bitter, and powerfully astrin- gent extract, called Gambier, is obtained at Malacca by boiling the leaves of Naúclea Gómbr.; it is sometimes substituted for gum-kino, Ainslie, 2. p. 106. A decoction of the leaves, as well as the root, of Cânthium parejflorun, is prescribed in India in certain kinds of flux, and the last is supposed to have antehilminthic properties, though neither has much sensible taste or smell. The bark and young shoots are also used in dysentery. Ainslie, 2. p. 63. Among the emetics, Ipecacuanha holds the first rank; it is the root of Cepheælis Ipecacuanha, a little creeping-rooted half-herbaceous plant, found in damp shady forests of Brazil. Similar properties are found in the roots of other Rubiaceous plants of the same country, as in Richardiænia róæza and R. scébra, Borrèria férregubre, and B. Pòiýa, &c. A peculiar alkaline principle, called emetia, is found in Ipecacuanha, which contains 16 per cent. of it. Turner, p. 653. The Raiz Preta, which is celebrated for its power in curing dropsy, and in destroying the dangerous consequences of bites of serpents, is said to be related to Ipecacuanha. Edinb. phil. journ. 1. p. 218. Several species of Psychótria, as P. eméctica, &c. and Geóptila rensiformis, are substitutes for Ipecacuanha. The spurious barks called Quinquina Pitou, are capable of exciting vomiting. The powdered fruit of Iánistencia durnetérm, is a powerful emetic. An infusion of the bark of the root is administered to nauseate in bowel complaints. Ainslie, 2. p. 186. According to Roxburg, the root bruised and thrown into ponds where there are fish, intoxicates them, as Céccalus Indicus. Ainslie, 2. p. 186. Psychótria Nôxza and Palicóaurea Margvrâvi, both called Erêa de rata, are accounted poisonous in Brazil; but nothing very certain seems to be known of their properties. Edinb. phil. journ. 14. p. 267. The root of Morinda umbellátâ in the Molucases, and that of M. citrifólia in India, is used for dyeing red and brown; and the bark of M. Rôjoc for ink. The leaves of Oldenlandia umbellâta are considered by the native doctors of India as expectorant; and the root is employed in India for staving nankeens. Ainslie, 2. p. 101. Coffe is the roasted seeds of a plant of this order, Coffea Arábica, and is supposed to owe its characters to a peculiar chemical principle called coffee. Turner, p. 699. The part roasted is the albumen, which is of a hard horns consistence; and it is probable that the seeds of most of the plants of the present order, whose albumen is of the same texture, would serve as a substitute. This would not be the case with those with fleshy albumen. The fruit of some Gardénias Gênia and of Vanquérie, the Voa Vanga of Madagascar, and Sarcocôphalus esculentus, are succulent and eatable. The root of Rúbia tinctória, the madder, is one of the most important dyes with which we are acquainted; a quality in which the roots of many other plants belonging to the tribe Stellátæ participate in a greater or less degree. The roots of Rúbia Munístia yield the madder of Bengal. Ainslie, 1. p. 203. The torrefied grains of Gálium are said to be a good substitute for coffee. The flowers of Gálium virum are used to curdle milk. An infusion of Aspérula cymannchica has a little astringency, and has been used as a gargle. Aspérula odoràta, or Woodruff, is remarkable for its fragrance when dried; it passes for a diuretic. Rúbia Nôxza is said to be poisonous. Opposite leaves, with intervening stipulas, a monopetalous corolla, with a definite number of stamens, are the great characteristics of Rubiaceæ; an order of such extent, that it embraces a very large proportion of the whole phenomenous plants, including within its limits humble weeds and lofty trees. Among them the plants of beauty or value are innumerable; of the former description the genera Iódrê, Bouvário, Catesbaeæ, Portlandia, Cardénia, Hamélica, Cepheælis, Augustea, and many others, are notable examples.

Synopsis of the genera.

A. Cells of fruit many-seeded.

TRIBE I.

CINCHONÆÆ. Fruit capsular, 2-celled; cells many secedd. Seeds winged.—Trees or shrubs. Stipulas interpetiolar.

SUBTRIBE I. NAUCLEÆÆ. Flowers capitulate, sessile, upon a globose receptacle (f. 83. e. f. 84. k.).

1 NAUCLEA. Tube of calyx oblong; limb truncate or 5-toothed (f. 83. b.), with linear lobes. Corolla funnel-shaped (f. 83. c.), with a slender tube and naked throat. Stigma tumid, undivided (f. 83. d.). Capsules sessile, not attenuated at the base.

2 UNCA'RIA. All as in Nauclea, but differs in the flowers being scattered on the receptacle. Calyx urceolately 5-cleft. Capsules pedicellate, elavate, attenuated at the base.
3 Adnya. Tube of calyx oblong; limb campanulate, 5-parted (f. 84. a.), permanent. Corolla funnell-shaped, 5-lobed (f. 84. b. c.), with a naked throat and valvate lobes. Anthers almost sessile (f. 84. c.), inclosed. Stigma capitate (f. 84. b.). Capsules membranous, 4-valved (f. 84. g.), pyramidal. Seeds 2-4 in each cell.

4 Breo'nia. Limb of calyx 5-parted. Corolla with a terete tube, and a flat, 5-lobed, spreading limb. Stamens inserted in the throat, half-exserted. Style very long: stigma bipartite. Ovaryum 2-celled; cells 7-8-ovulate: ovula fixed to membranous placenta, and hanging from the axis.


Subtribe II. Cincho'neae. Flowers more or less pedicellate, never seated on a globose receptacle.

6 Stev'nsia. Calyx girded by a 4-lobed involucre; limb bipartite, deciduous. Corolla salver-shaped, with a short tube, and a bluntly 6-7-parted limb. Anthers 6-7, sessile in the throat. Capsule globose, areolate at the apex. Seeds a little winged, pubescent at the base.

7 Cout'area. Limb of calyx 6-parted. Corolla funnell-shaped, with a short tube, and a bluntly 6-lobed limb. Stamens inserted in the bottom of the throat; anthers linear, exserted. Capsule obovate, compressed; valves bifid at the apex. Wings of seeds membranous.

8 Hilla. Calyx girded by a 4-leaved involucre; limb 2-4-parted, permanent. Corolla with a long tube (f. 85. b.), and a 4-6-parted limb (f. 85. b.). Stamens 4-6, inclosed, sessile beneath the throat (f. 85. c.). Capsule elongated, crowned. Seed ending in a pencil-formed tail (f. 85. c.).

9 Hyman'goon. Limb of calyx 5-parted, permanent. Corolla salver-shaped, with a very long tube, and a 5-parted limb. Stamens 5, inclosed, inserted in the top of the tube, which is inflated. Capsule oblong, clavate, 10-nerved, crowned. Seeds appendiculated at both ends.

10 Cincho'na. Calyx 5-toothed (f. 86. a.). Corolla with a terete tube, and a 5-parted limb (f. 86. b.), which is valvate in aestivation. Anthers linear, inserted in the middle of the tube (f. 86. a.), a little exserted. Capsules dehiscing at the valves, crowned. Seeds girded by a membranous lacerated wing.

11 Cosme'nea. Calyx 5-toothed. Corolla with a long tube, and a 5-lobed limb, which is valvate in aestivation. Anthers oblong, exserted. Stigma bipartite. Capsule somewhat 4-valved, dehiscing from the apex. Seeds girded by a lacerated wing.


13 Lucuida. Calyx 5-toothed (f. 87. c.), deciduous; lobes foliaceous. Corolla with a longish tube, and a 5-lobed expanded limb, which is imbricate in aestivation. Stamens almost inclosed (f. 87. a.); anthers linear. Stigma 2-parted (f. 87. b.). Capsule dehiscing at the dissepiment from the apex. Wings of seeds jagged.

14 Hymenoyction. Calyx 5-toothed. Corolla tubular, with a 5-cleft limb, which is valvate in aestivation. Stamens exserted; anthers peltate. Capsule not crowned, dehiscing at the dissepiment. Wing of seeds bifid at the base.

15 Exoste'mma. Calyx 5-toothed. Corolla with a terete tube, and a 5-parted limb, which is plicate in aestivation. Anthers linear, exserted. Capsules crowned, dehiscing at the cells. Seeds girded by a membranous entire border.

16 Dana'is. Flowers dioecious from abortion. Limb of calyx 5-toothed. Corolla funnell-shaped, with a slender tube, a villous throat, and a spreading 5-parted limb. Stamens exserted in the male flowers, and in the female inclosed and abortive. Style bifid at the apex. Capsule globose. Seed girded by a membranous border.


18 Bouya'rdia. Limb of calyx 4-parted (f. 89. a. b.). Corolla funnell-shaped, tubular (f. 89. c.), with a 4-parted (f. 89. a.) spreading short limb. Stamens adnate at the base to the tube, but free above the middle. Anthers linear, inclosed. Capsule membranous, globose, compressed. Seeds girded (f. 89. a.) by a membranous border.

19 Pinckneya. Calyx 5-parted; the fifth lobe expanded into a coloured leaf. Corolla with a cylindrical tube, and a 5-cleft limb, which is valvate in aestivation. Stamens inserted at the base of the tube, exserted; anthers peltate. Capsule compressed, 2-celled, dehiscing at the dissepiment. Seeds surrounded by a wing, which is emarginate at the base.

20 Calycophyllum. Limb of calyx truncate or bluntly toothed; one of the teeth expanded into a membranous stalked coloured leaf. Corolla campanulate or funnell-shaped; limb 5-parted. Stamens rising from the throat; anthers oval, exserted. Style ending in 2 reflexed stigmas. Capsule oblong. Seed fixed to the linear placenta, girded by a narrow wing.

Tribe II.

Gardenia'ceae. Fruit indehiscent (f. 94. b.), fleshy, usually 2-celled, rarely 1-celled. Seeds not winged. Albumen fleshy. —Trees or shrubs, with opposite leaves, and interpetiolar stipulas.

Subtribe I. Sarcoce'phalae. Flowers sessile, collected into a head (f. 90. a. b.) upon the receptacle. The fruit combined together into one (f. 90. b. c.).

21 Sarcoce'phalus. The calyces are closely joined together into a globose fleshy head (f. 90. b.); limb of calyx with a very short margin. Corolla funnell-shaped, 5-cleft. Anthers...


24 Caneúhora. Limb of calyx 5-6 toothed. Corolla with a somewhat campanulate tube, and a 5-6-lobed limb. Anthers 5-6, oblong, almost sessile, inclosed. Stigma bifid. Fruit bac- cate? 2-celled, many seeded. Ovala imbricate, inserted in spongy axillary placentas; but according to Rich the fruit is peashaped, 2-seeded, and crowned by the calyx.

Subtribe II. GARDENIEÆ. Flowers distinct, not joined together into a head.

25 Burcheília. Limb of calyx drawn out beyond the ova- rium, 5-cleft (f. 91. a.) beyond the middle. Corolla clavately funnel-shaped (f. 91. b.); throat naked: lobes imbricated, and twisted in aestivation. Filaments adnate to the tube (f. 91. b.) at the base; anthers inclosed. Stigma bearing 5 convex crests on the outside, and tufts of hairs. Berry crowned by the calyx, turbi-nately globose. Placentas adnate to the dissepiment. Seeds angular. Flowers capitulate.

26 Amaioua. Limb of calyx 6-toothed. Corolla salver- shaped, with a terete tube, which is longer than the calyx, and a 6-parted spreading limb. Anthers 6, inclosed, linear. Stigma clavate. Berry obovate-oblong, 2-3-celled. Seeds disposed in 2 rows in each cell, nearly orbicular, separated by the horizontal dissepiments.

27 Messeúnda. Limb of calyx 5-parted, deciduous, one of the outer lobes usually drawn out into a large petioleate coloured leaf. Corolla funnel-shaped, with a 5-parted limb and a villous throat. Anthers 5, sessile, linear. Stigma bifid. Fruit ovoid, fleshy, indehiscent, many seeded. Seeds scabrous. Placentas rising from the middle of the dissepiment, pedunculate, bifid at the apex. Flowers corymbose.


29 Cassetia. Limb of calyx short, entire. Corolla tubular, ragged on the outside, with a villous throat, and a 5-parted limb. Anthers 6, oblong, nearly sessile, inserted among the hairs in the throat. Stigma bifid. Berry globose, crowned, many seeded. Placentas fixed to the middle of the dissepiment.


32 Posoqueá. Limb of calyx short, 5-toothed. Corolla funnel-shaped, with a very long terete tube, a villous hardly dilated throat, and a 5-parted spreading limb. Stamens 5, rising from the throat, free, a little exserted. Style filiform, bifid at the apex. Berry ovate, crowned, succulent, many seeded.

33 Oxyanthus. Limb of calyx acutely 5-toothed (f. 92. a.). Corolla with a very long slender tube (f. 92. c.), a glabrous throat, and a regular 5-parted limb (f. 92. d.). Stamens 5, exserted (f. 92. f.), free at the throat; anthers acute. Style clavate at the apex (f. 92. e.). Fruit bac-cate.

34 Stylocoryna. Limb of calyx 5-toothed Corolla sal-ver-shaped or funnel-shaped, with a cylindrical tube, and a 5-parted limb. Stamens 5, inserted in the mouth of the corolla; anthers linear, very long. Stigma clavate (f. 92. g.). Berry globose, crowned by the calyx, almost dry. Placentas spongy, adnate to the middle of the dissepiment on both sides. Seeds angular.

35 Guínea. Limb of calyx truncate or subdeterminate. Corolla salver-shaped, the tube not exceeding the calyx, and the limb large and 5-parted. Anthers linear, exserted, sessile in the throat. Stigma clavate. Berry coriaceous, somewhat 4-celled, attenuated at both ends, crowned by the tubular calyx. Seeds many, horizontal, imbedded in pulp.

36 Gareia. Limb of calyx truncate or toothed (f. 93. a.). Corolla funnel or salver-shaped (f. 93. b.), having the tube much longer than the calyx; limb twisted in aestivation (f. 93. c.), 5-9-parted, spreading. Anthers 5-9, linear, nearly sessile in the throat. Stigma clavate, bifid. Berry fleshy, crowned by the calyx, incompletely 2-5-celled. Seeds minute, immersed in the fleshy parietal placentas.


38 Chapeliea. Limb of calyx 5-parted, permanent. Corolla with a slender tube, a 5-parted limb, and a villous throat. Stamens 5, nearly sessile, inclosed, inserted in the middle of the tube. Stigma bipartite. Fruit ovoid, rather fleshy, crowned by the erect, large, spreading limb of the calyx, many seeded. Seeds angular, and clothed with adpressed golden silky down.

39 Heinsia. Limb of calyx 5-parted, permanent. Corolla salver-shaped: tube terete, longer than the calycine lobes, very hairy in the upper part inside; limb 5-lobed: lobes undulated. Anthers 5, linear, sessile towards the top of the tube. Stigmas
2, linear. Fruit globose, crowned, dry, hard. Placentas 2, thick, adnate to the dissepiment. Seed nesting on the superficies of the placentas.

40 Menestòria. Limb of calyx 5-parted. Corolla with a long terete tube, an almost naked throat, and a 5-lobed limb. Anthers 5, oblong, sessile within the tube. Stigma bifid, inclosed. Fruit baccate, nearly dry, not crowned. Placentas adnate to the dissepiment, many seeded.

41 Helo'spora. Limb of calyx campanulate, 4-toothed. Corolla with a long tube, a naked throat, and a 4-lobed spreading limb. Anthers 4, linear, inclosed. Style 4-crested at the apex. Berry crowned, tetragonal, not divided into cells, but having the seeds immersed in the pulp, and disposed crosswise in a double series.

42 Hipp'otis. Limb of calyx sheath-formed, cleft on one side, and drawn out into a mucronate auricle on the other. Corolla funnel-shaped, with the tube a little incurved, and the limb blunt and 5-lobed. Stamens inserted in the middle of the tube; anthers ovate, inclosed. Ovarium girdled by a 5-crenate urceolus. Stigma of 2 adpressed lobes. Berry ovate, crowned. Seeds numerous, minute.


45 Pouche'tia. Limb of calyx small, 5-toothed. Corolla with a short obconical tube and a 5-lobed limb, which is twisted in restitution. Anthers 5, linear, sessile in the tube. Stigmas 2, exserted a little. Berry dry, obovate, crowned. Seeds 4-6 in each cell, deformed, clothed with silky down.

46 Cu'ria. Limb of calyx 5-parted, permanent. Corolla funnel-shaped, with a terete tube, which is a little longer than the calyx, and gradually widening to the throat; and a 5-parted recurved limb. Filaments very short; anthers oblong. Style 2-lobed at the apex, or 10-angled. Berry globose, crowned. Placentas spongy, central, few-seeded at maturity. Seed angular, wrinkled at the hilum.

47 Tare'na. Limb of calyx 5-parted, permanent, reflexed. Corolla unknown. Berry globose, 8-striped, crowned. Placentas central, spongy. Seed 4-6 in each cell, horizontal, siliquinate, rugged.


51 Petu'nja. Limb of calyx 4-toothed, permanent. Corolla funnel-shaped, with a short obconical tube, a 4-parted limb, and a villous throat. Stamens 4, a little exserted. Style villous; stigma bidentate. Berry globose, umbilicate. Seeds 2-4 in each cell, fixed to the upper part of the dissepiment, ex Roxb.; but according to Blume scale-formed, and imbricated downwards.

52 Higgi'nsia. Limb of calyx 4-toothed, permanent. Corolla funnel-shaped, somewhat campanulate, with a short tube, a 4-parted spreading limb, and a naked throat. Stamens inserted in the middle of the tube; anthers ovate, inclosed. Stigmas 2, exserted. Berry oblong, somewhat tetragonal, crowned, many seeded. Placentas adnate to the dissepiment.


54 Catesbe'a. Limb of calyx 4-toothed or 4-parted. Corolla funnel-shaped, with a very long tube, which is gradually dilated to the throat; and a 4-lobed limb. Stamens 4, inserted in the bottom of the corolla; anthers linear, exserted. Stigma bidentate. Berry globose or oblong, crowned. Placentas spongy, fixed to the top of the dissepiment. Seeds numerous, scale-formed, collected into two fascicles in each cell.

Tribe III.

Hedyot'id'ee. Fruit capsular (f. 95. k.), 2-celled, dehiscing at the cells; and rather membranous and indehiscent; cells many-seeded. Seeds not winged.—Shrubs or herbs, with opposite leaves. Stipulas interpetiolar.

Subtribe I. Rondelet'iae. Stipulas twin on both sides, combined or distinct, but neither sheathed nor divided into many bristles.—Trees or shrubs.

55 Condami'nea. Calyx campanulate (f. 95. a.), 5 crenate or 5-toothed; limb deciduous. Corolla funnel-shaped (f. 95. b.), with a somewhat curved tube, which is a little longer than the calyx, a dilated throat, and a 5-parted limb (f. 95. b). Stamens inserted above the middle of the tube (f. 95. c.), or near the throat; anthers oblong-linear, bifid at the base (f. 95. f.), length of corolla. Stigma 2-lobed (f. 95. e.). Capsule turbinate, truncate, opening in the middle of the cells (f. 95. k.). Seeds wedge-shaped (f. 95. l.).

56 Asek'is. Limb of calyx superior, 5-parted. Corolla cup-shaped...
shaped, with a 5-lobed limb and a bearded throat. Stamens 5, free to the base of the corolla, exserted. Stigma divided. Ovary 2-celled, many ovulate.

57 Macropse'num. Limb of calyx minute, 5-toothed, permanent. Corolla tubular, with a widened throat and a 5-lobed limb; tube pentagonal at first. Stamens 5, free from the corolla, except at the very base, hairy above the middle; anthers oblong, inclosed. Stigma obtuse, 2-lobed. Capsule 2-valved; valves dehiscing at the sides. Seeds acute, imbricated.

58 Chima'rrhis. Limb of calyx almost wanting, entire. Corolla with a short tube and a 5-cleft spreading limb: lobes hairy in the middle outside. Stamens 5, inserted at the top of the tube, hairy at the base; anthers oval. Capsule obovate or turbinate, crowned; valves semibifid. Seeds many.

59 Augú'stea. Limb of calyx 5-parted. Corolla funnel-shaped, much longer than the limb of the calyx; tube widened at the apex, a little incurved; limb 5-parted, spreading. Anthers 5, sessile in the sinuses of the corolla, and shorter than its lobes. Style hairy at the base; stigma bifid. Capsule oblong, separable from the calyx, and naked at maturity, but crowned. Seeds many, tetragonal.

60 Portla'ndia. Limb of calyx 5-parted; tube 5-nerved. Corolla large, funnel-shaped, with a short tube, a wide throat, and a bluntly 5-lobed limb. Stamens 5, inserted in the bottom of the throat; anthers long, a little exserted. Stigma undivided. Capsule obovate, crowned, and retuse at the apex; valves dehiscing at the apex. Placentas connivent. Central. Seeds scabrous.

61 Békia. Calyx with an 8-ribbed tube, and a 4-parted limb. Corolla clavate, tetragonal, with a 4-cleft limb. Anthers 4, linear, not exceeding the limb. Capsule ovo-angulate, at length separating from the calyx, 2-celled or nearly 4-celled; valves bifid at the apex. Placentas narrow. Seeds small, crested on the margins.

62 Isido'rea. Limb of calyx 5-parted. Corolla tubular, pentagonal, with a naked throat, and a 5-cleft limb. Stamens inserted in the very base of the corolla, and equal in length to it, monadophilous and hairy at the base; anthers oblong, obtuse. Stigma bilamellate. Capsule nearly globose, pentagonal, at the apex, crowned. Coccule dehiscence, many seeded. Seeds angular, furnished with a cup-formed membrane at the base.


64 Rosè'del'tia. Limb of calyx 4-5-parted, permanent. Corolla with a cylindrical tube and a 4-5-cleft spreading limb. Anthers 4-5, sessile on the top of the tube, inclosed. Stigma bifid. Capsule globose, crowned; valves cleft in the middle. Placentas central. Seed angular, few in the cells at maturity.

65 Wenda'ndia. Limb of calyx very short, permanent, 4-5-toothed. Corolla with a terete tube, which is longer than the calyx, and a 4-5-lobed spreading limb. Stamens 4-5, rising from the top of the tube; anthers oblong, exserted. Stigma bifid. Capsule ovate-globose, crowned; dehiscing at the cells at top, many seeded.

66 Xanthophy'tum. Limb of calyx 4-5-cleft. Corolla funnel-shaped, with a short tube, a villous throat, and a 4-5-cleft spreading limb. Stamens 4-5, exserted, inserted in the throat, connivent. Style perforating the disk of the ovary. Stigma 2-lobed, gaping. Drupae didymous, crowned, divided into 2 many seeded cells. Placentas prominent, fixed by the cells on both sides. Seeds angular, minute.

67 Carphá'lea. Limb of calyx 4-parted, permanent. Corolla with a long filiform tube, a ventricose hairy throat, and a 4-parted limb. Anthers oblong, almost sessile, inclosed. Stigma bifid. Capsule crowned, dehiscing at the cells; valves semi-septiferous; cells many seeded.


69 Viré'cta. Limb of calyx divided into 5 setaceous lobes. Corolla funnel-shaped, with an obconical tube, a naked throat, and having the limb divided into 5 linear-oblong ciliated lobes. Stamens 5, much exserted; anthers linear, occasional, bifid at the base. Stigma undivided. Capsule globose, dehiscing at the cells, at first crowned. Seeds numerous, 4-5-sided, a little muricate. Hairy half herbaceous plants.


71 Augoste'mma. Limb of calyx 3-4-5-toothed. Corolla rotate, spreading, 3-5, rarely 3-4-parted. Stamens alternating with the lobes of the corolla. Anthers large, exserted, cohering at the apex. Style perforating the fleshy disk; stigma globose. Capsule crowned, dehiscing radially at the apex. Placentas convex, adnate to the disseminum. Seeds numerous, angular.—Herbs.


74 Dente'lla. Limb of calyx 5-cleft. Corolla funnel-shaped, 5-cleft, with a hairy throat; lobes furnished with one tooth on each side. Anthers 5, inclosed, nearly sessile. Stigmas 2. Capsule or berry dry, almost indehiscent, nearly globose, crowned. Placentas fleshy, prominent on both sides within the cells. Seeds small, ovate.—Creeping herbs.
TRIBE IV

HAMELIEÆ. Fruit baccate, many celled (f. 98. f. h.); cells many seeded. Albumen fleshy. — Shrubs or trees, with opposite or verticillate leaves, and interpetiolar stipules.

87 Hop'pe. Limb of calyx very short, 4-toothed (f. 98. a.). Corolla subrotate (f. 98. c.), 4-cleft. Stamens 4, inserted in the throat (f. 98. b.); anthers ovate, inclosed, or nearly so. Stigma thick or 4-lobed. Fruit crowned (f. 98. g.), 4-celled (f. 98. h.).

88 Sab'ceæ. Limb of calyx 4-parted. Corolla salver-shaped, with a long slender tube, a 4-parted limb, and a hairy throat. Stamens 4-5, inclosed, or nearly so. Style 4-5-lobed at the apex. Berry globose, crowned, 4-5-celled.

89 Olo'styla. Limb of calyx very short, 4-toothed. Corolla subrotate, with a short tube, which is pilose inside, and 4 reflexed lobes. Stamens 5, inserted in the throat; anthers linear, exerted. Style undivided. Berry crowned, 4-celled.


3 x 2


96 Schradera. Limb of calyx truncate or subdenticulated. Corolla funneled-shaped, with a terete tube, a dilated pilose throat, and a 5-8-lobed spreading limb, each lobe usually furnished on the inside with a retrograde callous tooth. Anthers 5-8, linear, nearly sessile, inserted in the throat, hardly exserted. Stigma bifid or quadrifid. Berry pea-formed, 3-4-sided, crowned, 2-4-celled. Seeds imbedded in the pulp.

97 Brignolia. Limb of calyx 4-toothed; teeth unequal. Corolla with a short tube, and a 6-lobed limb, which is very hairy inside as well as the throat. Stamens 6, inserted in the tube; anthers linear. Stigma capitate, undivided. Fruit globose, fleshy, crowned.

98 Patima. Limb of calyx tubular, with a sinuated, very short, 5-toothed border. Corolla tubular, 5-parted, densely clothed with silky down inside. Stamens 5, inserted in the tube; anthers oblong-cordate, inclosed. Style undivided. Berry roundish, crowned, 4-6, but usually 5-celled. Seeds fixed to a fleshy, 2-lobed placenta.

99 Polyphragmon. Limb of calyx entire or 5-toothed. Corolla salver-shaped, bristly, with a terete tube, and a 10-parted limb. Stamens 10, inserted in the middle of the tube; anthers linear, inclosed. Stigmas numerous. Berry globose, 10-20-celled, with 1 series of seeds in each cell.

100 Morelia. Limb of calyx erect, nearly entire. Corolla short, tubular, with a 5-parted limb, which is imbricate in estivation. Stamens 5, inserted in the throat, exserted; anthers linear. Style fusiform towards the apex; stigma bifid. Fruit fleshy, 4-5-celled; cells 2-3-seeded.

B. Cells of fruit usually 1-seeded, rarely 2-seeded.

Tribe VI.

Coriariae. Fruit baccate, of many cells; cells 1-seeded. Differs from the neighbouring tribes in the cells being 1-seeded. Shrubs with opposite leaves, and broad interpetiolar stipulas.

101 Thicalysia. Flowers hermaphrodite.

102 Cordieria. Flowers unisexual.

Tribe VII.

Guttardaee. Fruit drupaceous (f. 101 d. f. 103 f.) composed of 2-5 1-seeded pyrene or nuts (f. 103 g). Seeds terete elongated, usually erect. Albumen fleshy.—Shrubs or small trees. Leaves usually opposite, rarely 3 in a whorl, with interpetiolar stipulas.

Subtribe I. Morindeae. Flowers and fruit concreted, or joined together into a head.

103 Morinda. Character the same as that of the subtribe.

Subtribe II. Guettardeae. Flowers distinct, not concrete. 104 Myrmecodia. Limb of calyx tubular; with an entire border. Corolla funnel-shaped, 4-cleft, the throat closed from arched scales or hairs. Stigma simple (Jack.), or quadrifid (Blum.). Drupe baccate, composed of 4 triquetrous pyrene.


106 Hypobuthrum. Limb of calyx 4-toothed. Corolla small, subcampanulate, with a villous throat, and a 4-cleft spreading limb. Stamens 4, inserted in the mouth of the tube. Stigma bifid. Drupe crowned, 2-celled; cells containing 2 pyrene.

107 Nertera. Limb of calyx small, 4-toothed. Corolla funnel-shaped, sub-campanulate, 4-lobed (f. 100 b) glabrous inside. Stamens arising from the bottom of the corolla (f. 100 c), adnate to the tube; anthers roundish, hardly exserted. Stigmas 2 (f. 100 d), hairy. Berry roundish, umbilicate, containing 2-4 pyrene. Herbs creeping.

108 Mitchella. Limb of calyx large, 4-toothed. Corolla funnel-shaped, with a terete tube: having the throat as well as the lobes hairy inside. Stamens adhering to the tube almost to the throat; anthers ovate, hardly exserted. Stigmas 4, inclosed. Berry nearly globose, crowned, containing 4 pyrene. Creeping herbs.

109 Mephitydium. Limb of calyx 3-6-parted or toothed. Corolla funnel-shaped, 4-6-cleft, usually hairy. Stamens 4-6, inserted towards the throat; anthers linear, exserted, or inclosed. Stigmas 4-9. Drupe baccate, crowned, containing 4-9 pyrene.


111 Guettarda. Limb of calyx permanent or deciduous, truncate or irregularly toothed (f. 101 a). Corolla salver-shaped, with a cylindrical tube (f. 101 c), and a 4-9-lobed limb (f. 101 b). Anthers 4-9, inserted in the throat, sessile, inclosed. Stigma capitate, rarely 2-lobed. Drupe crowned (f. 101 d), containing a 4-9-celled angular putamen (f. 101 e); cells 1-seeded.

112 Malanesia. Limb of calyx 4-toothed. Corolla small, nearly rotate, with a very short tube, and a 4-lobed spreading limb. Stamens exserted; anthers roundish. Drupe dry, crowned, containing a 2-celled putamen; cells 1-seeded.
113 **Antirhoe'a**. Limb of calyx campanulate, 4-toothed. Corolla tubular, 4-cleft. Anthers nearly sessile in the throat, not exerted. Stigma bifid. Drupe sub-baccate, crowned, containing a 2-celled putamen; cells 1-seeded.

114 **Stenostomum**. Limb of calyx small, 5-toothed. Corolla funnel-shaped, having the tube widened at the throat, and a 5-lobe lim. Anthers 5, oblong, hardly exerted. Stigma 2-lobed. Drupe ovate-oblong, crowned, containing a 2-celled putamen; cells 1-seeded.


116 **Timon'ius**. Limb of calyx tubular, truncate, 2-6-toothed. Corolla tubular, salver-shaped, with a 4-6-parted spreading limb, and a naked throat. Stamens 4, almost sessile, inserted in the upper part of the tube; anthers 4, oblong-heart-shaped. Stigmas 2, digitatedly 5-cleft. Druple globose, crowned, containing 7-25 bony 1-seeded nuts.

117 **Hamiltonia**. Limb of calyx 5-parted. Corolla funnel-shaped, with a long tube (f. 102. b.), and a 5-lobe lim (f. 102. c.). Stamens 5, inserted in the throat, inclosed. Stigma 5-cleft. Capsule crowned, dehiscing at the apex, containing 5 1-seeded pyrenae.

118 **Leptode'rmis**. Calyx inclosed by a 2-leaved calyxiform involucrum; limb 5-lobe. Corolla funnel-shaped, scabrous, with a terete tube, which is pilose inside, and a 5-lobe cuspidate limb. Stamens 5, very short, inclosed. Stigma 5-cleft. Fruit 5-celled, 5-seeded?

119 **Psathu'ra**. Limb of calyx campanulate, 5-6-toothed. Corolla bearded inside, with a short tube, and a 5-6-lobe spreading limb. Anthers 5-6, nearly sessile in the throat. Stigma 5-6-lobe. Berry globose, crowned, containing 6 pyrenae.

120 **Myonima**. Limb of calyx small, bluntly 8-toothed. Corolla with a short tube, and a 4-parted limb. Stamens 4; anthers oblong, exerted. Stigmas 4, approximate. Berry globose, not crowned, containing 4 pyrenae.

121 **Pyro'stria**. Limb of calyx 4-5-toothed. Corolla sub-campanulate, 4-5-cleft; throat tomentose. Stamens 4-5, hardly exerted. Stigma capitulate, bifid. Fruit pear-shaped, not crowned, containing 4-8 bony nuts.

122 **Oc'tavia**. Limb of calyx hardly any, truncate. Corolla unknown. Ovarium crowned by a fleshy disk, which is perforated in the middle. Drupes fleshy, globose, not crowned, containing 8 pyrenae.

123 **Litosae'nthes**. Limb of calyx small, 4-toothed. Corolla globose, with a villous throat, and a short, spreading 4-cleft lim. Stamens 4, inclosed; anthers linear. Stigma 4-toothed. Drupe succulent, obovate, umbonate, containing 4 nuts.

124 **Erythalis**. Limb of calyx short, with a 5-10-toothed border. Corolla rotate, without a tube, 5-10-parted. Stamens 5-10, hardly adnate to the corolla at the base; anthers linear. Stigma bilamellate. Drupe globose, crowned, containing 5-10 pyrenae.


127 **Gyno'chtes**. Limb of calyx short, quite entire. Corolla 4-5-parted, villous inside; lobes convolute below and spreading above, each furnished with an inflexed point at the apex. Stamens 4-5, inclosed, inserted in the base of the corolla. Stigma bifid, warted. Drupe globose, umbilicate, containing 4 pyreneae.

128 **Celsospe'rum**. Limb of calyx quite entire, deciduous. Corolla with a short tube, and a 4-6-cleft, spreading limb. Stamens 4-5, exerted, inserted in the throat; anthers linear, incumbent. Stigma bifid. Drupe globose, umbilicate, containing 4 pyreneae.

129 **Anglyan'thus**. Limb of calyx 5-parted (f. 103. a.). Corolla tubular (f. 103. b.), incurved; limb regular, 5-cleft (f. 103. c.); lobes cuspidate. Anthers 5, sessile in the throat (f. 103. c.). Stigma 5-cleft (f. 103. d.). Fruit 5-celled (f. 103. e.); cells 1-seeded.

130 **Phalla'ria**. Calyx with a globose tube, and an acutely 5-toothed lim. Corolla tubular, 5-cleft; lobes spreading or reflexed. Anthers 5, ovate, at the throat. Style filiform, crowned by an elongated thick stigma. Ovarium 2-seeded.

131 **Hylacium**. Limb of calyx 5-toothed. Corolla funnel-shaped, with a long tube and 5 roundish reflexed lobes. Anthers 5, almost sessile in the throat. Style thick at the base, 5-furrowed. Stigma cylindrical, 5-furrowed. Drupe dry, containing a 2-celled rugged nut: one of the cells usually abortive.

132 **Cuvier'a**. Limb of calyx 5-parted. Corolla campanulate, 5-cleft, spinaceous at the apex. Anthers 5, at the throat, inclosed. Stigma dilated, with a reflexed margin. Fruit baccate, 5-celled; cells 1-seeded.

133 **Donidia**. Limb of calyx very short, hardly 5-toothed. Corolla with a short broad tube, beset with a row of stiff retrograde hairs inside, and a 5-lobe limb. Style tumid in the middle, and hispid. Ovarium 1-celled? many seeded.


135 **Strep'mpia**. Limb of calyx campanulate, 5-cleft beyond the middle. Corolla somewhat campanulate, profoundly 5-cleft, with hardly any tube. Stamens 5, inserted in the base of the tube of the corolla, connate. Stigma bifid. Drupe pea-formed, umbilicate, containing a 2-celled globose nut, rarely 1-celled.

136 **Billio'tia**. Limb of calyx 5-7-parted. Corolla salver-shaped, with a 5-7-parted limb, and the throat bearded by bristles inside. Stamens 5-7, adnate to the tube. Ovarium covered by a nectariferous urceolus at the apex. Style 1, crowned by 4 stigmas. Drupe 1-seeded by abortion.
Tribe VIII.

Pederieæ. Fruit 2-celled, indehiscent, hardly fleshy, the rind easily separated from the seeds or carpels. Carpels compressed, 1-seeded (f. 104. f.), hanging from a filiform axis. Albumen fleshy.—Climbing shrubs, with opposite leaves, and interpetiolar stipules.

137 Lygodysio'dea. Limb of calyx 5-toothed (f. 104. a.). Corolla having the tube much longer than the teeth of the calyx (f. 104. b.), with a hairy throat and a 5-lobed limb (f. 104. c.); lobes revolute. Anthers sessile within the tube (f. 104. e.). Stigmas 2, slender (f. 104. d.). Fruit indehiscent, crowned (f. 104. g.), containing 2 carpella.

138 Lec'ontea. Limb of calyx 5-parted. Corolla with a longish terete tube, a 5-parted limb, and a naked throat. Anthers almost sessile in the throat, exserted. Stigmas 2, linear. Fruit containing 2 winged carpella.


Tribe IX.

Coaffeææ. Fruit 2-celled (f. 105. k, f. 107. c.), baccate, containing 2 1-seeded bony nuts (f. 107. d.), which are flat inside, and usually marked by a furrow on the outside; rarely only containing 1 nut from abort. Albumen fleshy.—Trees or shrubs, with opposite leaves. Stipulas interpetiolar, 2 on each side, combined or distinct.

Subtribe I. Coffeeææ. Flowers distinct, not joined together.


142 Canthan'um. Limb of calyx 4-5-toothed. Corolla with a short tube, a bearded throat, and a 4-5-lobed spreading limb. Stigma undivided, globose or mitre-formed. Berry globose or didymous, crowned.


144 Psy'drax. Limb of calyx 5-toothed, deciduous. Corolla with a short tube, a hairy throat, and a 5-lobed reflexed limb. Stamens inclosed. Style exserted; stigma bilamellate. Berry fleshy, obovate, areolate at the apex.


146 Nesce'dia. Limb of calyx hardly any, quite entire. Corolla with a short tube, a 5-cleft limb, and a naked throat. Stamens 5, inclosed, nearly sessile, inserted in the throat; anthers linear, acute. Stigmas 2, face to face. Ovarium 2-celled.

147 Diplo'stora. Limb of calyx subcampanulate, 4-toothed. Corolla with a broad tube, a pilose throat, and a 4-lobed spreading limb. Stigma bifid. Ovarium 2-celled. Fruit unknown.

148 Epithi'nia. Limb of calyx cylindrical, hardly 4-toothed. Corolla tubular, with a spreading 4-parted acute limb, and a villous throat. Stamens 4, exserted; anthers linear. Style exserted; stigma bifid. Berry 8-furrowed.

149 Sidero'dendron. Limb of calyx hardly any, somewhat 4-toothed. Corolla with a long terete tube, a 4-lobed obtuse limb, and a glabrous throat. Anthers 4, oblong, sessile at the throat. Style bifid at the apex. Berry dry, subglobose, not crowned.

150 Euma'chia. Limb of calyx 4-toothed, deciduous. Corolla funnel-shaped, with a short tube, a naked throat, and a 4-parted spreading limb. Stamens 4, inserted at the bottom of the tube; anthers oblong, inclosed. Stigma bifid. Berry globose, not crowned.

151 Declie'vixia. Limb of calyx 4-parted (f. 105. b.). Corolla funnel-shaped (f. 105. g.), with a terete tube (f. 105. f.), a bearded throat, and a 4-lobed reflexed limb. Stamens 4, inserted in the throat; anthers linear, incumbent, exserted (f. 105. c.). Stigma bifid (f. 105. c.). Berry nearly dry, somewhat didymous, compressed (f. 105. k.), crowned (f. 105. b.).

152 Tebte'ena. Limb of calyx 4-parted. Corolla short, funnel-shaped, 4-cleft; lobes spreading; throat beset with long hairs. Stamens inserted in the upper part of the tube, exserted. Style inclosed; stigmas 2. Drupe oblong, compressed, crowned.

153 Choco'eca. Limb of calyx 5-toothed. Corolla funnel-shaped, with an obconical tube or throat, and a 5-lobed acute limb. Stamens 5, downy, hardly adnate at the bottom of the corolla; anthers linear, inclosed. Style clavate or 2-lobed at the apex. Berry somewhat didymous, compressed, crowned.

154 Mar'ca'ris. Limb of calyx somewhat turbinate, semi-quinquifid. Corolla funnel-shaped, with an obconical tube, which is bluntly 5-toothed or 5-lobed at the apex. Stamens inserted into the middle of the tube, inclosed; anthers ovate. Stigma undivided or somewhat 2-lobed. Berry globose, crowned.

155 Salde'nia. Limb of calyx somewhat campanulate, obsolescently repand. Corolla with a short tube, an acute 4-parted limb, and a hairy throat. Stamens 4, inserted in the throat, hardly exserted; anthers oblong, nearly sessile. Fruit ovoid, compressed, crowned, drupaceous, 1-celled and 1-seeded by abortion, small.

156 Sco'losanh-thus. Lobes of calyx 4, linear-lanceolate. Corolla tubular, tetragonal before expansion. Stamens adnate to the lower part of the tube, downy, not exserted; anthers linear. Stigmas 2. Drupe nearly globose, crowned, containing a 2-celled 2-seeded nut.

157 Chome'lia. Limb of calyx 4-toothed. Corolla salver-shaped, with a long slender tube, a glabrous throat, and a 4-lobed limb. Anthers 4, almost sessile in the throat. Style bifid at the apex, situated among the anthers. Drupe ovate, crowned, containing a 2-celled 2-seeded nut.

158 Bacònia. Limb of calyx bluntly 4-cleft. Corolla fun-
nel-shaped, with a short terete tube, a bearded throat, and 4 oblong lobes, which are longer than the tube, and twisted in aestivation. Anthers 6, linear, almost sessile, exserted. Style exserted. Stigma undivided. Berry dry, 2-celled, 2-seeded.

159 Ixóra. Limb of calyx small, 4-toothed (f. 106. a.). Corolla salver-shaped (f. 106. b.), with a slender terete tube (f. 106. c.); and a 4-parted spreading limb (f. 106. b.). Anthers 4, almost sessile in the throat. Style bifid (f. 106. c.) at the apex, equal in length to the corolla or a little longer. Berry drupaceous, crowned, nearly globose.

160 Páve'tta. All as in Ixóra, but differs in the style being exserted beyond the corolla, and clavate, undivided, or hardly bifid at the apex.


162 Couss'a'rea. Limb of calyx tubular, sinuately 4-toothed. Corolla with an elongated terete tube, which is hardly subuliform under the apex, and a glabrous throat. Stamens 4, inserted in the upper part of the tube, inclosed; anthers oblong-linear. Stigma bipartite, hardly exserted. Berry ovate-globose, hardly fleshy, crowned, 1-celled, 1-seeded.

163 Polýózus. Limb of calyx absolutely denticulated, deciduous. Corolla with a cylindrical tube, which is shorter than the 4-5 lobes of the limb, and a villous throat. Anthers hardly exserted. Style short; stigma bifid. Berry drupaceous, nearly globose, not crowned.


166 Fara'mea. Limb of calyx very short, 4-toothed, or entire. Corolla with a short terete tube, a naked throat, and 4 spreading oblong or linear lobes. Anthers 4, sessile, inclosed. Style short, bifid at the apex. Berry dry, marked by 8 crenæ at the apex, 1-celled by abortion at maturity.

167 Strempel'ia. Limb of calyx campanulately tubular, 4-5-toothed. Corolla tubular, with a 4-5-parted spreading limb, and a naked throat. Stamens inserted in the middle of the tube, pilose in the free part; anthers linear, inclosed. Fruit ovoid, crowned.

168 Coff'e'a. Limb of calyx small, 4-5-toothed (f. 107. a.). Corolla tubular, funnel-shaped, with a 4-5-parted spreading limb (f. 107. b.). Stamens 4-5, inserted in the middle of the upper part of the tube, exserted or inclosed. Style bifid at the apex. Berry umbilicate (f. 107. b.), not crowned.

169 Anther'ea. All as in Psychótria, but differs in the corolla being rotate and 5-parted; in the anthers being sagittate at the base and caduate at the apex; in the style being subulate, and longer than the corolla, and in the stigma being simple.


171 Psychótria. Limb of calyx 5-lobed or 5-toothed. Corolla funnel-shaped, short, 5-cleft; limb spreading or recurved; throat bearded or glabrous. Stamens 5: anthers exserted or inclosed. Stigma bifid. Berry drupaceous, crowned.


173 Palico'rea. All as in Psychótria, except the corolla, which is tubular and cylindrical, and a little gibbous at the base or curved, 5-cleft, bearded beneath the middle inside. The teeth of the calyx, and the lobes of the corolla, sometimes rather unequal.

174 Chasa'lla. Limb of calyx urceolate, rather tubular, entire or 5-toothed at the apex. Corolla with an elongated equal tube, and 5 short acutish erect or spreading lobes. Anthers 5, inserted in the mouth or top of the tube, inclosed or a little exserted. Stigmas 2. Berry ovate, crowned, hardly dry.

175 Jaćkia. Limb of calyx unilateral, trifid at the apex. Corolla funnel-shaped, with a filiform tube and a campanulate 5-parted limb. Anthers a little exserted, filiform, sessile at the throat. Style exserted, pilose in the middle; stigma ovate, globose, longitudinally furrowed.

Surthræ II. Cephæ'l'is. Flowers disposed in heads, involucrated by bracteas.


177 Carap'chea. All as in Cephæ'l'is, but the anthers and stigmas are a little exserted. Berry dry, salate, divisible into two parts, crowned. The nuts are smooth on the outside, not as in Cephæ'l'is striated on the outside.


180 Pata'bæa. Limb of calyx very short, entire, or 4-toothed, rarely 5-6-toothed. Corolla with a short, nearly terete tube, and 4-6 spreading lobes. Anthers 4-6, sessile within the throat. Stigma bluntly bifid. Berry globose, crowned, smooth, 2-celled, 2-seeded.

181 Salzma'nnia. Limb of calyx bluntly 4-toothed or sinusated. Corolla with a short tube and a 4-lobed limb. Stamens with very short filaments, and very long linear anthers. Style undivided. Berry dry, crowned, compressed, 1-celled and 1-seeded from abortion.
Tribe X.

Spermacoceae. Stigma bilamellate (f. 189. b.). Fruit dry, and rather fleshy, usually composed of 2 1-seeded mericarps, rarely of 3-4, which are sometimes joined together and sometimes separating, indehiscent, but sometimes dehiscing in various ways. Albumen between fleshy and horny. — Shrubs or herbs. Leaves opposite. Stipulas membranous at the base, and usually divided into many bristles at the apex.

Subtribe I. Cephalantheae. Flowers and fruit sessile, densely aggregate, seated on a globose receptacle. Fruit divided into two parts. Shrubs.


Subtribe II. Euspermacoceae. Flowers distinct. Fruit dry, usually divided into 2 parts, and sometimes in 3 or 4 parts. — Usually herbs, rarely shrubs.

183 Democrita. Lobes of calyx 5, lanceolate, acute, stiff. Corolla, stamens, and style unknown. Fruit 2-celled, 2-seeded when young, but becoming 1-celled from the dissepiment having vanished at maturity. Seeds free within the pericarp. — A shrub.

184 Octodon. Limb of calyx with 8 very short teeth. Corolla campanulate, 4-cleft, beset with adpressed hairs inside, which are tipped with glands. Stamens inserted in the bottom of the tube. Stigma globular. Capsule turbinate, obsolescently tetragonal, 2-celled, 2-valved, dehiscing at the dissepiment.

185 Borreia. Limb of calyx 2-4-toothed. Corolla salver-shaped or funnel-shaped, 4-lobed. Stamens 4, exerted or inclosed. Stigma bifid or undivided. Capsule crowned, 2-celled, dehiscing at the dissepiment when mature; cocciula bursting by a longitudinal chink inside.

186 Spermacoce. Limb of calyx 2-4-toothed (f. 108. a.), with sometimes accessory teeth. Corolla salver-shaped or funnel-shaped, 4-lobed (f. 108. c.). Stigma bifid or undivided (f. 108. e.). Capsule crowned (f. 108. f.), 2-celled: nuts divisible into two parts from the apex, one open and the other closed.

187 Hexasepalum. Limb of calyx 6-parted. Corolla campanulate funnel-shaped, with an obconical tube and 4 lanceolate lobes. Stamens 4, shorter than the lobes of the corolla. Fruit oblong, dry, divisible into two parts at the dissepiment; the dissepiment being double the nuts are both closed.

188 Dioenia. Calyx with a 2-4-toothed limb, rarely more. Corolla funnel-shaped, with a 4-lobed limb. Stamens 4, exerted or inclosed. Style bifid or undivided. Fruit crowned, divisible into two parts: the parts indehiscent.

189 Triodon. Limb of calyx 2-4-toothed, with sometimes other accessory teeth. Corolla short, funnel-shaped, 4-cleft. Stigma bifid. Capsule papery, crowned, 2-celled: nuts 2, indehiscent, having the axis tridentate and remaining after the nuts have fallen.

190 Crussea. Limb of calyx constricted above the ovarium, profoundly cleft into 4 linear lobes, and 4 accessory small ones. Corolla salver-shaped, with a long tube, a glabrous throat, and 4-lobed limb. Stamens exerted. Style exerted, bifid at the apex. Fruit of 2 indehiscent nuts, adhering to a flat membranous permanent axis, but at length separating from it.


192 Knoxia. Teeth of calyx 4, unequal. Corolla salver-shaped, with a terete tube, a usually bearded throat, and a 4-lobed limb. Anthers at the throat. Stigma 2-lobed. Fruit 2-celled: the 2 nuts usually separating from the base to the apex at the dissepiment. Seed ovate-triquetrous.


194 Mitracarphus. Limb of calyx 4-toothed; teeth unequal. Corolla salver-shaped, with a terete tube, having a circular line of hairs near the base inside, a glabrous throat, and a 4-lobed limb. Anthers exerted or inclosed. Stigma bifid. Capsule membranous, crowned, 2-celled, circumcised about the middle.

195 Cruckshanka'sia. Limb of calyx 4-toothed: teeth usually having an accessory tooth on each side, 1 or 2 of which are usually expanded into roundish wings. Corolla salver-shaped, with an elongated tube, a 5-cleft spreading limb, and a glabrous throat. Stamens 5, exerted, inserted in the mouth of the corolla. Anthers linear-oblong, fixed by the base. Stigma bifid, pilose. Capsule globose, subdidiomous, crowned, 2-celled, 4-valved: cells 2-seeded. Seed ovate, tubercular.


198 Gallonéia. Limb of calyx 5-7-toothed; teeth unequal. Corolla funnel-shaped, with a terete tube, and a 5-7-lobed limb. Stamens 5-7, exerted from the throat. Style filiform: stigma 2-lobed. Fruit ovoid, containing 2 separable indehiscent nuts.

199 Machaonía. Limb of calyx small, 5-parted. Corolla funnel-shaped, 5-cleft, with a short tube, and a villous throat. Stamens 5, inserted in the throat; anthers subulate, exerted. Stigma bipartite. Capsule somewhat tetragonal, crowned, containing 2 1-seeded indehiscent nuts, which are fixed to the top of a linear axis. — Shrubs or trees.
Subtribe III. Putorieae. *Fruit rather fleshy, not divisible.*

—Shrubs and herbs.

200 *Serissa.* Limb of calyx 5, rarely 4-cleft, with sometimes accessory teeth. Corolla funnel-shaped, having the tube hairy inside, and the limb 5, rarely 4-parted; lobes induplicate in estivation, hence somewhat trifid at the apex. Stamens 5, rarely 4; anthers linear, exserted. Style inclosed, bifid at the apex. Berry nearly globose, 2-celled, 2-seeded.

201 *Ernônea.* Limb of calyx 4-6-parted, permanent. Corolla salver-shaped, with a terete subtetragonal tube, a naked throat, and 4-6 lanceolate revolute lobes. Stamens longer than the corolla; anthers acute. Style exserted; stigma emarginate. Berry roundish, crowned, 2-celled, 2-seeded.


**Tribe XI.**

Anthospermee. *Flowers sometimes dioecious. Corolla rotate (f. 110. b.).* Styles 2, separate to the base, ending each in an elongated plumose stigma (f. 110. c.). Fruit constantly composed of 2 indehiscent 1-seeded mericarps at maturity (f. 110. g,f.), which are easily separated. *Alumen fleshy.—Herbs or subshrubs. Leaves opposite or in whorls. Stipulas small, 1-3-toothed, rather adnate to both sides of the petioles.*

207 *Capròsa.* Limb of calyx 4-7-toothed, short. Corolla campanulate turbinate, with a short broad tube, a naked throat, and 4-7 acute lobes. Stamens 4-7. Style nearly bipartite to the base, pilose, exserted. Berry obovate, pulpy, containing 2-3 bony indehiscent nuts.

208 *Phyl’lis.* Limb of calyx obsolete. Corolla tubular, with a 5-lobed spreading limb. Stamens 5. Style almost wanting; stigmas 2. Capsule obovate, compressed, naked at the apex, divisible into two parts; mericarps hanging from the central axis.

209 *Galófina.* Flowers hermaphrodite. Limb of calyx very minute, hardly any. Corolla subrotate, 4-parted. Stamens inserted in the bottom of the corolla. Styles 2, ending in very long pilose stigmas. Fruit didymous; nuts separable, indehiscent, warted.

210 Anthospermum. *Flowers dioecious, rarely polygamous or hermaphrodite. Limb of calyx small, 4-5-toothed (f. 110. a.), deciduous. Corolla with a short tube, and a 4-5-parted limb (f. 110. b.), which is longer than the tube. Stamens 4-5, inserted at the base of the tube (f. 110. d.); anthers oblong, terete. Stigmas 2, very long (f. 110. c.), hairy. Fruit constantly of 2 easily separated nuts (f. 110. g.).

211 Amdra’ria. *Flowers dioecious, with the same structure as Anthospermum, but the fruit is falsely 3-4-celled; mericarps joined by a concave commissure, hence the central cell is empty, and the 2 lateral ones filled.*

**Tribe XII.**

Stella’xe. *Flowers hermaphrodite, rarely unisexual. Corolla rotate or funnel-shaped; lobes valvate in estivation. Styles 2, distinct from the base, or joined together more or less; stigmas capitate. Fruit constantly of 2 indehiscent 1-seeded mericarps. Seed hardly distinct from the calyx and pericarp. *Alumen horny.—Sometimes subshrubs, but usually herbs. Leaves opposite, bearing buds in the axils, having 1-2 or 3 leaf-formed stipulas, on each side, forming whorls along with them. The leaves are only to be distinguished from the stipulas by being furnished with axillary buds.*

212 She’radia. Limb of calyx 4-6-toothed, permanent. Corolla funnel-shaped, with a terete tube, and a 4-lobed limb. Stamens 4. Style one, 2-lobed. Fruit crowned, dry, bipartite.

213 Aspe’rula. Limb very short, 4-toothed, deciduous, or obsolete. Corolla funnel-shaped, rarely campanulate, 4-cleft, rarely 3-cleft. Styles 2, joined at the base, and sometimes nearly to the apex. Fruit didymous, not crowned, almost dry.

214 Crucianella. Limb of calyx none. Corolla tubular, elongated, funnel-shaped, 4-5-lobed; lobes usually drawn out into a bristle-like inflexed appendage. Stamens 4-5, inclosed. Style 2-lobed at the apex. Fruit bipartite, not crowned.


217 Calliphéltis. Limb of calyx not perspicuous. Corolla 4-parted, campanulate. Stamens 4, very short. Stigmas 2. Fruit oblong, somewhat incurved, 1-seeded from one of the mericarps being abortive.

218 Vailla’ntia. *Flowers by threes: the middle one hermaphrodite and fertile, the 2 lateral ones male, and joined to the middle one. Limb of calyx denticulated, permanent:*
teeth many, irregular, stiff. Corolla of the male flowers trid, of the hermaphrodite one quadrifid. Stamens 3-4. Styles in the female flower 2. Fruit 3-horned.

**Tribe XIII.**

**Opecriharia.** Fruit 1-celled, 1-seeded, joined together laterally into a head (f. 112. b.), and at length opening by 2 valves at the apex.—Herbs or subshrubs, with opposite leaves. _Stipulas_ twin on each side, distinct or concrete.


220 _Opulharia._ Limb of calyx 3-4-lobed. Corolla 3-4 cleft. Stamens 1-5. Style short; stigmas 2, slender. Seeds nearly smooth.—Herbs suffruticoso at the base (f. 112.).

221 _Lipo'stoma._ Limb of calyx 4-parted. Corolla with a tubular base, a ventricose throat, and a 4-lobed limb; tube hairy inside, bearded at the top. Stamens 4, inserted in the throat. Stigmas 2. Capsule globose, 2-celled, but usually only 1-celled from the rupturing of the dissepiment, many seeded, crowned by a deciduous operculum.

† _Rubaceae_ genera not sufficiently known.

222 _Psilophium._ Limb of calyx spreading, 5-parted. Corolla with a short tube and a 5-parted limb. Stamens 5, fixed to the base of the corolla. Stigma clavate, 10-winged, exserted. Fruit cylindrical, siliquoid, crowned, 2-celled, many-seeded. Seeds fixed to the central axis, 2 series in each cell.—Shrubs.

223 _Platyphëriu._ Limb of calyx rotate, 5-parted, rarely 4-parted. Corolla coriaceous, funnel-shaped, with a short tube, which is woolly inside, and a 5, rarely 4-parted limb, which is twisted in orientation. Anthers sessile in the tube. Style clavate, spirally 10-ribbed. Ovarium 2-celled, crowned by an epigynous disk.—Shrub, very nearly allied to _Psilophium._

224 _Stipula._ Calyx small, tubular, with a 5-toothed border. Corolla tubular, slender. Stamens 5? Heads of flowers axillary, nearly sessile, surrounded by a large calyciform 5-toothed villous involucrem.


226 _Himatalhth._ Calyx with a turbinate tube, and a loose permanent 5-parted unequal limb. Corolla funnelf-shaped, having the tube much longer than the calyx, and a 5-cleft limb. Stamens 5, capillary, very short, inserted in the tube. Style clavate: stigma subulate. Ovarium 2-celled, 2-seeded.—A tree. Flowers spicate, sessile, involucrated by a large deciduous bractea before expansion. Perhaps belonging to _Rubiacceae._


**Tribe I.**

**Cinchonaceae.** (this tribe contains plants agreeing with _Cinchona_ in important characters). D. C. prod. 4. p. 343. _Cinchonae._ Rich. diss. p. 108. Flowers capitate, sessile upon a globose receptacle (f. 83. e. f. 84. k.)


**Linn. syyst. Pentandria, Monogynia._ Calyx with an oblong tube (f. 83. a.), and a short, truncate, or 5-toothed limb (f. 83. b.); lobes linear. Corolla funnel-shaped (f. 83. c.), with a slender tube, a naked throat, and 5 spreading, oval-oblong lobes (f. 83. c.). Anthers incised (f. 83. g.), or exserted, always shorter than the lobes of the calyx. Style filiform (f. 83. e.), exserted; stigma oblong (f. 83. d.), or ovate, tumid, undivided. Capsules 2-celled (f. 83. b. i.), sessile upon the receptacle, not gradually attenuated to the base. Seeds numerous, imbricate, winged, fixed to oblong placentas, which are adnate to the dissepiment. Embryo inserted in a fleshy albumen.—_Unarmed trees, rarely shrubs, natives of India and Africa._ Leaves opposite, or 3-4 in a whorl, petiolate or sessile. Stipulas interpetiolar, deciduous. Peduncles terminal and axillary, each bearing a globose head of flowers. Bracteas wanting at the base of the head of flowers, but with linear palea among the flowers. Flowers crowded, sessile. This genus differs from _Cephalanthus_ in the parts of the flowers being quinary, and in the cells of the capsules being many-seeded; and from _Sarcococphalus_ in the fruit being capsular, not baccate; and from _Uncaria_ in the capsules being sessile, not attenuated at the base.

**Sect. I. Naucleari (altered from Nauicla).** Lobes of calyx short, acute, or wanting.

§ 1. Capsules growing together in the head.

1 N. _undulata_ (Roxb. fl. ind. 2. p. 117.) arboreous; branches brachiate; leaves petiolate, ovate-oblong, obtuse, undulate, shining; stipulas elliptic, obtuse, almost the length of petioles; peduncles terminal, solitary; capsules united. h. S. Native of the Moluccas. Peduncles drooping, each bearing a large globular head of numerous, small, most beautiful yellow fragrant flowers. Anthers seated in the 5 fissures of the corolla, with hardly any filaments.


2 N. _glabrerrima_ (Bartl. in herb. Hbmnk ex D. C. prod. 4. p. 344.) branches tetragonal; leaves ovate, glabrous, flat; stipula oval, length of petioles; peduncles solitary, terminal; capsules united. h. S. Native of the island of Luzon. This species differs from _N. undulata_ in the leaves not being undulate or shining, in the petioles being 1 inch long, not 2 inches. The heads are referrible to the fruit of _Platanus_, but are smooth. Quite-glabrous Nauclea. Trec 12 to 15 feet.

3 N. _Wallacei (R. Br. in Wall. cat. 6098.) branches quadrangular; leaves broad, roundish-elliptic, obtuse at both ends, but sometimes cuneate at the base, glabrous; peduncles terminal, solitary; stipulas elliptic, obtuse; stamens exserted;
fruit combined. Native of the East Indies, on the banks of rivers.

Wallich's Nauclea. Shrub.

4 N. caudata (Roxb. in Rees' cyclo. vol. 24. no. 6.) arborescent; leaves petiolate, broad-ovate, coriaceous, ovate, smooth; stipulas ovate; peduncles terminal, solitary; capsules united. Native of Ceylon. C. nauclea, Roxb. fl. ind. 2. p. 118. Peduncles drooping, each bearing a large beautiful globular head of very fragrant bright yellow flowers. Bracts a small irregularly 4-toothed withering ring, round the peduncles near the base, within the stipulas. Anthers coriaceous, on very short filaments, from the mouth of the tube just under the fissures of its border.


5 N. sericea (Wall. cat. no. 6095.) branches tetragonal; leaves elliptic, obtuse at both ends, almost sessile, smooth; heads terminal by threes: middle one on the shortest peduncle; corollas clothed with silky villi. Native of the Burman empire, on the banks of the Irrawaddy at Hennrava; and at Chittagong. Capsules united.

Silky Nauclea. Shrub.

6 N. brunonis (Wall. cat. no. 6097.) branches obscurely tetragonal; leaves broad, roundish, coriaceous at the base, smooth above and pubescent beneath, as well as on the petioles; peduncles terminal, trichotomously pinnacled: the middle ones shortest; stamens exerted; fruit combined; stipulas elliptic, obtuse, pubescent. Native of the East Indies, at Plavong.

Brown's Nauclea. Shrub.

7 N. Bartlingii (D. C. prod. 4. p. 344.) branches from compressed to terete; leaves nearly sessile, coriaceous at the base, oblong, acute, shining above, at length glabrous, pubescent beneath as well as on the petioles; peduncles terminal, trichotomously pinnacled: the middle ones shortest; stamens exerted; fruit combined; stipulas elliptic, obtuse, pubescent. Native of Luzon, near Sorsogon. M. mollis, Bartl. in herb. Hanke, but not of Blume. Heads size and form of the fruit of Pittundas.

Bartling's Nauclea. Tree 20 feet.

8 N. diversifolia (Wall. cat. no. 6096.) branchlets tetragonal; leaves of various sizes and shapes, but usually elliptic, obtuse at the apex, and somewhat coriaceous at the base, smooth, on longish petioles: peduncles terminal, trichotomously pinnacled: the middle one always short; heads globose; fruit combined; stamens exerted. Native of the East Indies, in various parts of the Burman empire.

Diverse-leaved Nauclea. Shrub.

9 N. Polychealais (Wall. cat. no. 6100.) leaves oblong-lanceolate, long-acuminated, glabrous; peduncles forming a terminal peduncle; heads small; fruit combined. Native of the East Indies, on the mountains of Silhet.

Mony-headed Nauclea. Shrub.

§ 2. Capsules distinct in the heads.

10 N. macrophylla (Roxb. fl. ind. 2. p. 120.) arborescent; leaves stem-clasping, very broad, ovate, obtuse, villous on the nerves beneath; stipulas linear-lanceolate; peduncles terminal, coriaceous, recurved; capsules distinct. Native of Ambonya. Trunk of tree straight, like that of a pine or fir. Branches deciduous. Leaves 8-24 inches long, and 6-8 inches broad. Peduncles length of the stipulas; each supporting a head of numerous, short, beautiful pale yellow sweet-smelling flowers, which is 3 inches in diameter. Stigmas exerted, pure white. Place to which the seeds are attached linear.

Long-leaved Nauclea. Tree 30 to 40 feet.

11 N. sessilifolia (Roxb. fl. ind. 2. p. 124.) arborescent; leaves oblong, sessile, rather coriaceous at the base and clasping the stem, rounded at the apex; heads terminal, coriaceous; capsules distinct, 4-valved. Native of the East Indies, in the forests of Chittagong. The rest unknown.

Sessile-leaved Nauclea. Tree.

12 N. ovatifolia (Roxb. fl. ind. 2. p. 124.) arborescent, glabrous; leaves sessile, ovate, or elliptic; heads of flowers terminal, solitary. Native of the East Indies, in the forests of Bilhet, where it is called Shal by the natives. The rest unknown.

Oval-leaved Nauclea. Tree.

13 N. Cadamba (Roxb. fl. ind. 2. p. 121.) arborescent, glabrous; branches brachiately: leaves petiolar, coriaceous, ovate, obtuse at the base, and acuminate at the apex; stipulas triangular; heads terminal, solitary, usually shorter than the heads, which are globose; lobes of calyx linear; stamens exserted, shorter than the lobes of the corolla. Native of the East Indies, about Calcutta; and of Malabar. Katon-jaka. Rheed. vol. 3. t. 33. and therefore Cephalanthus orientalis, Lin. spec. ed. 1. p. 95. N. citrifolia, Poir. dict. 4. p. 435. Flowers orange-coloured, collected into heads about the size of a small apple (Roxb.). Style white, exserted; stigma thickish, oblong. Capsules distinct, 4-celled at top. Seeds not winged. Leaves 5-10 inches long. Kudumba is the native name of the tree. It is common about Calcutta, where it grows to be a large tree, and is not only highly ornamental, but very useful from the extensive close shade it yields.

Cadamba Nauclea. Cited? Tree 30 to 40 feet.

14 N. parvifolia (Roxb. fl. ind. 2. p. 122.) arborescent, glabrous; branches brachiate; leaves petiolar, ovate, obtuse, or short acuminate; stipulas ovate; peduncles terminal, solitary, or by threes, when 3 the middle one is shortest; heads globose, bracteate; limb of calyx truncate. Native of the East Indies, almost everywhere; and is a native of all the coast of Coromandel, but chiefly in the mountains and in the Philippines. Ham. in Lin. trans. 15. p. 94. N. parviflora, Pers. encycl. 1. p. 292. Wall. in litt. N. orientalis, Gmütt. fruct. 1. p. 151. t. 30. exclusive of the synonyms, ex Ham. Branches numerous, spreading, forming a large oval shady head. Heads of flowers light yellow, globular, size of a plum. Anthers on short filaments. Style much exserted. The wood is of a light chestnut colour, firm and close grained; is used for various purposes, where it can be kept dry, but exposed to wet it soon rots. (f. 83.)

Small-leaved Nauclea. Tree 30 to 40 feet.

15 N. glabra (Roxb. fl. ind. 2. p. 121.) leaves elliptic, smooth; stipulas linear; peduncles terminal by threes; lobes of calyx triangular; stigma globose; cells of capsule 3-4-seeded. Native of the Moluccas. The leaves, according to Blum. bijdr. p. 1009. are oval, bluntish, attenuated at the base; and the peduncles are trifid from the falling of the leaves. Glabrous Nauclea. Tree.

16 N. Missionis (Wall. cat. no. 6099.) leaves lanceolate, glabrous; peduncles terminal, solitary, bracteate at the base; fruit distinct. Native of the East Indies. N. orientalis, Herb. Madras. Stipulas lanceolate, acute.

Mission Nauclea. Shrub.

17 N. excelsa (Blum. bijdr. 1009.) leaves oval, acute, rounded at the base, coriaceous, glabrous; stipulas oblong, obtuse, pubescent; peduncles terminal by threes (or trifid from
the leaves having fallen).  R. S. Native of Java, in the mountains of Seribu and Panang. Said to be allied to R. glabra. Heads of flowers globose. Fruit sometimes sessile and sometimes pedicellate, but probably from abortion.

Tall Nauclea. Tree 30 to 40 feet.

18 N. osti'a (Blum, bijdr. p. 1009.) leaves obovate-oblong, obtuse, coriaceous, glabrous, downy in the axils of the veins beneath; stipulas oblong, obtuse; peduncles solitary or by threes, terminal, length of pedioles. R. S. Native of Java, in the woods on Mount Tjerimai.

Obovate-leaved Nauclea. Tree.

19 N. stellaris (Wall. cat. no. 6102.) branches terete, smooth; leaves lanceolate, glabrous; peduncles solitary, terminal, bearing each a globose crowded head of flowers. R. S. Native of Cochin-China. Cephalaanthus stellaris, Lour. coch. Flowers apparently red.

Stellate Nauclea. Shrub.

20 N. rotundifolia (Roxb. fl. ind. 2. p. 124.) arboreous; leaves petiolate, roundish-oblong, obtuse; stipulas oblong, obtuse, many-nerved; heads terminal, on short peduncles; capsules distinct. R. S. Native of the East Indies, in Chittagong; and of the Society Islands. The rest unknown.

Round-leaved Nauclea. Tree.

21 N. Africana (Willd. spec. 1. p. 929.) shrubby, smoothish; leaves oval, acute, petiolate; stipulas oblong, acute; peduncles short, terminal, solitary, rarely by threes; bearing each a globose head of flowers; tube of calyx short, truncate; anthers exerted, reflexed. R. S. Native of Guiana, at Cape Coast, and Senegal, and all along the western coast of Africa. Uncaria inermis, Willd. in Ust. del. 2. p. 199. t. 3. N. Africana, Schum. pl. guin. p. 104. Cephalaanthus Africanaus, Reichb. in Sieb. fl. exsic. ser. no. 20. Flowers red.

Var. β, Luzoniensis (D. C. Prod. 4. p. 345.) pubescent; leaves pubescent beneath, but less so above; throat of corolla densely bearded. R. S. Native of the island of Luzon, one of the Philippines. N. Africana, Cham. et Schlecht. in Linmea. 4. p. 140. Perhaps a proper species.

African Nauclea. Shrub 6 to 10 feet.

22 N. Cinchone (D. C. Prod. 4. p. 345.) leaves ovate, obtuse at the base, and acutish at the apex, glabrous above, pale beneath and rather pilose on the nerves; petiole terminal, elongated: having the branchlets opposite, and at the apex bearing each a globose head of flowers, 5-5 in number; bracteae ovate-oblong, deflexed, under the branchlets of the petiole. R. S. Native of South America, probably in Peru. Cinchona globifera, Par. auct. T. Mut. ex R. Rich. mem. soc. hist. nat. par. 5. p. 280. Heads dense, many-flowered. Flowers velvety on the outside. Fruit unripe. Perhaps a species of Cephalaanthus, but differs from that genus in the flowers being pentamericous.

Cinchona Nauclea. Shrub.

23 N. microphylla (Delile, in Caill. pl. afr. p. 67. no. 54.) shrubby, glabrous; leaves 4 in a whorl, lanceolate, tapering into the petioles; stipulas united into a 4-toothed ring; peduncles axillary, smooth, slender, longer than the petioles; heads of flowers globose; calyxes and corollas small, pubescent. R. S. Native of the north of Africa, at Singue.

Small-headed Nauclea. Shrub.

24 N. Lanceolata (Blum, bijdr. p. 1000.) leaves on short petioles, oblong-lanceolate, acuminate at both ends, coriaceous, glabrous; stipulas oblong, obtuse; peduncles terminal, solitary. R. S. Native of the west of Java, in mountain woods. Cephalaanthus orientalis, Blum. cat. hort. buitenz. p. 38. Flowers vary to tetradromous.

Lanceolate-leaved Nauclea. Shrub.

25 N. grandifolia (D. C. Prod. 4. p. 345.) leaves rather large, obovate or ovate-oblong, obtuse, acute at the base, rather undulate, pubescent; stipulas oval, about equal in length to the pedioles; peduncles terminal, solitary, length of pedioles. R. S. Native of Java. N. macrophylla, Blum. bijdr. p. 1010. but not of Roxb. There is a variety of this species in the province of Bantam, having the leaves all obovate and undulated, and another in the province of Rembang having larger and more undulated leaves.

Great-leaved Nauclea. Tree or shrub.

26 N. cordata (Blum. bijdr. p. 1011. but not of Roxb.) leaves roundish-cordate, retuse at the apex, glabrous; stipulas oblong-roundish, united at the base, length of pedioles; peduncles terminal, solitary. R. S. Native of Java, on Mount Salak.

Cordate-leaved Nauclea. Shrub or tree.

27 N. orientalis (Lam. ill. 153. f. 1.) arboreous, glabrous; leaves oval-oblong, on short pedioles, smooth; stipulas oblong; peduncles axillary, opposite: upper ones solitary, 3 times longer than the heads of flowers, which are globose. R. S. Native of the East Indies, Java, and China. Poir. dict. 4. p. 433. Blum. bijdr. p. 1006. Ham. in Lin. trans. 15. p. 94.—Bancélius, Rumph. arb. 3. t. 55. f. 1. Anthers inclosed. Style much exerted; stigma ovate.

Eastern Nauclea. Tree 15 to 20 feet.

28 N. canescens (Bartl. in herb. Haeke, ex D. C. Prod. 4. p. 346.) branches tetragonal, velvety; leaves of short pedioles, elliptic, short-acuminate, glabrous above and canescent beneath; peduncles compressed; lower ones axillary, opposite: the upper ones from the falling of the leaves appear racemose, and are as well as the heads tomentose; lobes of calyx linear, obtuse. R. S. Native of the Island of Luzon. Stipules deciduous, at the sides of the leaves, oblong-linear, twin, on both sides in the upper part of the racemes.

Canescent Nauclea. Shrub or tree.

29 N. rotundifolia (Bartl. in herb. Haeke, ex D. C. Prod. 4. p. 340.) glabrous; branchlets tetragonal; leaves petiolate, roundish-cordate, short-acuminate, paler beneath; peduncles axillary, opposite; stipulas, terminal; compressed, articulated in the middle; heads glabrous, tomentose; segments of the calyx ovate, obtuse. R. S. Native of the Island of Luzon. Corolla hoary from tomentum; with an elongated tube; and roundish lobes. The sterile peduncles become hardened and hooked, as in the genus Uncaria.

Round-leaved Nauclea. Tree or shrub.

Sect. II. PENTACORY'NA (from pente, pente, five, and corony, coryne, a club; in reference to the 5 club-shaped lobes of the calyx). D. C. Prod. 4. p. 345. Segments of calyx (or bracteoles) elongated and club-shaped.

30 N. coriifolia (Roxb. cor. 1. p. 40. t. 53. fl. ind. 2. p. 122.) arboreous; leaves petiolate, roundish-cordate, villous beneath; stipulas oval, peduncles 1-3 together, axillary; bearing each a globose head of flowers; lobes of calyx and stigmas clavate. R. S. Native of Coromandel and Cottala, on the mountains, in the southern peninsula of India. Petioles terete, rather villous, equal in length to the peduncles. Flowers yellowish. Seed 6 in each cell of the capsule, membranaceously winged, never imbricated, but bifid at the apex. Leaves 4-12 inches each way, on pedioles from 2-3 inches long. Peduncles downy, from 1-4. The wood is exceedingly beautiful, it colour is like that of box-wood, but much lighter, and at the same time very close-grained. It is to be had of a large size, from 1-2 feet or more in diameter, and is used for almost every purpose, where it can be kept dry. For furniture it answers exceedingly well, being light and durable. This is probably the N. sterilisifolia, A. Rich. mem. soc. hist. nat. par. 5. p. 289.

Heart-leaved Nauclea. Tree 40 to 50 feet.
31 N. purpurea (Roxb. cor. 1. p. 41. t. 54. fl. ind. 2. p. 123.) sub-arborescent, glabrous; leaves petiolate, oval-oblong, acuminate, smooth; stipulas ovate, obtuse, large, deciduous; peduncles terminal, solitary, or by threes, bracteate in the middle; lobes of calyx 5, clavate. ♀. S. Native of the East Indies, in the moist valleys up amongst the Céspit mountains. Cephalanthus Chinensis, Lam. dict. 1. p. 678. exclusive of the syn. of Rumph. Branches decussate. Leaves shining. Heads of flowers large, purple. Capsules turbinate, dehiscing from the base. Seeds imbricate, winged.

Purple-flowered Nauclea. Tree 20 feet.

32 N. Roxburghii; shrub glabrous; leaves roundish, obtuse, cordate at the base, on long petioles; stipulas large, oblong, obtuse. ♀. S. Native of the East Indies. N. stipulacea, Roxb. herb.

Roxburgh's Nauclea. Shrub.

33 N. Peduncularis (Wall. cat. no. 6091.) arborescent, smooth; leaves ovate-elliptic, coriaceous, acuminate, smooth; peduncles terminal by threes, not so long as the upper pair of leaves; heads of flowers globose. ♀. S. Native of Pulo Penang. N. purpurea, Roxb. herb. Flowers purplish?

Peduncular Nauclea. Shrub.

34 N. Calycina (Barl. in Henn. herb. ex D. C. prod. 4. p. 346.) glabrous; leaves petiolate, oblong, attenuated at both ends; stipulas deciduous; peduncles terminal, solitary, or by threes, bearing caducous bracteae under the apex; lobes of calyx 5, clavate; style not exerted. ♀. S. Native of the Island of Luzon, one of the Philippines. Very nearly allied to N. purpurea, and is probably the same, but the calyx is paler, not purple, and the branches are tetracyclogrammed, not terete.

Large-calycine Nauclea. Tree 15 to 20 feet.

35 N. stipulacea (D. C. prod. 4. p. 346.) arborescent; leaves broad-obovate, glabrous, downy on the nerves on the under surface, as well as on the petioles and branchlets; stipulas ovate, large, leafy; heads of flowers globose; corolla villous on the outside; calyx quite entire, truncate; bracteoles or lobes of calyx 5, club-shaped. ♀. S. Native of Africa, on the banks of the Gambia near Alberda. N. macrophylla, Perr. et Leprieur. ms. but not of Roxb. nor Blum. The dehiscence of the capsule exhibits distinct carpella within the calyceine tube, which is cleft lengthwise; the segments cohereing at the apex, and propped by 3 claviform bracteoles on the outside.

Stipulaceous Nauclea. Tree 20 to 40 feet?

♀ Species not sufficiently known.

36 N. morinifolia (Blum. bijdr. p. 1011.) arborescent; leaves oval, acute, rounded at the base, ribbed, glabrous, bearing depressed glands in the axils of the ribs on the under surface; stipulas stipulate, coloured, viscid, one half shorter than the petioles. ♀. S. Native of Java, on Mount Salak. Flowers unknown.

Morinda-leaved Nauclea. Tree.

37 N. mollis (Blum. bijdr. p. 1010.) leaves rather large, oval, acute, rounded at the base, sometimes subcordate, glabrous above but rather villous beneath and on the branchlets; stipulas oval, obtuse, rather villous beneath. ♀. S. Native of Java, on Mount Salak. Flowers unknown. Allied to N. macrophylla, Roxb.

Soft Nauclea. Tree.

Cult. All the species of this genus are of the most easy culture. A mixture of loam, sand, and peat is the best soil for them; and cuttings root readily in the same kind of earth under a hand-glass, in heat.


Lin. syst. Pentândria. Monogynia. All as in Náuclea, but differs in the flowers being less crowded on the receptacle. Calyx tubularly urceolate, 5-cleft. Capsules pedicellate, clavate, attenuated at the base. Scandent shrubs, hanging to other trees by the old peduncles, which are hooked for the purpose. The greater portion are natives of India, but a few are natives of America. The old or lower peduncles are converted into compressed, hooked, axillary spines. Perhaps only a section of the genus Náuclea. 1 U. Gâmbier (Roxb. fl. ind. 2. p. 186.) branches terete; leaves ovate-oblong, acute, on short petioles, smooth on both surfaces; stipulas ovate; peduncles axillary, solitary, opposite, bracteolate in the middle: the lower ones sterile, and converted into hooked spines. ♀. S. Native of Pulo Penang, Sumatra, Malacca, &c. Náuclea Gâmbier, Hunt. in Linn. trans. 9. p. 218. t. 22. Fleming in asiat. res. 11. p. 187. Smith, in Rees' cyc. vol. 24. no. 7. Hayn. geogr. gew. 10. t. 8. U. jasminifolia, Wall. herb. Fúsus uncatus angustifolius, Rumph. amb. 5. p. 63. t. 34. f. 2. and 3. The upper peduncles bear each a solitary, globular head of beautiful green and pink flowers. Bracteaxes forming a 3 or 4-cleft annular, perianth-like cup, about the middle of each peduncle. Calyx silky on the outside. Corollas villous on the outside, and hairy in the center of the inside. Capsules pedicellate, clavate, grooved longitudinally. Seeds imbricate, winged. Gâmbier is the Malay name of an extract prepared from the leaves of this plant, and one of the drugs, if not the only one, formerly called Terra Japonica in Europe. For the following account of the tree we are indebted to Dr. Charles Campbell of Bencoolen, who says, "This material is called by the Malays gambier. It is chewed by the natives, mingled with betel-leaf and areca, after the manner in which the cutch is used on the continent of India. With some sweetness it has a more highly concentrated astringent principle than terra Japonica. I am solicitous that a trial should also be made of its power in tanning. In regard to the natural history of the gambier, it is procured from a climber. It is the Fúsus uncatus, or Dâna gatta gambier of Rumph. amb. 5. t. 34. The variety from which it is chiefly made is that denominated by Rumphius the Fúsus uncatus angustifolius. The preparation is simple: the young shoot and leaves are shred, and broiled in water for some hours, until a feculum is deposited; this, inspissated in the sun to the consistence of paste, is thrown into moulds of a circular form, and in this state the gambier is brought to market.

Rumphius has fallen into error in asserting that gambier is not made from this plant; for in my journey to Cochinchina I had an opportunity of inspecting the whole process, having resided some days at a small village near the foot of the mountains, where the Sultan of Moco has established a colony for the purpose of carrying on the manufacture to a considerable extent. The price at which it can be procured from the northern parts of this coast I have ascertained to be nearly 10 dollars per hundred weight; it can be supplied in any quantity desired, for the plant abounds in these districts, and the mode of eliciting the astringent matter is such as requires neither much attention nor labour." But Dr. Wallich has learned that in other parts to the eastward of the Bay of Bengal, the process is carried on by boiling the leaves and young shoots, evaporating the decoction by fire, and the heat of the sun. When sufficiently inspissated, it is spread out thin, and cut into little square cakes and dried. The same substance is mentioned by Marsden in his history of Sumatra at pp. 242 and 243, who
refers for a particular detail of the cultivation of the plant and manufacture of gambier to the 2d volume of the Transactions of the Batavian Society. Mr. Hunter (Lin. trans. 9. p. 220.) says, that in Prince of Wales's Island the substance is prepared by boiling the leaves for an hour and a half; adding more water as the first wastes, till towards the end of the process, when it is inspissated to the consistence of thin syrup, and when taken off the fire and allowed to cool it becomes solid. It is then cut into little square pieces, which are dried in the sun, turning them frequently. The gambier, prepared according to this process, is of a brown colour; but prepared in the way described by Dr. Campbell above, it is perfectly white. In medicine it is found beneficial in angina and aphthea, as well as diarrhoea and dysentery. The drug is infused in water, to which it gives the colour of black tea. By the Malays it is mixed with lime, and applied externally to cuts, burns, boils, &c. The finest is alone selected to chew along with leaves of betel, in the same manner as cutch or kut, the catechu in other parts of India. The brown being strong tastered and rank is exported to China and Batavia, to be used in dyeing and tanning.

For the cultivation of the shrub a rich soil is preferred. It gives the most luxuriant crop when the rains are frequent, but does not thrive in grounds that are apt to be flooded. On this account the side of a hill is esteemed better than any other situation. The plants are propagated from seed; an when they are about 9 inches high they may be finally removed to the field, and planted at distances of 8 or 9 feet. At the end of one year from the time when they are planted in the field, a small crop of leaves is obtained. A larger is got in eighteen months, and the third at the end of two years, when the plants are at their full growth. They continue in their prime, and admit of being cut twice a year, for the space of 20 or 30 years, provided care be taken to keep the ground clean, and the roots free from weeds. Their tops must be cut to prevent them growing to a greater height than 5 or 6 feet. It is said that the young leaves produce the whitest substance. In Prince of Wales's Island, gambier, if good, is sold for 8½ dollars per peck, while in the same island sago is sold for 3 dollars per peck; hence the manufacturer is tempted to adulterate the gambier with this article, which mixes intimately, but may be easily detected by solution with water.


2 U. Aéïda (Roxb. fl. ind. 2. p. 129.) branches tetragonal, smooth; leaves ovate, acuminate, smooth on both surfaces; stipules acuminate, twin on both sides; peduncles axillary, solitary, bearing each a single head of flowers, bracteolate in the middle, but after flowering becoming recurved and spinose. $\gamma$, $\omega$. S. Native of the Island of Pulo-Penang, at Soongey Cloon, ex Hunter; of Java, ex Blum. bijdr. 1011.; also of the Moluccas, ex Rumph. Nauclea aëïda, Hunter, in Lin. trans. 9. p. 223. Fünis uncétus atfïïïals, Rumph. amb. 5. p. 63. t. 34. f. 1. Nauclea longiflóra, Poir. suppl. p. 65.—Cinchôna Kattu-Kâbar, J. Kœn. in Retz. obs. 4. p. 6, to which it is nearly allied. The leaves have an acid taste.

Aéïda Uncaria. Shrub cl.

3 U. sclérophyllâ (Roxb. fl. ind. 2. p. 130.) branches tetragonal, pubescent; leaves elliptic, short-pointed, stiff, roughened beneath; stipules lateral, lanceate, 2-lobed; peduncles axillary, solitary, simple, jointed, bracteolate above the middle, bearing each one head of flowers, after flowering becoming recurved and spinose. $\gamma$, $\omega$. S. Native of Pulo-Penang, on the top of the mountain called Soongey Cloon. Nauclea sclérophyllâ, Hunter, in Lin. trans. 9. p. 223. Leaves pubescent beneath. Bracteas 6 in a whorl, at the joint of the peduncle. Calyx pubescent outside. Corolla villous on the outside. Flowers on long pedicels.

**Rubiaceae.**

**II. Uncaria.**

**Hard-leaved Uncaria.** Shrub cl.

4 U. valifòlia (Roxb. fl. ind. 2. p. 128.) leaves oval, petiolar, acute, smooth on both surfaces; peduncles axillary, and terminal, compound; receptacle of flowers as well as the capsules villous. $\gamma$, $\omega$. S. Native of Pulo-Penang. Leaves sometimes ovate, from 3-6 inches long. Peduncles bearing from 1-3 heads of flowers, on pedicels which are as long as the common peduncle, and furnished with a sheathing 4-6-cleft bracte in the middle of each. Petioles short, recurved, channelled.

**Oval-leaved Uncaria.** Shrub cl.

5 U. pilôsa (Roxb. et Wall. in fl. ind. 2. p. 130.) leaves villous, obscurely tetragonal; leaves oval, acuminate, sometimes subcoriaceous, hairy on both surfaces, on very short pedioles; stipulas bi-partite or twin: segments lanceolate, acute, longer than the petioles; peduncles axillary, opposite, villous, divaricate, at length recurved and spinose. $\gamma$, $\omega$. S. Native of Nipa or, in the valley of Sankoo, and at Bhempedi; and of Chittagong and Java. Wall. pl. rar. asiat. 2. p. 55. t. 170. Nauclea sîcknîns, Smith, in Rees's cyc. vol. 24. no. 9. Nauclea pilôsa, Blum. bijdr. p. 1013. Branches clothed with rusty hairs; young shoots silky. Leaves from 5-7 inches long. Peduncles jointed, and bear a whorl of about 6 small linear-lanceolate bracteas, which are hairy without and smooth within. Flowers hairy, whitish, forming round dense heads of 2 inches in diameter. In the Java plant there are 4-6 ovate-lanceolate, acuminate, pilose, rather membranous bracteas in a whorl at the top of each peduncle, under the head of flowers. Perhaps distinct from the plant of Roxburgh.

**Pilose Uncaria.** Shrub cl.

6 U. lactoïsa (Wall. in Roxb. fl. ind. 2. p. 131.) every part of the plant is clothed with long rust-coloured hairs; leaves ovate-lanceolate, acuminate, smooth above, on short pedioles; stipulas twin, on both sides, ovate, membranous; peduncles axillary, opposite, short, at length converted into spinose hooks; corollas almost smooth; capsules on long pedicels. $\gamma$, $\omega$. S. Native of Pulo-Penang and Sumatra, and other East Indian islands. Nauclea lactoïsa, Poir suppl. 4. p. 54. Nauclea setigera, Blum. bijdr. 1013. Branches rather quadrangular. Leaves 3-4 inches long. Stipulas hairy without, permanent. Peduncles about an inch long, surrounded by a whorl of 6 lanceolate bracteas. Capsules smooth, ash-coloured. In the Java plant, the branches are almost smooth, hardly hispid; and the upper surfaces of the leaves are glabrous, or scarcely hispid, but villous beneath on long adpressed hairs; fruit oblong, glabrous, shorter than the pedicels; lobes of calyx oblong, ciliated.

**Woolly Uncaria.** Shrub cl.

7 U. leûgôta (Wall. cl. 190. no. 6111.) branches quadrangular, smooth; leaves ovate-elliptic, acuminate, smooth; peduncles axillary, solitary, opposite, divaricate, bracteate above the middle, some of which are converted into hooked spines. $\gamma$, $\omega$. S. Native of the Burman empire at Amherst. Fruit sessile.

**Smooth Uncaria.** Shrub cl.

8 U. macrophyllâ (Wall. in Roxb. fl. ind. 2. p. 132.) branches tetragonal, pubescent, with 2 opposite furrows; leaves petiolar, broad-ovate, acuminate, smooth and shining above, villous beneath, coarsely nerved and reticulated; stipulas cadose; heads of flowers axillary, solitary, opposite, tomentose. $\gamma$, $\omega$. S. Native of the East Indies, from Silhet. Leaves from 6-7 inches long. Peduncles opposite, axillary, and terminal, 2 inches long, covered with rusty hairs, about 5 lines under the apex they are jointed and surrounded by a ring of 5-6 lanceolate, spreading, villous bracteas. Flowers covered with ash-coloured dense pubescence.

**Long-leaved Uncaria.** Shrub cl.
9 U. tessellana (D. C. prod. 4. p. 348.) branches acutely tetragonal; leaves on short petioles, having a narrow cordate recess at the base, roundish-elliptic, short-acuminate, shining above, reticulately veined beneath, and canescent from down between the veins; peduncles axillary, solitary, recurved, compressed; flowers on long pedicels. \( \hat{\eta} \) \( . \) S. Native of the island of Luzon, one of the Philippines. Calyx tubular, 5-cleft. Corolla large, clothed with silkyomentum inside. Style exerted. Ovarium containing 2 bodies, perhaps seeds or placentas.

**Famous Uncaria.** Shrub cl.

10 U. elliptica (R. Br. in Wall. cat. no. 6104.) branches rather tetragonal; leaves elliptic, acuminate, tapering at the base, on longish pedicels, glabrous except on the nerves beneath while young; peduncles axillary, solitary, opposite, shorter than the leaves, usually not longer than the pedicels: the lowermost ones converted into sterile hooked spines. \( \hat{\eta} \) \( . \) S. Native of Pulo Penang. Nauclea ovalifolia, Roxb. herb. Corolla downy outside.

**Elliptic-leaved Uncaria.** Shrub cl.

11 U. cirrhiflora (Roxb. fl. ind. 2. p. 120.) leaves ovate-oblong, smooth; stipulas bifid; peduncles recurved, floriferous at the apex. \( \hat{\eta} \) \( . \) S. Native of the Malay Islands. The rest unknown.

**Tendril-flowered Uncaria.** Shrub cl.

12 U. glabrata (D. C. prod. 4. p. 348.) leaves oblong-lanceolate, acuminate, glabrous as well as the branches, which are tetragonal; stipulas bifid; peduncles solitary, spreading, articulated above the middle, at length hooked. \( \hat{\eta} \) \( . \) S. Native of Java, on the mountains of Scribu. Nauclea glabrata, Blum. bijdr. p. 1012. Allied to U. cirrhiflora, Roxb. ex Blume.

**Glabrous Uncaria.** Shrub cl.

13 U. pedicellata (Roxb. fl. ind. 2. p. 119.) leaves oval, acutish, rounded or subcordate at the base, shining above, reticulately and clothed with rustily tomentose, as well as the branches, which are tetragonal; stipulas bifid; peduncles axillary, solitary, bearing each a single head of flowers, spreading, articulated above the middle; flowers on long pedicels. \( \hat{\eta} \) \( . \) S. Native of the Molucca islands, and probably of Pulo Penang and Java. Nauclea pedicellata, Blum. bijdr. p. 1012. Flowers forming round heads of about an inch and a half in diameter, covered with rusty tomentum.

**Pedicellate-flowered Uncaria.** Shrub cl.

14 U. speciosa (Wall. cat. no. 6106.) branches tetragonal, clothed with brown villi, as well as the under side of the leaves and nerves on the upper side, petioles, peduncles, and calyxes; leaves ploise on both surfaces, ovate-elliptic, cordate at the base, and short-acuminate at the apex, on very short petioles; peduncles axillary, solitary, opposite. \( \hat{\eta} \) \( . \) S. Native of Pulo Penang and Singapore. Nauclea cordifolia, herb. Findl. Heads of flowers large. Calyx and fruit clothed with brown villi, and the corolla with white. Flowers pedicellate. Lower peduncles converted into spinose recurved hooks.

**Shiny Uncaria.** Shrub cl.

15 U. ferruginea (D. C. prod. 4. p. 348.) leaves ovate, acuminate, rounded at the base, shining above, reticulately and clothed with rusty tomentum as well as the branches, which are tetragonal; stipulas bipartite; peduncles solitary, spreading, articulated in the middle. \( \hat{\eta} \) \( . \) S. Native of Java, on the mountains. Nauclea ferruginea, Blum. bijdr. p. 1013. Very like U. pedicellata, but differs in the flowers and the capsules being 3 times smaller.

**Rusty Uncaria.** Shrub cl.

16 U. ferrea (D. C. l. c.) leaves on very short petioles, ovate-oblong, acuminate, rounded and subcordate at the base, pubescent above, densely tomentose beneath, as well as on the branches, which are obscurely tetragonal; stipulas bifid; peduncles solitary, spreading, articulated in the middle. \( \hat{\eta} \) \( . \) S. Native of Java, on the mountains of Scribu. Nauclea ferrea, Blum. bijdr. p. 1014.

**Iron Uncaria.** Shrub cl.

17 U. sessiliflora (Roxb. fl. ind. 2. p. 130.) leaves elliptic, smooth, acuminate; peduncles axillary, bearing from 1-3 heads of flowers: also terminal, bearing many heads of flowers; capsules sessile. \( \hat{\eta} \) \( . \) G. Native of the East Indies, in the forests of Chittagong. The shrub supports itself by strong spiral axillary hooks. The terminal peduncles form themselves into a kind of racemose panicle.

**Sessile-fruited Uncaria.** Clt. 1829. Shrub cl.

18 U. africana; leaves ovate-lanceolate, acuminate, on short petioles; flowers disposed in a loose globular head; heads terminal; calyx and corolla villous on the outside; hooks axillary, twisted, or refrlected. \( \hat{\eta} \) \( . \) S. Native of Sierra Leone, on the banks of rivulets. Corolla greenish yellow.

**African Uncaria.** Shrub 4 to 6 feet, cl.

19 U. Guianensis (Gmel. syst. 1. p. 370.) branches tetragonal; leaves petiolate, ovate, acute, glabrous; stipulas solitary, on both sides, triangular; peduncles solitary, bracteolate in the middle, axillary, opposite, and terminal: lower ones sterile and converted into flat, hooked spines. \( \hat{\eta} \) \( . \) S. Native of Guiana, on the banks of rivers and rivulets. Ourouparia Guianensis, Aubl. guian. 1. p. 177. t. 68. Nauclea aculeata, Lam. ill. t. 153. f. 2. Poir. diet. 4. p. 456. Hayn. term. bot. t. 29. f. 5. U. aculeata, Willd. in Ust. del. opusc. 2. p. 200. The flowers in the same head are variable in color, yellow, white, green, red, rufous, and blackish: they are very fragrant.

**Guiana Uncaria.** Shrub cl.

20 U. tomentosa (D. C. prod. 4. p. 349.) arboreous; branches somewhat quadrangular, downy; leaves ovate-elliptic, acute, clothed with fine pubescent tomentum beneath, and shining above with the nerves downy; stipulas broad ovate; peduncles villous, disposed in a terminal panicle: and the lowermost ones converted into axillary hooks. \( \hat{\eta} \) \( . \) S. Native of New Granada, on the banks of the river Magdalena, near Naers. Nauclea tomentosa, Willd. in Rom. et Schultes, syst. 5. p. 221. N. aculeata, H. B. et Kuntz, nov. gen. amer. 5. p. 282. Corolla clothed with silky pubescence on the outside. Peduncles also axillary, bearing 1-3 stalked heads.

**Tomentose Uncaria.** Tree.

**Cult.** See Nauclea, p. 409. for culture and propagation.

III. ADINA (from \( \alpha \)\( \iota \)\( \nu \)\( \iota \)\( \varepsilon \)\( \rho \)\( \iota \)\( \varepsilon \)\( \nu \)\( \iota \), crowded; in reference to the flowers being disposed in heads). Salisbury. par. lond. t. 115. Juss. mem. mus. 6. p. 405. D. C. prod. 4. p. 349. - Nauclea species of some.

**Lin. syst.** Pentádria, Monogynia. Calyx with an oblong tube, and a campanulate 5-parted, permanent limb (f. 84. a.). Corolla funnel-shaped, 5-lobed (f. 84. b. e.): throat glabrous; lobes valvate in stivation. Anthers almost sessile (f. 84. c.): at the recesses between the lobes, inclosed. Style exerted (f. 84. d.); stigma capitate-ovate. Capsule membranous, ob-pyramidal, 2-celled; valves 4 (f. 84. g.): dehiscing from the apex; central axis permanent, bearing the calyx at the apex. Seeds 2-4 in each cell, oblong, marginate (f. 84. h.): inserted near the top of the cell, hanging by spongy funicles. - Glabrous shrubs, natives of China. Branches terete, opposite. Stipulas twin, on both sides, joined at the base, yellowish, lanceolate. Leaves lanceolate, glabrous. Peduncles axillary, rarely terminal, solitary. Heads of flowers globose, without any involucra, yellowish. Flowers sessile, crowded, intermixed with paleae. Receptacle pilose. - This genus is intermediate between Nauclea and Cephalánthus, and probably not distinct from the first.


 Cult. The culture and propagation of the species of Adina are the same as those of Nauclea, p. 469, but do not require so much heat.

IV. BREÖ'NIA (this name is not explained, but is perhaps so called after some botanist of the name of Breon.) A. Rich. mem. soc. hist. nat. par. 5. p. 290. D. C. prod. 4. p. 620.

Lin. syst. Pentándria, Monogynia. Calyx with a 5-parted limb, and truncate sub-cuneate lobes. Corolla with a terete tube, and a flat, spreading, 5-lobed limb: having the lobes ovate-lanceolate. Stamens half exserted, inserted in the throat of the corolla. Style very long, exserted: stigma bicornate, with the lobes approximate. Ovarium 2-celled; cells 7-8-ovulate; ovaries fixed to the membraneous placentas, which hang from the axis. Fruit somewhat crustaceous, indehiscent.—A tree. Leaves opposite, very large. Stipulas connate. Flowers disposed in axillary, solitary, globose heads, which stand on long peduncles; each peduncle girded by a beaked involucrem, which at length bursts on one side and falls off.—This genus is nearly allied to Nauclea, but probably referrible to Sarcocœphalus, by the fruit being indehiscent.


 Madagascar Breönia. Tree.

 Cult. See Nauclea, p. 469, for culture and propagation.


Lin. syst. Pentándria, Monogynia. Limb of calyx campanulate, dilated, coloured, divided irregularly. Corolla with a short tube, and a 5-lobed limb, which is valvate in aestivation. Anthers large, inserted in the tube of the corolla. Style bicornate; stigmas linear, thick. Ovarium 2-celled; cells many-seeded; placentas semi-cylindrical or convex, central. The rest unknown.—A radican shrub, with tetragonal stems, with 2 of the angles more prominent than the other 2. Leaves opposite, on short petioles. Stipulas ligulate. Flowers pale red, disposed in terminal, dense, globose heads; each head involucrated by a salver-shaped involucrem.—This genus is nearly allied to Nauclea.

1 L. erubescens (Jack, l. c.). [1. S. Native of Singapore. Leaves on short petioles, ovate-lanceolate, acute at both ends, about 8 inches long. The involucrum which surrounds each head of flowers is entire and cup-shaped. Flowers sessile. Ovarium crowned by a prominent nectarial ring. Reddish-flowered Lecananthus. Shrub.

 Cult. See Nauclea, p. 469, for culture and propagation.

Subtribe II. CINCH'ONÆ (shrubs and trees agreeing with Cinchona in important characters). D. C. prod. 4. p. 349.

—Cinchonæe and Manetæææ, Cham. et Schlecht, in Linnaaes. p. 4. 178. Flowers on longer or shorter pedicels, not seated on a globose receptacle, as in those of the first subtribe. (f. 86. f. 86. f. 89.)

VI. STEVENSIA (in honour of Edward Stevens, who rendered important services to St. Domingo, while he was consul of the United States there). Poit. ann. mus. 4. p. 231. t. 60. Gaertn. fruct. 3. p. 99. t. 197. Juss. mem. mus. 6. p. 389, but not of Neck.

Lin. syst. Pentándria, Monogynia. Calyx with a sub-globose tube, girded at the base by an unequally 4-lobed involucrum; limb biparted, deciduous: having acute lobes. Corolla salver-shaped, with a short tube and a spreading bluntly 6-lobed limb. Anthers 6-7, sessile in the throat of the tube. Stigma bilamellate. Capsule globose, areolate at the apex, and pubescent in the areole, 2-celled, containing 2 cocci, which are separable from the calyx: one of them only deciduous. Placentas central, connecting the margins of the valves. Seeds minute, numerous, oval, winged a little, rather pubescent at the apex. Embryo straight in the fleshy albumen: having the radicle turned towards the hylium.—A much branched shrub, native of St. Domingo; having the branches clothed with resin. Leaves oval, white beneath, finely reticulated. Stipulas joined into a short sheath. Flowers axillary, solitary, white, on short pedicels, girded by 4 concrete bracteas, forming a kind of involucre to each flower.

1 S. buxifoìa (Poit. l. c.). [1. S. Native of St. Domingo, near La Vigne du Cap Frances.

Bux-leaved Stevensia. Shrub 10 to 12 feet.

 Cult. See Nauclea, p. 469, for culture and propagation.


—Portàndia species, Schreb.


2. C. campanilla (D. C. prod. 4. p. 350.) leaves glabrous above, but villous beneath as well as the calyces and peduncles; peduncles trifid, 3-flowered. Ț. S. Native of South America, about the Caracas, where it was collected by Vargas, who says it is called Campanilla by the natives. Flowers and fruit one half smaller than those of C. speciosa, and the capsule is less compressed, and ribless.

Campanilla Coutarea. Shrub 3 to 4 feet.

3. C. mexicana (Zucc. et Mart. in litt. 1829. ex D. C. prod. 4. p. 350.) leaves glabrous on both surfaces; peduncles 1-flowered, bibracteolate at the base; corolla funnel-shaped, with very blunt lobes. Ț. S. Native of Mexico.

Mexican Coutarea. Shrub or tree.

† Species hardly known.

4. C. latifolia (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 4. p. 350.) pedicels 1-flowered, bracteate; the diameter of the flower equal to its length. Ț. S. Native of Mexico, where it is called Copalehi by the natives. Leaves oval, attenuated at the base. Pedicels axillary, usually twin. Corolla white. Stigma bilamellate. Capsule less compressed, ornamented with 6 ribs and scattered tubercles.

Broad-flowered Coutarea. Shrub or tree.

5. C. flavescens (Moc. et Sesse, l. c. ex D. C. l. c.) pedicels numerous, bracteate; the diameter of the flower almost one half smaller than its length. Ț. S. Native of Mexico. Superior leaves sometimes by threes, oval, attenuated at the base. Pedicels 3 in a whorl, twice bifid, only bracteate under the ramifications. Flowers yellowish, smaller and narrower than in the preceding species.

Yellow-flowered Coutarea. Shrub or tree.

Cult. For culture and propagation see Nauclea, p. 469.


Lin. syst. Tetra-Hecandria, Monogynia. Calyx with an obvate tube, girded by a 2-4-leaved involucre at the base; limb 2-4-parted: segments narrow, acute, permanent. Corolla with a long terete tube, a short ventricose throat, and a 4-6-parted limb (f. 85. b.), with spreading flat oval lobes. Stamens 4-6, sessile beneath the mouth of the tube, inclosed (f. 85. c.). Stigma thick, bifid (f. 85. d.). Capsule elongated, 2-celled, crowned by the limb of the calyx; cells dehiscing from the top inside. Placentas 2, central. Seeds imbricated downwards, rather compressed, ending each in a pencil-formed tail (f. 85. e.). Embryo straight, in sparing fleshy albumen; having the radicle turned towards the hyllum.—Small glabrous shrubs or subshrubs. Leaves ovate, green, rather fleshy. Sepals ovate, membranous, foliaceous, deciduous, the 2 upper ones constituting an involucel. Flowers terminal, solitary, elongated, white. Fruit follicle-formed.

1. H. longitudinalis (Swartz, obs. p. 135. t. 5. f. 1.) flowers hexandrous; corollas 6-cleft, with linear-lanceolate, rather revolute segments. Ț. S. Native of Jamaica, Guadalupe, Martinico, Cuba, the hotter parts of Mexico, on the decayed parts of old trees, and among moss. H. parasitica, vol. III.

2. H. brasiliensis (Cham. et Schlecht. in Linnæa. 4. p. 201.) corollas 6-cleft, hexandrous: segments ovate-lanceolate, obtuse. Ț. S. Native of Brasil. Leaves oval, acuminate. Tube of corolla 3 inches long.

Brasilian Hillia. Shrub.

3. H. tetrandra (Swartz, fl. ind. occ. 1. p. 630. icon. t. 11.) flowers 4-cleft, tetradrous: segments ovate. Ț. S. Native of Jamaica, on the high mountains among the roots of bushes. Leaves ovate, pale green. Roots creeping, tuberous. Lobes of calyx 4, cuneate-oblong, nearly an inch long and tetragon. Seeds papose at the apex.—Perhaps H. tuxtlensis, Moc. et Sesse, fl. mex. ined., which was collected about Tuxtla in Mexico, is distinct from this species, in consequence of the calyx being 2-lobed, and the involucre 2-leaved.


Cult. The species of this genus delight in a mixture of turfy loam, peat, and sand; and cuttings will soon strike root in the same kind of soil, or in sand under a hand-glass, in heat.

IX. HYMENOPOGON (from ἕμην, hymen, a membrane, and πογον, pagon, a beard; the seeds are furnished with a membranous appendage at each end). Wall. in Roxb. fl. ind. 2. p. 156. D. C. prod. 4. p. 351, but not of Beauv.


1. H. parasiticus (Wall. 1. c.) Ț. S. Native of the East Indies, growing on trees, and sometimes on rocks, on Sheeopore, Chandagiri, near Hetoumma, and between that place and Chitlog. Stems rooting, as well as the branches, covered with pale ash-coloured bark. Leaves 5-7 inches long. Seeds linear, smooth, terminated by a long linear membranous, sometimes bifid appendage, measuring altogether 3 lines in length.

Parasitical Hymenopogon. Shrub.

Cult. See Hillia above for culture and propagation.

X. CINCHO'NA (said to be named in honour of the Countess de Chinchon, vice queen of Peru, who was cured of a fever in the 3 P


Fee, hist. nat. pharm. 2. p. 240.

§ 1. Capsule dehiscing at the base.—Normal species.

1 C. Lanceolata (Ruiz et Pav. fl. per. 3. p. 1. t. 238.) leaves oval - lanceolate, acute, naked on both surfaces, as well as the branches, shining; panicle brachiate, much branched, smooth; calyce teeth ovate, acuminate; segments of corolla linear-lanceolate; stigma emarginate; capsule ovate, ribbed. 1. s. Native of Peru, in the mountains of Loxa, and other cold mountainous regions; as well as of New Granada, between Guaduas and Santa Fe de Bogotá, where it was collected by Mutis. C. lancefolia, Mutis, period. de Santa Fé, p. 465. Hum. in mag. der. gesell. nat. fr. berl. 1807. p. 116. Alib. tract. des fievres, p. 374. C. nifida, Ruiz et Pav. fl. per. 2. p. 50. t. 191. C. angustifolia, Ruiz et Pav. quin. suppl. 14. with a figure. C. glabra, Ruiz, quin. 2. p. 94. C. Cucumenfolia, Pavon, mss. Quinquina orange, Mutis, quin. Carassarilla officinal. Ruiz, quin. 56. Carassarilla Lampa, Ruiz, quin. 2. p. 64. Cinchona Condaminia, Humb. et Bonpl. pl. equin. 1. p. 33. t. 10. Hum. in mag. der. gesell. nat. fr. berl. 1807. p. 112. nov. gen. amer. 3. p. 400. C. officinalis, Lin. syst. veg. ed. 10. p. 929. Condamine in mem. de l’Académie de Paris, 1738. p. 114. Lam. ill. t. 164. f. 1. Vahl, skrifter. af. natur. selfkab 1. t. 1. Lamb. mon. t. 1. C. stüpea, Pav. mss. Carassarilla fina de Uritucinga de los Spaniards. This species varies extremely in the form of the leaves. The celebrated Mutis has, with great propriety, considered his C. lancefolia the quina Naranganda or Quinquina orange of Santa Fé, as identical with the Quina fina de Uritucinga of Humb. et Bonpl. C. Condaminia. Although it is probable that several species of this important genus afford the Peruvian bark of the shops, of these three only are admitted into our national pharmacopoeias, to which the names of C. lancefolia, C. oblongifolia, and C. cordifolia have been applied, designating respectively the pale, the red, and the yellow bark. The present species was first described and figured by the astronomer Con-
respecting the Countess Chinchon, vice-queen of Peru, is probably still more doubtful than it is generally supposed to be. There certainly was a Count Chinchon, Don Geronimo Fernandez de Cabrera Bobadella y Mendoza, who was Viceroy of Lima from 1639 to 1639. It is very probable that his wife, after her return to Spain in 1640, was the first to introduce the Cinchona bark to Europe. The name of *Pulvis Comitissae* appears even more ancient than that of *Pulvis Jesuiticus* or *Pulvis patrum*. But I do not believe that the Corregidor of Loxa, Don Juan Lopez de Cunñizares, who is said to have cured the Countess of ague, received this remedy from the Indians. In Loxa there is no tradition whatever of this kind, nor is it probable that the discovery of the medicinal power of the Cinchona belongs to the primitive natives of America; if it is also considered that these natives (like the Hindoos) adhere with unalterable pertinacity to their customs, to their food, and to their nostrums; and that notwithstanding all this the use of the Cinchona bark is entirely unknown to them in Loxa, Guancahambu, and far around. In the deep and hot valleys of the mountains of Cata-mango, Rio Calvas, and Macara, agues are extremely common. But the natives there, as well as in Loxa, of whatever cast, would die rather than have recourse to Cinchona bark, which, together with opiates, they place in the class of poisons, exciting mortification. The Indians cure themselves by lemonades, by the oleaginous aromatic peel of the small green wild lemon, by infusions of *Scoparia dolicos*, and by strong coffee. In Malacatis only, where many bark-peelers live, they begin to put confidence in the Cinchona bark. In Loxa, there is no document to be found which can elucidate the history of the discovery of the Cinchona; an old tradition, however, is current there, that the Jesuits, at the felling of the wood, had distinguished, according to the custom of the country, the different kind of trees by chewing their barks; and that on such occasions they had taken notice of the considerable bitterness of that of the Cinchona. There being always medical practitioners among the missionaries, it is said they had tried an infusion of the Cinchona in the tertian ague, a complaint which is very common in that part of the country. This tradition is less improbable than the assertion of European authors, and among them the late writers Ruiz and Pavón, who ascribe the discovery to the Indians. The medicinal powers of the Cinchona was likewise entirely unknown to the inhabitants of the kingdom of New Granada."

Cinchona bark is stripped from the trunk and branches in the dry season, from September to November; it is dried by exposure to the sun, and after being imported into Europe is sorted for sale. It is brought to this country in chests, each of which contains from 100 to 200 pounds weight of bark, mixed with dust and other impurities. According to Humboldt, the quantity of this drug annually exported from America is from 12,000 to 14,000 quintals. The kingdom of Santa Fe furnishes 2000 of these, which are sent from Carthagena; 110 are furnished by Loxa, and the provinces of Huamanga, Cuenca, and Jean de Bracamoros, and the thick forests of Guacamamba and Ayavaca, furnish the rest, which is shipped from Lima, Guayaquil, Payta, and other ports on the South Sea.

The pale bark of the shops, the *Quina Naranjada*, and *Cascaiculina fina de Uritsinga* of the Spaniards, which is obtained from *C. lanceolata*, is preferred in South America to all the other kinds of bark. It is in pieces, 3 or 6 inches long, singly or doubly convoluted, externally of a greyish brown colour, to which crusts of lichens often adhere, and is internally when fresh broken of a bright cinnamon hue. There are often intermixed with this others of a coarser texture, thicker, and nearly flat, which appears to be obtained from the trunk and larger branches. The fracture is smooth and even; its powder is of a pale colour; its taste is bitter and astringent; its smell peculiar and aromatic.

The yellow bark, named *Quina Amarilla*, *Cascarilla de Loxa*, and *Cascarilla amarailla*, is less rolled than the pale bark, and the pieces are larger and thicker. Externally it is of a greyish brown, and covered with lichens; internally of a much deeper orange than the pale bark. It has a more bitter taste, with a less aromatic odour, and with scarcely any sensible degree of astringency.

The red bark is sometimes rolled, but more commonly in flat thick pieces, covered with rough entire reddish brown epidermis. It has a smooth fracture. It is composed of three layers; the inner one being of a dark ferruginous colour, it is more bitter and astringent than the pale and yellow bark.

These three kinds of bark are only distinguished in Britain; but M. Von Berken, a drug broker of Hamburg, who has written a valuable monograph on the Cinchonas, enumerates eight kinds as distinguished in commerce; and the drug merchants of Spain enumerate about 50 different kinds of bark: these are probably obtained from as many species of *Cinchona*, or several of them may be obtained from the same species—the difference depending upon the age, state, and habitats of the trees.

**Qualities and chemical properties.**—Few vegetable substances have undergone so many analyses, by the most eminent chemists, as the different varieties of Peruvian bark. The basis of all of them is woody fibre, combined with which are various principles capable of being abstracted by different solvents. The taste of all is more or less bitter and astringent. Boiling water extracts all their active principles, affording a solution of a pale brown colour; this infusion is transparent when hot, but on cooling becomes turbid, and a precipitate is deposited, which is insoluble in alcohol. The decoction has a very astringent taste, and a deep brown colour. By long boiling the virtues are nearly destroyed, owing to the chemical change and precipitation of its active matter. Alcohol, in all its modifications, is a powerful solvent of the active principles of Cinchona. A saturated solution of ammonia is also a solvent of them, but acetate acid acts less imperfectly than even water. Vauquelin found that an infusion of the *pale bark* reddened litmus paper; was copiously precipitated by solution of galls, and in a smaller degree in yellowish emulsions by solution of isinglass. A solution of tartar emetic was rendered turbid, and slowly precipitated by it; solution of superacetate of lead produces quickly a copious precipitate. The addition of a solution of the sulphate of iron to the infusion changed the colour to a bright olive green, but was scarcely precipitated. The powder macerated in sulphuric acid afforded a golden yellow tincture, which reddened litmus paper, and left a pellicle of bitter resin when evaporated on the surface of water, to which it gave the colour of the tincture. This coloured water did not precipitate the solution of galls and of tartar emetic, and occasioned no precipitate on the addition of the solution of sulphate of iron. With alcohol it produced a deep orange coloured tincture, which precipitated sulphate of iron, tartarized antimony, and tannin. The agency of the different menstrua on the red and yellow varieties of the *Cinchona* produce nearly the same results as on the common or pale bark. The filtered solution of yellow bark has a pale golden hue, with a shade of red; it is bitter, reddens litmus paper, and precipitates solution of galls. On adding a solution of isinglass, a pinkish yellow precipitate is produced; superacetate throws down a precipitate; tartarised antimony gives a precipitate in pale yellowish flakes. A solution of the sulphate of iron changes its colour to a bluish green, and slowly lets fall a precipitate of the same colour. The alcoholic tincture appears to be in every respect the same as that afforded by the pale bark. The red bark has a more nauseous taste than the barks of the other species.
Rubiaceae. X. Cinchona.

The aqueous infusion is of a pale ruby colour; its action on the solutions of galls and of isinglass is nearly the same as those of the two former species, but it is not altered by tartarised antimony, nor by the superacette of lead; and the solution of iron occasions a dirty yellow colour only, little being precipitated. The alcoholic tincture is of a deep brownish red colour, and precipitates the solution of the sulphates of iron and of tartarised antimony; the former of a black colour, and the latter red. From the experiments of Vaquelin, Fabroni, and others, it appears that the active principles of Cinchonas consist chiefly of cinchonine, resin, extractive gluten, a very small portion of volatile oil, and tannin. Vaquelin has determined the presence of a peculiar acid, to which he gives the name of cinine acid, in some varieties of the bark. The following are the most important results that have been obtained by MM. Pelletier and Caventou, respecting the composition of the three official species. — 1st. In pale bark they found aciculoid inate of cinchonine, a green fatty matter, which they term red cinchonine; tannin, a yellow colouring matter, kinate of lime, gum, starch, and woody fibre. 2nd. In yellow bark they found that the alkaline base differs from cinchonine in being uncrystallizable, very soluble in ether, and forming salts with the acids very different from those of cinchonine. The chemical constituents of the yellow bark are an aciculoid kinate of this salt, which they have named quinine, a deep yellow fatty matter, red cinchonine, tannin, yellow colouring matter, kinate of lime, starch, and woody fibre. 3rd. Red bark contains aciculoid kinate of cinchonine, kinate of quinine, reddish fatty matter, red cinchonine, tannin, kinate of lime, yellow colouring matter, starch, and woody fibre. The difference between the pale, the red, and the yellow barks, depends principally on the quantity of the two alkaline bodies, cinchonine and quinine, found in them. The pale bark contains cinchonine, but a very small portion of quinine; the alkali, again, which predominates in the yellow bark, is quinine; while in the red bark, and some spurious kinds, there is a combination of both these substances. The presence of cinchonine, as a distinct vegetable principle, was first discovered in Peruvian bark by Dr. Duncan, of Edinburgh.

The separation of cinchonine from the pale bark, and of quinine from the yellow bark, is a very simple operation. It consists in digesting the bark, coarsely powdered, in weak sulphuric acid, and then to repeat this digestion with about half the quantity of liquid, till all the soluble matter is extracted. To this decoction a small quantity of powdered shelled lime is added, somewhat greater than is necessary to saturate the acid; the precipitate that ensues (a mixture of cinchonine and the sulphate of lime) is collected, dried, and boiled for a few minutes in alcohol, which takes up the cinchonine, but will not dissolve the sulphate of lime; the solution is decanted off while still hot, and fresh portions successively added for the repetition of the same operation, until it ceases to act on the residuum, which is then merely sulphate of lime. The different alcoholic solutions are then put into a retort, and considerably evaporated, during which and on cooling acicular crystals of cinchonine are deposited. By repeating the solution once or twice, in boiling alcohol, and again crystallizing, the cinchonine will be obtained in a perfectly pure state. Its crystals are semi-transparent, have a pearly lustre, and are usually obtained in the form of small needles. It has but little taste, and requires 700 parts of water for its solution, but boiling alcohol dissolves it much more abundantly; it is sparingly soluble in oils and sulphuric ether. At a moderate heat it is partly volatilized, and partly decomposed. It combines with different acids, forming neutral salts. Mr. Brande found that it contained no oxygen, 100 parts consisting of about 80 parts of carbon, 13 of nitrogen, and 7 hydrogen. It has an intensely bitter taste, and exerts the same action on the animal economy as the bark itself, but it is less generally used in medicine than the other active principle of the bark, quinine, because the yellow bark from which it is procured is more plentiful; the quinine, therefore, is cheaper than cinchonine, and equally efficacious. Quinine may be obtained from the yellow bark in the same manner as cinchonine is prepared from the pale bark, or by adding an alkali to the solution of the sulphate of quinine. Quinine is not crystallizable like cinchonine, but on the application of heat it melts into a kind of paste. It has a much more bitter taste than the other, and is very sparingly soluble in water. They differ also remarkably in their chemical composition, cinchonine containing no oxygen, while in quinine there is a notable proportion of this element. According to Mr. Brande, it consists of about 5.55 parts of oxygen, 7.65 hydrogen, 13 nitrogen, 73.80 carbon. By digesting quinine in a weak solution of sulphuric acid, the sulphate of quinine is obtained, which is the salt now generally used for medicinal purposes. The most approved process for preparing this salt was pointed out by Mr. Henry. A kilogramme of bark (2 lbs. 3 oz. 5 dr.) is reduced to a coarse powder, and boiled twice for about a quarter of an hour in 14 or 15 pints of water, 2 ounces of sulphuric acid being added to it each time. The decoctions containing the sulphate of quinine are of a reddish colour, which gradually acquire a yellow tint, and have a very strong bitter taste. They are to be filtered through a linen cloth, and about half a pound of powdered quicklime added to the solution. The sulphate of quinine is decomposed in this manner, the alkali being precipitated along with the sulphate of lime. This is digested repeatedly in alcohol, till it no longer imparts any bitter taste to this fluid; the alcoholic solutions are then evaporated till a very bitter viscid substance is obtained, which becomes brittle as it cools. This is the quinine separated from almost all the other ingredients of the bark, and by digesting it in dilute sulphuric acid a solution of sulphate of quinine is obtained, which crystallizes on evaporation. It is a white pulvulent substance; it crystallizes in small white 4-sided prisms, which are distinguished by their pearly lustre. It is not very soluble, therefore not affording a very bitter taste; but by adding a drop or two of acid to the solution, its solubility is increased, and then it becomes intensely bitter. It is decomposed by the alkalies and earths; it volatilizes at a moderate heat, and it can unite with an excess of acid, forming a bisulphate of quinine. The sulphate of quinine is frequently adulterated with starch, pipe-chay, and various other substances. To determine its purity, the simple process of heating it is sufficient; if it evaporate entirely without charring and melting, it is pure; but if it should turn black or smell sweetish, it is probable that sugar or starch is present. Pure quinine is seldom used in medicine, but the sulphate possesses in a very eminent degree the medicinal properties of Peruvian bark, one grain, or one grain and a half, being equivalent to a drachm of the bark in substance. In Paris it has superseded, in a great measure, the Peruvian bark, and is now extensively used in this country in all cases where that valuable medicine is indicated, in doses of from 2 to 5 grains.

Medical properties and uses.—Peruvian bark has been long known as one of the most powerful and valuable tonics we possess, and may be administered with great freedom in all cases where that class of remedies are indicated. The only effects of an overdose are headache and nausea. It also possesses antiseptic and astringent powers in a very eminent degree, and is universally employed as a febrifuge in the cure of intermittent and remittent fever, in diseases of debility, such as typhus, cynanche maligna, in passive lumorrhages, confluent small pox, in dysentery, in some cutaneous diseases, as lichen agris, and livida, in purpura, in some varieties of erysipelas, in gangrene, in dyspepsia, and even in acute rheumatism and gout. The
decoration of yellow cinchona bark, given in large quantities, is the best antidote to the poison of tartar-emetic.

**Cordate-leaved Cinchona or Yellow Peruvian-bark.** Tr. 30 to 40 ft.

3 C. **Rudolphia** (Humb. et Bonpl. pl. equin. 1. p. 65. t. 19. nov. gen. 3. p. 403.) leaves oval or ovate, naked above and shining, but pilose on the veins beneath; calycine teeth very short; corolla clothed by silky tomentum outside, with a bearded limb; style exerted; stigma bipartite; capsule linear, terete. **S.** Native of Peru, in the forests of Loxa, in the province of Quito. Segments of corolla ovate. Anthers shorter than the filaments. Lobes of stigma linear, flat, and obtuse. This is a very distinct species, being easily distinguished from all its congeners by its narrow cylindrical capsules, and by the narrow linear divisions of the stigma.

**Round-leaved Cinchona.** Tree 30 to 40 feet.

4 C. **ovalifolia** (Humb. et Bonpl. pl. equin. 1. p. 65. t. 19. nov. gen. 3. p. 403.) leaves oval or ovate, naked above and shining, but pilose on the veins beneath; calycine teeth ovate, acute; corolla clothed by silky tomentum outside, with a bearded limb; anthers twice longer than the filaments; stigma bipartite; capsules oval, constricted at the apex. **S.** Native of Peru, in the forests of Loxa, in the kingdom of Quito; Pavon; and on the Andes of Peru, near Cuenca; Humboldt and Bonpland. Panicle brachiate, pubescent. Flowers white. Segments of corolla linear. Lobes of stigma linear, obtuse. This species must not be confounded with the C. ovalifolia of Mutis, the C. macrocarpa of Vahl, or Quinquina blanca of New Granada, which are totally different.

**Oval-leaved Cinchona.** Tree 15 to 20 feet.

5 C. **purpurea** (Ruiz et Pav. fl. per. 2. p. 52. t. 193.) leaves oval or ovate, acute at the apex, and attenuated at the base, at length naked on both surfaces and shining; panicle corymbose, pubescent; anthers shorter than the filaments, but exceeding the throat; corolla clothed by silky tomentum outside, with a bearded limb; stigma 2-lobed, inclosed; capsules narrow, ovate-oblong, attenuated at the apex. **S.** Native of the lower mountains of the Andes, in forests, at Chinchao, Pati, Muna, Casape, Casapillo, &c. (Pavon); and of the Andes of Peru, near the city of Jaen de Bracamoros. C. serobicul-éa, Humb. et Bonpl. pl. equin. 1. p. 165. t. 47. nov. gen. amer. 3. p. 402. Casarciina fina Bracamoreamium and Casarciina morada, Ruiz et Pav. p. 67. Casarciina boba de hochamorada. Corolla rose coloured. Capsule bislicate, pubescent when young, but glabrous in the adult state. This is distinguished from the preceding species by its more acute smoother leaves; by its corymbose panicles; by its filaments being longer than the anthers, and their surpassing the throat of the corolla; by the capsules, which are ovate-oblung, narrowed, and without ribs; and, lastly, by the shorter and broader lobes of the stigma.

**Purple-flowered Cinchona.** Tree 40 feet.

6 C. **pueróscens** (Vahl, in act. havi. 1. p. 19. t. 2. Lamb. mon. t. 2.) leaves broad-ovate, or roundish-ovate, acute, on long petioles, rounded at the base or acutish, naked and shining above, but clothed with pilose tomentum beneath, as well as the branches; panicle brachiate, diffuse, clothed with rusty tomentum; corolla clothed by silky down on the outside, with a bearded limb; anthers almost sessile; stigma 2-lobed; capsule oval-oblong, oblongly ribbed, tomentose. **S.** Native of Peru, in forests on the lower mountains of the Andes, towards Pausuo and Panao; and also of the forests of Huamaco, Ruiz et Pavon. C. ováa, Ruiz et Pav. fl. per. 2. p. 52. t. 193. Casarciina páliidaa, Ruiz, quinol. p. 74. Casarciina de Pato de Gal-áratea. Petioles 2 inches long. Teeth of calyx very short, acute. Corolla purplish outside and white inside, with ovate oblong segments. Glandulas included. Style exceeding the anthers. Lobes of stigma ovate.

**Pubescent Cinchona.** Tree 30 to 40 feet.

7 C. **mierá'ntha** (Ruiz et Pav. fl. per. 2. p. 52. t. 194.) leaves broad, oval or ovate, naked and shining above, but pilose in the axils of the veins beneath; panicle crowded, pubescent; anthers shorter than the filaments, hardly exerted; style very short; stigma 2-lobed; capsule elliptic, attenuated at the apex. **S.** Native of the Andes of Peru, in cold elevated forests towards St. Antonio de Playa Grande, where it was first observed by John Taffall. Corolla clothed with silky down on the outside, with a bearded limb, and ovate segments. Calycine teeth very short, acute. Lobes of stigma ovate. Capsule bisulate, ribless. This species has some affinity with C. Condamin-éa, but its small flowers, and elliptical ribless capsules, together with its very short style, and other marks, readily distinguish it.

**Small-flowered Cinchona.** Tree 20 to 30 feet.

8 C. **Humboldtiana** (Lamb. cinch. p. 7.) leaves lanceolate, acute at both ends, naked above, but villous beneath, as well as on the branchlets; panicle glomerate, villous; calycine teeth very short, acute; corolla clothed by silky down outside, with a bearded limb; anthers sessile, inclosed; stigma exerted, emarginate; capsules ovate, hairy, glomerate. **S.** Native of Peru, in the kingdom of Quito, in forests near the town of Jaen de Bracamoros. Pavon. This is a strongly marked and very distinct species; there is none with which it can be confounded; it is the C. villósa, Pavon, mss.

**Humboldt's Cinchona.** Tree.

9 C. **glandulífera** (Ruiz et Pav. fl. per. 3. t. 224.) leaves oval, acutish at both ends, naked and shining above, very pilose beneath, as well as on the branchlets, with undulated rather revolute margins; panicle brachiate, very pilose; corolla pilose outside, with a bearded limb; calycine teeth very short, mucronulate; segments of corolla ovate; stigma emarginate; capsules ovate, drooping. **S.** Native of Peru, in the kingdom of Quito, at Loxa. Pavon. C. microphylla, Mutis, mss. C. quercifólia, Pavon, mss. C. Mutisi, Lamb. cinch. p. 9. Anthers exserted, shorter than the filaments. Corolla white. Var. β; leaves oval, obtuse, rounded at the base, and rather cordate. **S.** C. quercifólia, var. crispa, Pavon, mss.

**Gland-bearing Cinchona.** Tree 10 to 15 feet.

10 C. **hirsíta** (Ruiz et Pav. fl. per. 3. t. 51. t. 192.) leaves oval, acute at the base, beset with bristly hairs, as well as on the branchlets, very short, and at length naked; flowers glomerate, beset with bristly hairs; calycine segments lanceolate, acuminated; corolla pilose outside, with a bearded limb; stigma 2-lobed; capsule ovate. **S.** Native of Peru, on the Andes, in forests in cold elevated places, towards Pillao and Acamoyo. Ruiz et Pavon. Casarciina delgado, Ruiz, quinol. p. 60. Flowers red. Humboldt and Bonpland have confounded this with the C. cordifólia of Mutis, with which it has not the least resemblance.

**Hairy Cinchona.** Tree 20 to 30 feet.

11 C. **stenočípa** (Lamb. cinch. p. 18.) leaves lanceolate, acute at both ends, naked above, but pilose on the veins beneath; teeth of calyx ovate, acute; corolla clothed by silky tomentum outside, with a glabrous limb; anthers sessile; style very short; stigma emarginate; capsule linear, terete. **S.** Native of Peru, in forests in the kingdom of Quito, near the city of Jaen de Bracamoros. Pavon. C. species nova, Pavon, mss. Panicle diffusely branched, pubescent. Segments of the corolla linear, obtuse. Very like C. Condaminéa, but very distinct.

**Narrow-fruited Cinchona.** Tree.

12 C. **caducifólia** (Bonpl. in pl. equin. 1. p. 167. H. et Kunth, nov. gen. amer. 3. p. 411.) leaves broad-ovobrate, acute at the base, naked and shining above, but pilose in the axils of the veins beneath; panicle brachiate, pubescent; calycine teeth ovate, obtuse; corolla clothed with silky down outside, having the limb glabrous above, and the segments linear-oblung; an-
thers a little exserted; style very short; stigma bipartite; capsules oval-oblong.  S. Native of Peru, on the Andes, near the city of Jaen de Bracamoros. Humboldt and Bonpland. C. magnifölia, Humb. et Bonpl. pl. equin. 1. p. 139. t. 39. exclusive of the synonyme of Flora Peruviana. Cascarilla bova of the Peruvians. Segments of corolla shorter than the tube. Lobes of stigma linear, flat.

Caduceous-flowered Cinchona. Tree 100 feet.

§ 2. Capsule dehiscing at the apex.—Aberrent species.

13 C. macrocrapá (Vahl, in act. havn. 1. p. 20. t. 3. exclusive of the synonymes. Lamb. mon. p. 22. t. 3.) leaves broad-elliptic, very blunt, densely clothed with rough tomentum beneath, as well as on the branches; calyx entire, with rather prominent teeth; corolla large, clothed by silky down outside, with a bearded limb, and lanceolate segments, which are recurved at the apex; stigmas inclosed; stigma emarginate; capsule pear-shaped, tomentose.  S. Native of Peru, in the forests of Loza, Guayaquil, and Cuenca; and of New Granada. C. ovatifolia, Mutis, mss. Humb. in mag. &c. p. 118. Cosmobuéna species nov. Pavon, mss. Called Quina blanco, and Quinquina blanco de Santa Fe. Corymb few-flowered. Calyx urceolate, entire. Style furrowed. This species ought not to be confounded with the C. ovatifolia of Humb., to which it has not the least resemblance.

Large-fruited Cinchona. Tree 30 to 40 feet.

14 C. oblongifolia (Mutis, mss. Humb. in mag. &c. p. 118. Rhode, mon. p. 57. exclusive of the synonymes,) leaves oblong or cordate, densely clothed with scabrous hairs on both surfaces, as well as the branchlets; pedicel bractate, corymbosus, scabrous from hairs; segments of corolla pilose outside, but glabrous inside, linear; genicula inclosed; anthers 3 times longer than the filaments; stigma bipartite; capsules ovate.  S. Native of Peru, in forests in the mountains of Loza; and of New Granada, near Maraquita. H. B. et Kunth, nov. gen. amer. 3. p. 401. exclusive of syn. of fl. per. and Ruiz, quimol. Called Quina roga and Cinchona vulgar Azahar. Flowers white. This is a very distinct plant from C. magnifölia of Ruiz et Pav. It is distinguished from it by its leaves being rounded at the base, often cordate, covered on both sides with rough pilose tomentum, sometimes the older leaves, however, become nearly naked above; the corolla is covered on the outside with bristly pilose hairs, while that of C. magnifölia has short down, and in the shape of the capsules.

Oblong-leaved Cinchona. Tree 12 to 20 feet.

15 C. magnifölia (Ruiz et Pav. fl. per. 2. p. 52. t. 196. but not of Humb. et Bonpl.) leaves broad-roundish-oval, naked and shining above, and densely clothed with tomentum beneath; pedicel bractate, corymbosus, tomentose; calycines teeth short, acute; corolla clothed with silky tomentum outside, but having the limbs glabrous above, and the segments lanceolate; anthers inclosed; style exserted; stigma bipartite; capsules linear, terete.  S. Native of Peru, on the Andes, in very hot places in forests, on the banks of the mountain streams, at Chinchao, Cuchero, and Chacabuaya. Ruiz et Pavon. C. oblongifolia, Steph. and Churchhil, med. bot. 4. t. 184. Cascarilla amarilla, Ruiz, quinol. p. 71. This species of Cinchona is regarded as yielding the red bark of the shops. Flowers white, sweet-scented.

Large-leaved Cinchona or Red Peruvian-bark. Tree 40 feet.

16 C. Pavonii (Lamb. cinch. p. 8.) leaves orbicular or cordate, naked above, but clothed with rusty tomentum beneath, as well as the branchlets; corolla clothed with rusty tomentum; calyx urceolate, entire, obsolescently denticulated; tube of corolla very long, clothed by silky tomentum outside, with a bearded limb; anthers sessile; stigma deeply bipartite; capsules very long, terete.  S. Native of Peru, in the kingdom of Quito, in groves at Loxa. C. cáva, Pavon, mss. Called Canela. Corollas crowded with flowers. Corollas large, with ovate-oblong obnute segments; anthers hardly exserted above the throat. Style inclosed; lobes of stigma linear, obtuse, with revolute edges. Capsule length and thickness of a finger. This species has considerable affinity with C. macrocrapá. The form of its leaves, the deeply bipartite stigma, its very long cylindrical capsules, however, widely separate it.

Pacoes's Cinchona. Tree.

17 C. acutifölia (Ruiz et Pav. fl. per. 2. p. 51. t. 225.) leaves lanceolate, acuminate, naked and shining above, but pilose at the veins beneath; segments of the calyx-linear-oblong, obnute; corolla clothed with silky tomentum on the outside, having the limb glabrous above, and the segments linear, acute; genicula inclosed; stigma bipartite; capsule pear-shaped, hairy, attenuated at the base.  S. Native of Peru, on the Andes in groves at the river Chilopaya. Cascarilla detrona aguda, Ruiz et Pav. suppl. quinol. p. 8. Pedicel bractate, densely clothed with pili. Lobes of stigma linear, obtuse.

Acute-leaved Cinchona. Tree 20 feet.

18 C. hexáandra; leaves large, oval, obtuse, clothed with ochraceous villi beneath, as well as on the branchlets and flowers; calyces 5-6-locelli; stamens 5-6.  S. Native of Brazil, in mountain woods, in the provinces of Rio Janeiro and Minas Geraes. Buena hexandra, Pohl. pl. bras. 1. p. 10. t. 8. China, Eschwege, journ. bras. 2. p. 86. Quino do Rio de Janeiro, mem. acad. Lisb. 3. pt. 2. p. 96. The bark is thin, of a bay colour on the outside, but blood-coloured within, very bitter, and is used by the Brazilians as a febrifuge, in place of Peruvian bark. Corolla purple.

Hexaandrous Cinchona. Tree.

§ 3. Flowers disposed in interrupted elongated axillary racemes. Capsules dehiscing from the apex. Seeds peltate, girdled by a membranous ring.—Remíjia, D. C. bibl. univ. 1829. scienc. vol. 2. p. 185; prod. 4. p. 357. The species are called Quina de Serra or Quina de Remijo throughout Brazil.

19 C. ferruginea (St. Hil. append. voy. p. 8. pl. usuel. bras. 1. t. 3.) leaves oblong-lanceolate, rather narrow, coriaceous, clothed with rusty villi beneath, as well as the branches, with revolute margins; racemes interrupted, hardly branched; corolla tomentose outside.  S. Native of Brazil, in the province of Minas Geraes, on arid mountains. Remijia ferruginea, D. C. prod. 4. p. 357. —Macrocnemum no. 1. Velloz. in Vand. fl. p. 14. Leaves usually 3 in a whorl. The fascicles of flowers on the raceme are opposite. The bark is bitter and astringent, and is used in place of Peruvian bark in Brazil, under the name of Quina de Remijo and Quina de Serra.

Rusty Cinchona. Shrub 4 to 5 feet.

20 C. vellózii (St. Hil. pl. usuel. bras. p. 1. no. 2.) leaves ovate, coriaceous, acuminated at both ends, clothed with rusty villi beneath as well as on the branchlets; racemes interrupted, hardly branched; corolla tomentose outside.  S. Native of Brazil, in the preceding. Remijia Vellózii, D. C. prod. 4. p. 357. —Macrocnemum, no. 2. Velloz. in Vand. fl. p. 14. This differs from the preceding species in the flowers being on shorter pedicles, in the bracteas being less linear, and in the flowers being longer and more numerous. Fascicles of flowers on the racemes opposite. The bark of the species is used in Brazil in place of Peruvian bark, under the name of Quina de Serra.

Vellós's Cinchona. Shrub 4 to 5 feet.

21 C. remijía (St. Hil. pl. usuel. bras. p. 1. no. 2. in a note) leaves broad-elliptic, obtuse, cuspidate; the upper ones decurrent at the base, clothed with rusty villi beneath, as well as the branchlets; racemes interrupted, hardly branched; corolla
villous on the outside. Ͻ. S. Native of Brazil, along with the two preceding species. C. Remýána, Spreng. syst. 1. p. 705. Remýána Hilárii, D. C. prod. 4. p. 357. Clusters of flowers opposite, on the raceme. The bark of this species is also used in place of Peruvian bark, under the name of Quina de Remýáno.

Remýáno’s Cinchona. Shrub.

22 C. Candollii; leaves oblong, acute, attenuated at the base, undulated, coriaceous; panicules axillary, verticillately branched: the branches interruptedly racemose; corolla villous on the outside. ϫ. S. Native of Brazil, Remýána paniculata, D. C. prod. 4. p. 357. Branches trigonal. Branches and branchlets of panicule angular. Leaves clothed with rusty down beneath, as well as the branchlets and panicle. Fruit unknown.

De Candolle’s Cinchona. Shrub.

† Species not sufficiently known.

23 C. Pelábera (Pav. quinol. ined. D. C. bibl. univ. 1829. &c.) leaves roundish, hardly apiculated, membranous, beset with velvety hairs on the petioles and on the nerves beneath, and velvety between the nerves, but puberulous above; stipulas oval, obtuse, equal in length to the petioles; panicule glabrous, much branched; fruit oblong-seriate, crowned by the calyx, glabrous. ϫ. S. Native of South America, and probably of Peru. This is a very distinct species. Fruit 6-7 lines long. Stipulas an inch long.

Pelábera Cinchona. Tree.

24 C. Muzonii (Goudot, in phl. mag. 1828. febr. p. 132.) leaves ovate-oblong, acute, attenuated at the base; stipulas revolute; panicule brachiate; corolla white, with a bearded limb. ϫ. S. Native of Columbia, in the extensive forests about the town of Muzo.

Muzo Cinchona. Tree.

25 C. Lamberti (Mart. in bot. zeitung, no. 7. p. 119. 1831.) branches and all the younger parts of the tree clothed with rusty hairs; leaves oblong-lanceolate, tapering into the short petioles, flat; thyrse axillary, interrupted, brachiate at the base; capsule oblong-cylindrical. ϫ. S. Native of South America, on the banks of the Amazon.

Lambert’s Cinchona. Tree.

26 C. Bergia (Mart. in bot. zeitung no. 7. p. 119. 1831.) branches and all the younger parts of the tree clothed with rusty hairs; leaves oblong-lanceolate, tapering into the short petioles, flat; thyrse axillary, interrupted, brachiate at the base; capsule oblong-cylindrical. ϫ. S. Native of South America, on the banks of the Amazon.

Bergius’s Cinchona. Tree.

Cult. All the species of this very interesting genus are grown with great difficulty in the stoves of our gardens. The best soil for them is a mixture of turfy loam and sandy peat. Cuttings should be taken off when ripe, and planted in a pot of sand, which should be plunged under a hand-glass in a moist heat.

XI. COSMIBUENA (named by Ruiz and Pavon after Cosimi Bueno, a Spanish physician, who has written on the natural history of Peru).  


LIN. SYST.  

Pentándria, Monógynia. Calyx 5-toothed. Corolla tubular, with a 5-lobed limb, which is imbricate in estivation. Stamens exerted; filaments bearded in the middle; anthers roundish, peltate; cells loosened at the base. Stigma 2-lobed. Capsule 2-celled, dehiscent in the middle of the cells, many-seeded: having the dissepiment complete. Seeds small and narrow.—A tree, native of Peru, with panicled inflorescence.

ovate. Capsules ovate, bisulcate, glabrous. Humboldt, on the authority of Zed., has joined this with Cinchona lanceifolia of Mutis, with which it has not the least affinity. Called Ascioniach in Peru.

Rose-colored-flowered Lasiocoma. Tree.

Cult. See Cinchona, p. 479, for culture and propagation.

XIII. LUCULIA (Luculi sava is the name given to the tree by the Nipaulese). Sweet. brit. fl. gard. t. 145. D. C. prod. 4. p. 357. D. Don, in Lin. trans. vol. 17. ined.

Lin. syst. Pentándria, Monogynia. Calyx 5-parted (f. 87. c.). segments foliaceous. Corolla tubular, with a 5-lobed limb, which is imbricate in astivation. Stamens almost inclosed (f. 87. a.). Anthers linear. Stigma bipartite (f. 87. b.) Capsule 2-celled (f. 87. b.), dehiscing from the apex, many-seeded, crowned by the calyx. Seeds samaroid, surrounded by a jagged membranous margin.—A tree, native of Nipal: having cymose bracteate inflorescence.

1 L. gratissima (Sweet, l. c.). f. Native of Silhet and Nipal, on the mountains. Cinchona gratissima, Wall. in Roxb. fl. ind. 2. p. 154. tent. fl. nep. t. 50. t. 21. Musse'n'da Luculia, Hamilt. in D. Don, prod. fl. nep. p. 129. A small branching tree, with terete pubescent branches; elliptic, acuminate leaves, which are glabrous above and villous on the veins beneath, on short petioles. Cymes terminal, many-flowered. Flowers rose-coloured, rather fleshy, sweet-scented. Stipulas solitary on each side, broad at the base and cupulose at the apex, longer than the petioles. Segments of calyx deciduous. It is impossible to conceive anything more beautiful than this tree, when covered with its numerous cymes of pink-coloured very fragrant flowers.

Very fragrant-scented Luculia. Fl. Aug. Sept. Cl. 1823. Tree 16 to 20 feet. Cult. A very good rich light soil will suit this tree; and cuttings may be rooted under a sand-glass, but with great difficulty.


Lin. syst. Pentándria, Monogynia. Calyx 5-toothed. Corolla tubular, with a 5-crested limb, which is plicate in astivation. Anthers linear, exerted. Stigma 2-lobed. Capsule 2-celled, dehiscing at the cells, many-seeded; valves ventricose, membranous. Dissemination complete. Seeds germinated by a membranous, reticulated border, which is bifid at the base.——Trees, natives of the East Indies, with compressed branches: coriaceous, petiole leaves; deciduous, glabrously ciliated stipules; and small, inconspicuous, greenish, pubescent flowers, disposed in fascicles, the whole forming racemose panicles. Floral leaves one under each branch of the panicle, lanceolate, convex, veiny, on long petioles, similar to the large calyceine teeth of Musa‘n’dā, but placed in a different situation.

1 H. excélim (Wall. in Roxb. fl. ind. 2. p. 358.) leaves oblong, downy: floral ones coloured and blunted; stipulas cordate, serrated; panicles axillary and terminal; anthers almost sessile in the mouth of the tube; partition of capsule contrary. f. S. Native of the East Indies, in the mountainous parts of the Circars, and chiefly of the valleys, where it grows to be a large tree. It is called Bönderőu in the Telinga language. Cinchona excélsa, Roxb. cor. 2. p. 3. t. 106. Tratt. tab. t. 170. The lower pair, or two of the ramifications of the panicle, are ornamented each with a pair of coloured floral leaves. Panicles terminal, large. Flowers fasciéd, small, greenish white. The infusion of one fresh leaf in water all night had little taste, but struck quickly a deep purplish blue with a chalybeate. The two inner coats of the bark (the outer light spongy stratum is tasteless) possess both the bitterness and astringency of Peruvian bark, and when fresh in a stronger degree; the bitterness is not so quickly communicated to the taste on chewing the bark, as that of the former, but is much more durable, and chiefly about the upper part of the fauces. The wood is firm, close-grained, of a pale mahogany colour, and very useful for many purposes.


2 H. thyrsiflorum (Wall. in Roxb. fl. ind. 2. p. 151.) leaves ovate, downy, pale beneath: the floral ones coloured and reticulated; thyrs terminal and axillary, drooping; stipulas oblong, fringed with coloured glands; limb of corolla cucullate; partition of capsule contrary. f. S. Native of the East Indies, in the interior parts of Bengal. Cinchona thyriflora, Roxb. Branches forming a large ovate head to the tree. Leaves from 2-8 or 10 inches long. Thyrs very dense. Flowers small, greenish yellow, fasciéd. The floral pair or two of leaves are on longer petioles than the rest.


3 H. fláccidum (Wall. in Roxb. fl. ind. 2. p. 152.) leaves ovate-elliptic, smooth, and shining above; stipulas oblong-spatulate, ciliate; racemes axillary, slender, pendulous; capsules oblong. f. S. Native of the East Indies, on the north side of Sheopore, towards the bottom; and in the valley of Noakote. Leaves from 6-10 inches long: having the margins slightly waved. Common peduncle pubescent, bearing a hardly coloured, lanceolate-oblong, pubescent, reticulated floral leaf, which is convex on the upper side, and concave on the under. It comes very near the preceding species, but differs, however, in having broader, elliptic, downy leaves, and much thicker both terminal and axillary subcompound racemes; its capsules too are much broader.

Flaccid Hymenodictyon. Tree 20 to 30 feet.

4 H. obovatum (Wall. in Roxb. fl. ind. 2. p. 153.) leaves obovate, acuminate, smooth; floral ones lanceolate, acuminate, reticulated, convex, glabrous; stipulas ovate, acute, glandularly ciliated; racemes axillary and terminal, a little branched, erect. f. S. Native of the East Indies, and perhaps of Wynand. Young shoots green, much compressed. Rachis of peduncles villous. At the apex of each peduncle there is a floral palel leaf, 2 inches long, convex and a little rugose above: glaucous and concave, beautifully veined, and rather pubescent beneath.

Obovate-leaved Hymenodictyon. Tree.

Cult. See Cinchona, p. 479, for culture and propagation.


Lin. syst. Pentándria, Monogyinia. Calyx 5-toothed. Corolla tubular, with a 5-parted limb: having linear, elongated
segments, which are undiplicate in section. Stamens exserted; anthers narrow-linear, having the cells adnate at the base. Stigma undivided. Capsule 2-celled, dehiscing at the dissepiment from the apex, many-seeded. Seeds girded by an entire membranous border.—Trees or shrubs, usually glabrous. Leaves oval or lanceolate, on short petioles. Stipules solitary on each side. Peduncles axillary and terminal. Flowers white or red. The barks of all the species are destitute of quinine and cinchonine, according to St. Hilaire.

**Sect. I. Pitaonia** (the bark of some of the species is called Quinquina Piton in the Antilles). D. C. prod. 4. p. 359. Limb of calyx parted almost to the base into teeth of various lengths. Corolla glabrous; having the tube longer than the segments. Stigma undivided.—Species all natives of the Caribbean Islands. The bark is febrifugal, somewhat emetic, and is sold in the shops under the name of Quinquina Piton of the Antilles.

1. **C. Caribbeum** (Rœm. et Schultes, syst. 5. p. 18.) leaves ovate-lanceolate, acuminate, glabrous; pedicels axillary, 1-flowered, rather shorter than the petioles; calyx bluntly 5-toothed; style and stamens about equal in length to the corolla. § S. Native of the Caribbean Islands, Guadaloupe, St. Domingo, Jamaica, Santa Cruz, &c.; and of Mexico. Cinchona Caribbea, Jacq. amer. t. 179. f. 65. obs. 2. t. 17. Lamb. mon. t. 4. Gaertn. fruct. 1. t. 33. f. 4. Cinchona Mayacensis, Wright, in roy. soc. trans. lond. p. 67. f. 504. t. 10. Andr. bot. rep. t. 481. Flowers white, sweet-scented, about the length of the leaves; but according to Jacquin they are pale flesh-coloured. Stamens, according to Andrews's figure, shorter than the segments of the corolla. Dr. Wright says that the jersuits' bark of Jamaica rises only to 20 feet, with leaves of a rusty green colour; and the young buds of a bluish green hue. The bark is generally smooth and grey on the outside, though in some rough and scabrous, when well dried, and the inside of a dark brown colour. Its flavour is at first sweet, with a mixture of the taste of horseradish and of the aromatics of the East, but when swallowed of that very bitterness and astringency which characterises the Peruvian bark. It grows near the sea shore, and is called in Jamaica Sea-side beech.


2. **C. Longifolium** (Rœm. et Schultes, syst. 5. p. 18.) leaves linear-lanceolate, acuminate, glabrous; pedicels axillary, very short; teeth of calyx linear, long-lanceolate, glabrous; corollas 3 or 4 times longer than the leaves. § S. Native of St. Domingo. Cinchona longifolia, Lamb. mon. p. 38. t. 12. exclusive of the synonyms. Flowers white, 5 inches long before expansion; segments linear; tube very long.

**Long-flowered Exostemma.** Fl. June, July. Clt. 1820. Tree 20 feet?

3. **C. Canescens** (Bartl. in herb. Henke, ex D. C. prod. 4. p. 359.) leaves ovate-oblong, acuminate, canescent from villi on both surfaces as well as on the branches; pedicels axillary, 1-flowered. § S. Native of Mexico. The canescent down on the leaves, branches, pedicels, and young fruit distinguishes it from all the other species. Flowers unknown. Capsule naked at the apex, not crowned by the calyx. Pedicels length of fruit. **Canescens** Exostemma. Tree.


**Narrow-leaved Exostemma.** Tree. 10 to 15 feet.

5. **E. Coriaceum** (Rœm. et Schultes, syst. 5. p. 20.) leaves ovate, scarcely acute, coriaceous, glabrous on both surfaces, shining; branches and flowers glabrous; pedicules axillary, 2-3-flowered; teeth of calyx short, acute; corollas about the length of the leaves; capsules ovate, smooth. § S. Native of St. Domingo. Cinchona coriacea, Poir. dict. 6. p. 38. Pedicules 2 or 3 times shorter than the leaves. Seed girded by a membranous wing. Corolla glabrous, 2 inches long, with a terete tube and narrow reflexed segments. Branches of pericarp dichotomous.

**Coriaceous-leaved Exostemma.** Tree.

6. **E. Lineatum** (Rœm. et Schultes, syst. 5. p. 18.) leaves ovate, acuminate, and are as well as the branches and flowers glabrous; pedicules terminal, coriaceous; calyce segments linear; capsule pentagonal. § S. Native of St. Domingo. Cinchona lineata, Vahl. symb. 1. p. 27. act. soc. hist. nat. hafn. 1. p. 20. t. 4. Lamb. mon. p. 26. t. 6. Panicle coriaceous, terminal, trichotomous. Leaves marked with lines on the upper surface. Flowers an inch long, white.

**Lined-leaved Exostemma.** Tree. 20 to 30 feet.

7. **E. Parvifolium** (Rich. in Humb. et Bonpl. pl. equin. 1. p. 132.) leaves ovate, mutic, furnished with porose glands in the axils of the nerves; petioles, branches, and pedicules pubescent; fascicles of flowers axillary and terminal, crowded; teeth of calyx short. § S. Native of the Caribbean Islands.

**Small-flowered Exostemma.** Tree.

8. **E. Brachycarpum** (Rœm. et Schultes, syst. 5. p. 19.) leaves elliptic, obtuse, and are as well as the branches and flowers glabrous; pedicules terminal, coriaceous; teeth of calyx short, acute; capsules ovate or obovoate, ribbed. § S. Native of the eastern parts of Jamaica, in shady parts of mountains. Cinchona brachycarpa, Swartz, prod. p. 42. fl. ind. occid. 378. Lindsay, roy. soc. trans. edinb. 1794. p. 214. t. 5. Vahl. act. soc. hist. nat. hafn. 1. p. 22. Lamb. cinch. p. 18. t. 8. Panicle terminal, coriaceous, trichotomous. Corolla 3/4 inches long before expansion, pale red or flesh-coloured. Leaves 5-6 inches long, deep green. The bark, when wounded, emits a whitish juice; which becomes of a brownish purple colour on drying, and is easily reduced into a greyish purple powder, which is at first sweet, but afterwards very bitter and astringent.

**Short-fruited Exostemma.** Tree. 20 feet.

9. **E. Triploium** leaves lanceolate, obtuse, attenuate at the base, quite glabrous, and shining on both surfaces; branches glabrous; coriums compound; pedicules 2-3-flowered; calyce teeth subulate; corolla with a very long filiform tube, and long, narrow, linear, dependent segments; capsule obovoate. § S. Native of Jamaica. Cinchona triflora, Wright, in edinb. med. journ. p. 240. Lamb. cinch. p. 15. It comes nearest to E. floribunda, but differs from it in the leaves being ovate-elliptic, acuminate, not attenuated at the base; the coriums of flowers are also much larger and closer; the teeth of the calyx are shorter and broader; the tube of the corolla is much shorter and wider; and the capsules oblong-cylindrical.

**Three-flowered Exostemma.** Tree. 20 feet.

10. **E. Floribunda** (Rœm. et Schultes, syst. 5. p. 19.) leaves elliptic, acuminate, and are as well as the branches and flowers glabrous; pedicules terminal, coriaceous; teeth of calyx short, acute; capsules turbinate, smooth. § S. Native of the Caribbean Islands, Jamaica, Guadaloupe, St. Domingo, St. Lucia, and Trinidad, in woods on the banks of mountain streams. Cinchona floribunda, Swartz, prod. p. 41. fl. ind. occid. p. 375. Lamb. mon. p. 17. t. 7. Cinchona montana, Badier, in journ. phys. 1789. febr. p. 129. t. 1. Cinchona, St. Lucie, David, phil. vol. III.

**Bundl-flowered Exostemma.** Ckt. 1794. Tree 20 to 80 ft.

11 E. capítât'um (Spreng. new. entd. 2. p. 143.) leaves ovate, coriaceous, glabrous; flowers capitae; calyx small, 5-toothed; corolla with a long tube, and revolute segments. & S. Native of South America. Perhaps only a variety of E. floribándum. Specimens of this tree were received under the name of St. Lucia bark.

**Capitate-flowered Exostemma.** Tree.

**Sect. II. Brachy'a nthum (from βραχύς, brachyús, short, and ἀνθος, anths, a flower; in reference to the tube of the flower being shorter than the segments).** D. C. prod. 4. p. 560. Limb of calyx divided even to the base into teeth. Corolla having the tube shorter than the segments of the limb, or at the longest hardly equal in length to them. Stigma sometimes undivided, and sometimes somewhat 2-lobed. Corolla glabrous, or pubescent on the outside.

12 E. philipp'cum (Rem. et Schultes, syst. 5. p. 366.) leaves oval, acute, crowded, and are as well as the branches and flowers glabrous; peduncles terminal, corymbose; teeth of calyx short, acute; tube of corolla rather shorter than the segments of the limb, filaments hairy. & S. Native of the Philippine Islands, at Manila: and in Santa Cruz de la Laguna. Cinechôna Philippica, Cav. icon. 4. t. 329. Peduncles axillary, trichotomous, corymbose, bearing 2 leaves at the origin of the branches, about the length of the leaves. Corolla 9 lines long before expansion. Stigma clavate, marked by a furrow on each side, probably from the cohesion of the lobes. Capsule turbinate, 5 lines long, crowned by the calycine limb. Bark bitter and astringent.

**Philippine Exostemma.** Tree 10 to 15 feet.

13 E. corymbos'um (Rem. et Schultes, syst. 5. p. 20.) leaves oblong, acute, and are as well as the branches and flowers glabrous; peduncles axillary, corymbose, bearing 2 leaves just below the ramifications; teeth of calyx short, acute; segments of corolla hardly shorter than the tube. & S. Native of the islands of Tongatabu and Enoe, in the Pacific Ocean, where it is cultivated for the elegance and colour of its flowers. Cinechôna corymbifera, Forst. act. nov. ups. 3. p. 176. Lim. fil. suppl. p. 144. Lamb. cinch. p. 25. t. 5. Leaves deep green, size of those of Coffea Arabica: having the nerve purplish beneath. Corollas trichotomous. The bark is very bitter and sub-astringent, and very like Jesuits' bark. Flowers white, but reddish on the outside.

**Corumb-bearing Exostemma.** Tree 10 to 15 feet.

14 E. peruv'ianum (Humb. et Bonpl. pl. equin. 1. p. 133. t. 38.) leaves ovate or oblong, acute, rounded at the base: the superior ones sessile and coriâte; corymbal terminal, sessile; peduncles and calyxes pubescent; corolla silky outside. & S. Native of Peru, on the declivities of the Andes, in cold places by the sides of streams, at the altitude of 3000 feet. H. B. et Kunth, nov. gen. amer. 3. p. 404. Cinechôna Peruviana, Poir. suppl. 4. p. 640. Flowers rose-coloured. Leaves smooth, deep green above. Segments of corolla hardly shorter than the tube. Filaments glabrous, adnate to the throat of the corolla. Stigma obsolete 2-lobed. Teeth of calyx acute.

**Peruvian Exostemma.** Tree 10 to 12 feet.

15 E. corymbos'um (Spreng. syst. 1. p. 706.) leaves oblong-lanceolate, acute, and are as well as the branches and flowers glabrous; corymbose terminal, bracteate; teeth of calyx almost linear, acute, spreading: segments of corolla about equal in length to the tube. & S. Native of Peru, in hot places between Chaulla and Muna. Portândia corymbosa, Ruiz et Pav. fl. per. 2. p. 49. t. 190. f. a. Leaves shining above, 2-3 lines long. Corolla white: having the limb reflexed. Capsule fuscous, turbinate. Seeds girdled by a membranous wing, hence it is not a species of Portândia.

**Corymbose-flowered Exostemma.** Tree 15 to 18 feet.

16 E. dissimiliflorum (Rem. et Schultes, syst. 5. p. 17.) leaves cordate-oblong, quite glabrous; limb of corolla longer than the tube; capsules almost linear, very narrow. & S. Native of South America, at the altitude of 6000 or 7000 feet. Cinechôna dissimiliflorum, Mutis, in Humb. berl. mag. nat. 1. p. 120.

**Dissimilar-flowered Exostemma.** Tree.

**Sect. III. Pseudosté'mma.** Limb of calyx campanulate, sub-tubular, truncate, or somewhat 5-toothed. Corolla usually villous on the outside: having the tube shorter than the segments of the limb. Stigma usually 2-lobed. Fruit unknown. Flowers disposed in panicules. Species natives of Brazil. Perhaps a proper genus.

17 E. cuspidat'um (St. Hil. pl. usuel. bras. 1. t. 3. f. A.) leaves ovate-lanceolate, cuspidate, nerved, villous beneath; pedicel terminal; limb of calyx campanulate, tubular, obscurely 5-toothed, longer than the ovariun; corolla villous on the outside: with the segments longer than the tube; filaments glabrous; stigma undivided. & S. Native of Brazil, in woods. Leaves 9-15 lines long. Corolla white, 2-4 lines long. Fruit unknown. It is called Quin do moto, and the bark is used as a substitute for Peruvian bark.

**Cuspidate-leaved Exostemma.** Tree 8 to 10 feet.

18 E. austral'è (St. Hil. pl. usuel. bras. 1. t. 3. f. B.) leaves ovate, nerved, rather villous beneath; pedicel terminal, sessile, tripartite; limb of calyx campanulate, shorter than the ovariun, bluntly 5-toothed; corolla rather pubescent on the outside: with the segments longer than the tube; filaments glabrous; stigma undivided. & S. Native of Brazil, in woods. Leaves 12-15 inches long, and 7-8 broad. Style villous. The bark of this and the preceding species is employed by the Brazilians in the cure of intermittent fevers, from the want of more efficacious remedies. It is bitter and a little astringent.

**Southern Exostemma.** Tree 8 to 10 feet.

19 E. romos'um (Cham. et Schlecht. in Linnaea. 4. p. 170.) leaves obovate-elliptic, acute at both ends, rather granular when examined under a lens; panicle trichotomous, loosely pyramidal; limb of calyx quite entire; corolla glabrous on the outside, but the throat is villous, and the segments are rather pilose on the inside, and a little longer than the tube; stigma 2-lobed. & S. Native of Brazil, within the tropics.

**Grow Exostemma.** Tree.

20 E. souza'num (Mart. reis. ex Linnaea. 5. p. 45.) leaves obovate or ovate, acute, glabrous; corollas few-flowered, terminal; capsules hardly an inch long, obovate, compressed; valves usually 4-nerved; seeds transversely oblong, with a broad margin. & S. Native of Brazil.

**Souza's Exostemma.** Tree.

21 E. macrocômeanus; branches naked; leaves oblong-spathulate, acuminate, tapering into the short petiolo, smooth on both
surfaces, shining; stipulas connate at the base, and running sound the petioles, and forming a cumbous semicircular margin to them; thryse axillary, panicled, loose; flowers minute, tetramerous; fruit cylindrical; seeds furnished with a quite entire rounded membrane at both ends. H. S. Native of South America. Cichorea macrocnemia, Mart. in bot. zeit. no. 7. p. 119. 1831.

Long-stemmed Exostemma. Tree.

Cult. See Cichorea, p. 479., for culture and propagation. The species are of freer growth than those of Cichorea; and the cuttings should not be too ripe when taken off.


Lin. syst. Pentândria, Monogyinia. Flowers dioecious from abortion. Calyx with a short ovate tube, and a small limb, which is 5-toothed to the base. Corolla funnel-shaped, with a slender tube, a villous throat, and a 5-parted limb. Stamens exerted in the male flowers, but abortive and inclosed in the female flowers. Style exerted in the female flowers, and bifid at the apex, but abortive in the male flowers. Capsule globose, coriaceous ciliate, marked by an areola at the apex from the fallen calyx, 2-celled, dehiscing at the cells, 2-valved. Seeds small, fixed to central placenta, imbricated downwards, gilt by a membranous wing; albumen fleshy.—Smooth, climbing, or straggling shrubs, natives of the Mauritius. Roots exuding a yellow juice when bruised. Leaves oblong or roundish. Stipulas solitary on each side, broad, very short. Peduncles axillary, many-flowered, corymbose, with opposite branchlets. Flowers fragrant, orange-coloured, sometimes hexamorous.


Fragrant Danais. Shrub cl.

2 D. laxiflôra (D. C. prod. 4. p. 361.) leaves ovate, oblong, obtuse, and cuspidate; coryrbms loose, sub-panicled; capsule not furrowed, crowned by the erect permanent calyceal teeth. H. C. Native of Madagascar and Bourbon. Peti¬oles 4 lines long. Panicle of female flowers 2—3 inches long, but that of the males is unknown.

Loose-flowered Danais. Shrub cl.

3 D. rotundifôlia (Poir. suppl. 2. p. 450.) leaves ovate-roundish, leath W the apex; corybms crowded; capsule not furrowed, crowned by the toothless truncate limb of the calyx. H. C. Native of the Mauritius, where it is called Liane de bois jaune. Cinchôna chloorhiza, Bory, in litt. Malânea verticillata, Sieb. fl. maor. exsic. 2. p. 264. exclusive of the synonyms. Peti¬oles 7—8 lines long. Corybms hardly an inch, much shorter than the leaves. Flowers small. Leaves 2—3 inches long.

Round-leaved Danais. Shrub cl.

4 D. sulcâta (Pers. ench. 1. p. 198.) leaves ovate; capsule furrowed, crowned by the calycine segments, which are folia¬ceous. H. C. Native of the Mauritius, where it climbs over the highest trees.

Furrowed-fruited Danais. Shrub climbing.

Cult. A mixture of loam, peat, and sand will be a good soil for the species of Danais; and cuttings will easily rooted under a hand-glass, in heat. They are well fitted for training up the rafters in a stove.


Lin. syst. Tetra-Pentândria, Monogyinia. Calyx with a turbinate tube, and the limb parted into as many lobes as there are corolline segments, or double that number (f. 88. a), and often furnished with lobes in the recesses between the segments. Corolla funnel-shaped, with a terete tube, a hairy throat (f. 88. c), and a 4 (f. 88. b), rarely 5-parted limb. Anther sessile in the throat. Capsule ovate, compressed, crowned by the calycine lobs (f. 88. d), dehiscing from the apex to the base at the dissepiment (f. 88. d); the divisions boat-shaped. Placentas somewhat exerted from the dissepiment. Seeds innumbered, almost sessile, peltate, surrounded by a winged membranous border, which is usually too small. Embryo erect in the albumen; cotyledons foliaceous, lanceolate.—Perennial, herbaceous, or suffruticose plants: having the stems and branches twining and slender. Leaves ovate-oblong, or subcordate. Stipulas broad, short, acute, usually adhering to the petioles at the base. Peduncles axillary, 1 or many-flowered.

Sect. I. Lygìstum (from aygos, hygos, a twig; in reference to the twiggy stems). D. C. prod. 4. p. 362. —Lygìstum, P. Browne. —Manettia, Mutis, Lin. and Schreb. Lobes of calyx twice the number of those of the segments of the corolla, usually 8 (f. 88. a), rarely 10; besides the accessory lobules.

1 M. reclinâta (Lin. mant. p. 553.) stem herbaceous, re¬cline, weak, branched; leaves ovate, acute, pubescent beneath; peduncles axillary, many-flowered, shorter than the leaves; pedicels opposite, hairy. C. Native of Mexico. Corolla white. Calyx 8-lobed; lobes linear, concave, hairy. Nacibea reclinata, Poir. in Lam. dict. 4. p. 416.

Recline-branched Manettia. Pl. tw.

2 M. racemoâsa (Ruiz et Pav. fl. per. 1. p. 58. t. 89.) stems twining; branches tetragonal; leaves ovate or oblanceolate, acuminated; stipulas semi-circular, acuminated, ciliated; racemes axillary, few-flowered, longer than the leaves; corollas hairy. H. C. Native of Peru, in groves at Cuchero and Chinchao.

M. mutâbilis, Pers. ench. 1. p. 134. Nacibea mutâbilis, Poir. suppl. 4. p. 55. Lobes of calyx 8, but in the ultimate flowers 10, according to the figure; and sometimes 4-5, according to the description. Corolla purplish.

Racemose-flowered Manettia. Shrub tw.

3 M. cocêcina (Willd. spec. 1. p. 625.) stems twining; branches tetragonal; leaves ovate, acuminated, glabrous, shining; stipulas oblanceolate, acuminated, ciliated; racemes axillary, racemose, few-flowered, shorter than the leaves. H. C. Native of French Guiana. Ker. bot. reg. 693. Nacibea cocêcina, AUBL. 3 q 2
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guian. 1. p. 96. t. 37. f. 1. Calyx oblong, compressed: having 4 furrows on each side, and 8-lobed at the apex; lobes narrow, acute, fleshy. Corolla having a white tube, spotted with red, a throat closed by yellow hairs: and 4 oval, acute lobes, which are scarlet and villous above.


4 M. lygistum (Swartz, prod. 4. p. 362. fl. ind. occ. p. 323.) stem suffruticosus, flexuous, scandent; branches filiform; leaves ovate, acute, veiny, roughish on the nerves beneath; stipulas subulate, very short; peduncles axillary, longer than the leaves, many-flowered. Ψ. ♂. S. Native of the south of Jamaica, on the higher mountains. Spreng. syst. 1. p. 413. exclusive of the syn. of Kunth. Lygistum, Browne, jam. p. 144. t. 3. f. 2. but the calyx is said to be 4-lobed and the fruit bacate and 4-celled, and is therefore the Petesia Lygistum, Lin. spec. 160. the Lygistum assimilare, Lam. ill. 1. p. 826. t. 67. f. 2., in which the calyx is also delineated with 4 lobes, and therefore also the Cococypsilum biforum, Wild. spec. 1. p. 618.; the Fernélia bifóra, Roem. ut Schultes, syst. 3. p. 187. Perhaps 2 species are here confused, one with a 4-lobed calyx and the other with an 8-lobed calyx: having 4 of the lobes lanceolate, and 4 of them tooth-formed and smaller.


5 M. havanense (H. B. et Kunth, nov. gen. amer. 3. p. 388.) stems twining; branches angular; floriferous branchlets by threes; 1-3-flowered; leaves ovate-oblong, acuminate, glabrous. Ψ. ♂. S. Native of Cuba, in humid places near the Havana. Leaves usually 3 in a whorl. Flowers unknown. Capsule roundish, crowned by the 8 linear lobes of the calyx. Seeds girded by a jagged wing.

Havanah Manettia. Shrub tw.

6 M. cuspidata (Bert. in Spreng. syst. 1. p. 415.) plant glabrous; stems twining; branches filiform, rather tetragonal; leaves oval-oblong, acuminate; stipulas broad, very short, peduncles axillary, bipartite; pedicels elongated, 1-flowered. Ψ. ♂. S. Native of Jamaica, Trinidad, and Mexico. Calyx roughish, turbinate, with 8 linear elongated subulate lobes. Corolla smoothish. Capsule oval, compressed, glabrous, with 8 nerves, which remain after the seeds have fallen. Seeds girded by a toothed wing.

Cuspitate-leaved Manettia. Shrub tw.


 Sect. II. Nafiâea (Aublet does not give the meaning of this word). D. C. prod. 4. p. 363. Lobes of calyx equal in number to the lobes of the corolla, usually 4, without any accessory lobules.

8 M. cordifolia (Mart. spec. mat. med. bras. 1. p. 19. t. 7.) stems herbaceous, twining, terete, roughish; leaves ovate, corolate at the base, acute at the apex, finely pubescent on both surfaces; peduncles axillary, 1-flowered. Ψ. ♂. G. Native of Brazil, in the province of Minas Geraes, at Villa Rica, in hedges and on the margins of woods. Roots woody, brown, and are an excellent remedy in dropsy and dysentery. Lobes of calyx 4, ovate-lanceolate, downy. Corolla scarlet, an inch long, glabrous outside, and villous inside.


9 M. glabra (Cham. et Schlecht. in Linnaea. 4. p. 159.) plant quite glabrous; stems twining; leaves corolate, acuminate; peduncles axillary, 1-flowered. Ψ. ♂. G. Native of the South of Brazil, among bushes, on the banks of rivers and rivulets, as on the Uruguay. Corolla scarlet, glabrous on the outside, but clothed with white villi above the base inside. Stigma club-shaped. Stipulas with a subulate point in the middle. Segments of calyx narrower than in M. cordifolia, which plant is very similar, and which Hook. and Arnott consider identical.

Glabrous Manettia. Pl. tw.

10 M. graecilis (Cham. et Schlecht. in Linnaea. 4. p. 169.) plant puberulous, twining; leaves petiolar, ovate-lanceolate, acuminate; peduncles axillary, 1-flowered; calyx glabrous. Ψ. ♂. S. Native of the south of Brazil. Very like M. glabra, but is distinguished by the characters given, in the flowers being smaller and slenderer, also scarlet; in the calycine lobes being narrower, and in the anthers being linear.

Slender Manettia. Pl. tw.

11 M. pubescens (Cham. et Schlecht. l. c. p. 170.) plant cinereous from down; stems twining; leaves petiolar, ovate, obtuse at the base, and acuminate at the apex; stipula furnished with a short acumen; peduncles axillary, 1-flowered; calyx segments longer than the tube, but at length equal with it. Ψ. ♂. S. Native of the south of Brazil. Very like the two preceding species. Corolla scarlet, 3 times longer than the limb of the calyx.

Pubescent Manettia. Pl. tw.

12 M. villosa (Cham. et Schlecht. l. c. p. 172.) plant twining; branches cinereously tomentose from roughish down; leaves petiolar, ovate, somewhat acuminate, acutish at the base; stipulas triangular; peduncles axillary, 1-flowered; segments of the calyx linear, one half shorter than the tube of the corolla; corolla pubescent on the outside; capsule ovate, rather villous. Ψ. ♂. S. Native of the south of Brazil.

Villos Manettia. Pl. tw.

13 M. attenuata (Nees et Mart. in nov. act. bonn. 12. p. 14.) stem scandent, almost terete, roughish; leaves ovate-lanceolate, attenuated at both ends, clothed with pubescent tomentum beneath; peduncles axillary, 1-flowered. Ψ. ♂. S. Native of Brazil, on the road to Felisbert, and in fields at the mountain called Grão-major, in the province of the Mines. Lobes of calyx 4, lanceolate, acuminate, erect, pubescent. Corolla glabrous, 2 inches long, crimson, with ovate acutish reflexed lobes. Upper leaves 3 in a whorl.

Attenuated-leaved Manettia. Shrub tw.

14 M. acutifolia (Ruiz et Pav. fl. per. 1. p. 58. f. 89. f. b.) plant glabrous; stems twining, terete; leaves lanceolate, very acute, petiolar; stipulas acuminate, adpressed, broad at the base; peduncles axillary, 1-3-flowered; tube of corolla hardly longer than the calyx. Ψ. ♂. S. Native of Peru, in groves, in the province of Panathula. M. acutifóra, Roem. et Schultes, syst. 3. p. 203. Nacibe acutifóra, Poir. suppl. 4. p. 55. Lobes of calyx 4, lanceolate-linear, acute. Corolla purple, villous outside, as well as in the throat.

Acute-flowered Manettia. Shrub tw.

15 M. umbellata (Ruiz et Pav. fl. per. 1. p. 58. f. 90. f. a.) plant glabrous; stems scandent, terete; leaves ovate and rather corolate, acute; stipulas broad at the base, acuminate, adpressed; peduncles axillary, many flowered, umbellate. Ψ. ♂. S. Native of Peru, in groves, at Muna. Nacibea umbellatâ, Poir. suppl. 4. p. 55. Bracteas 2-4, surrounding the flower in the manner of an involucrum. Lobes of calyx 4, lanceolate. Corolla blue, with a bearded throat.

Umbellate-flowered Manettia. Shrub cl.
16. M. rosea (Pohl, in litt. ex D. C. prod. 4. p. 364.) stems rather twining, compressedly angular, rather pubescent; leaves oblong, acuminate, glabrous; stipules broad, short, acuminate; peduncles axillary, bifid, 2-flowered, shorter than the leaves.  5. S. Native of Brazil. Lobes of calyx 4, lanceolate, longer than the tube of the corolla. Corollas rose-coloured, larger than in any other species of the genus, pubescent outside, with oblong ciliated segments.


Painted-leaved Manettia. Shrub tw. 18. M. fimbriata (Cham. et Schlecht. in Linnaea. 4. p. 173.) plant twining and quite glabrous; leaves petiole, elliptic, acuminate, acute at the base; peduncles lateral, 1-3-flowered; lobes of calyx ovate-lanceolate, a little shorter than the tube of the corolla; lobes of corolla fringed with long hairs; stigma 4-lobed.  5. S. Native of the south of Brazil.

Fringed-flowered Manettia. Pl. tw. 19. M. pseudodidyma (Cham. et Schlecht. l. c. p. 174.) stems twining, obscurely tetragonal, glabrous, marked by a ciliated line at the apex; leaves petiole, broad-oval, acuminate, acute at the base; stipulas triangular, ciliated; peduncles lateral, 1-3-flowered; segments of calyx lanceolate, acuminate, ciliated; corolla clothed with glabrous tomentum outside; capsule tetragonal, apex-ridged. 5. S. Native of the south of Brazil.

Didyma pedunculata, Spreng. syst. 1. p. 405.

False-Didyma Manettia. Pl. tw. 20. M. ciliata (Cham. et Schlecht. l. c. p. 176.) stems twining, tetragonal; angles winged, ciliated; leaves on short petioles, lanceolate, acuminate, ciliated, rather coriaceous; stipulas ciliated, ending each in a reflexed acumen; peduncles 1-3-flowered, pubescent; segments of calyx lanceolate, acuminate, ciliated; corolla clothed with rusty tomentum on the outside; capsule obconical. 5. S. Native of the south of Brazil.

Ciliated-stemmed Manettia. Pl. tw. 21. M. albiflora (Schott, mss. ex Pohl, in litt. D. C. prod. 4. p. 364.) stems herbaceous; branches tetragonal, rather pilose; leaves oblong, acuminate at both ends, pubescent on both surfaces; stipulas broad, short, cuneate; pedicles numerous, 1-flowered, rising unembarrassedly from the axis of the leaves. 5. 5. S. Native of Brazil. Calyx with a turbinate, rather tetragonal tube, and 4 lanceolate lobes. Corolla white. Fruit unknown.

White-flowered Manettia. Pl. tw.

† Species not sufficiently known.

22. M. gertneri (D. C. prod. 4. p. 364.) stems and leaves unknown; capsule ovate, compressed a little, hisulate, crowned by the 4-parted limb of the calyx.—The rest unknown. Nacibea ghabara, Gertn. fil. carp. 3. p. 102. t. 197. f. 5. Gertner's Manettia. Pl. tw.


Second-flowered Manettia. Pl. cl.

Cult. All the species of Manettia are worth cultivating for the beauty and elegance of their flowers. A mixture of loam peat and sand is the best soil for them. They are easily propagated by young cuttings in the same kind of soil under a glass-


Lil. syst. Tetrandria, Monognia. Calyx with a subglobose tube (f. 89. a.), and a 4-parted limb (f. 89. b.); lobes linear-subulate (f. 89. b.); sometimes with a tooth between each lobe. Corolla funnel-shaped (f. 89. e.), tubular, elongated, beset with velvety papilla outside, with a naked throat, and a 4-parted spreading short limb (f. 89. d.). Stamens having the filaments adnate to the tube at the base, and free from about the middle (f. 89. e.); anthers linear, inclosed. Stigma bilamellate (f. 89. g.), exserted. Superior part of the ovary naked. Capsule membranaceous, globose, a little compressed, 3-celled, and dehiscing at the cells above; valves semi-septiferous. Placentas orbicular. Seeds many in each cell, compressed, imbricated downwards according to the figure of Salisbury, but upwards according to the figure in fl. mex., girded by a membranous wing.—Shrubs, natives of Mexico. Leaves opposite or in whorls. Stipulas narrow, acute, adnate to the pedicels on both sides. Peduncles terminal, 3-flowered or trichotomous and corymbose.—This genus is very nearly allied to Manettia.

§ 1. Leaves disposed in whorles. Corollas flesh-coloured or pale red, having the tube bearded inside.

1 B. linearis (H. B. et Kunth, nov. gen. amer. 3. p. 383.) branches terete, when young pubescent; leaves 3 in a whorl, linear, with revolute edges, scabrous above, but canescent from hairs beneath; corollas trichotomous; lobes of calyx 5 times shorter than the tube of the corolla, which is hairy. 5. G. Native of the temperate parts of Mexico, near St. Augustin de Las Cuevas, Morán, &c. Corolla 8 lines long, pale red.

Linear-leaved Bouvardia. Shrub 5 feet.

2 B. angustifolia (H. B. et Kunth, l. c. p. 384.) branches terete, smoothish; leaves 3 in a whorl, lanceolate, with revolute edges, glabrous above, but beset with fine hairs beneath; corollas somewhat trichotomous; lobes of calyx 2 or 3 times shorter than the tube of the corolla, which is hairy. 5. G. Native of temperate parts of Mexico, along with the preceding. There is a variety of this species with 5-cleft flowers. Flowers pale red.

Narrow-leaved Bouvardia. Shrub.

3 B. hartellii (H. B. et Kunth, l. c.) branches terete; branchlets and leaves hairy on both surfaces, lanceolate, with revolute edges; flowers corymbose; lobes of calyx 5-6 times shorter than the tube of the corolla, which is hairy. 5. G. Native about the city of Mexico. Flowers pale red or flesh-coloured.

Hairy Bouvardia. Shrub.

4 B. quadriflora (D. C. prod. 4. p. 365.) branches striated, rather downy; leaves 4 in a whorl, lanceolate, acuminate, rather scabrous above, and pubescent beneath; corollas trichotomous; lobes of calyx 6 times shorter than the tube of the
corolla, which is pilose. \( \text{G} \). Native about the city of Mexico. Carphâlea? pubiflora, Moc. et Sesse, fl. mex. icon. ined. Flowers scarlet, 12-14 lines long. Perhaps only a variety of \( B. \) kietëlla.

Four-leaved Bouvardia. Shrub.

5 B. Jacquinii (H. B. et Kunth, l. c. p. 385.) branchlets trigonal, and are, as well as the under side of the leaves, hairy; leaves smoothish above, 3 in a whorl, oblong; corymb somewhat trichotomous; lobes of calyx 5 times shorter than the tube of the corolla, which is hairy. \( \text{G} \). Native near the city of Mexico. Isôra Americana, Jacq. hort. schöenbr. 3. p. 9. t. 257. Isôra termifolia, Cav. icon. 4. p. 3. t. 305. exclusive of the description of the seeds.


\( \text{Var. } \beta. \) exögyra (D. C. prod. 4. p. 365.) leaves oblong-lanceolate, acuminate; style exerted. \( \text{G} \). Cultivated in gardens.

\( \text{Var. } \gamma. \) ovita (D. C. l. c.) leaves ovate, acute. \( \text{G} \). Bouvardia triphylla, var. \( \beta. \) Salmis. parad. t. 88.

Jacquin's Bouvardia. Fl. April, Nov. Cit. 1794. Shrub 2 to 3 feet.

6 B. ? obovA (H. B. et Kunth, l. c. p. 385.) branches tetragonal, striated, and are, as well as the leaves, smoothish; leaves 4 in a whorl, obovate; corymb trichotomous. \( \text{G} \). Native of Mexico, between Chapo-tepec and Tzecuaro. Herb 1-3 feet high, ex Bonpland. Perhaps this is a true species of Bouvardia, ex Kunth.

Obovate-leaved Bouvardia. Pl. 1 to 3 feet.

§ 2. Leaves opposite. Corolla with a beardless tube.

7 B. versicolor (Ker, bot. reg. t. 254.) branches terete, glabrous, velvety while young; leaves opposite, lanceolate, ciliated; corymb 3-flowered, trichotomous, drooping; lobes of calyx 8 times shorter than the tube of the corolla, which is glabrous both inside and outside. \( \text{G} \). Native of South America, but in what place is unknown. Corolla with a scarlet tube, which is 9 lines long, but having the limb yellowish inside.


8 B. triflôrâ (H. B. et Kunth, nov. gen. amer. 3. p. 386. t. 288.) branches terete, glabrous; branchlets rather hairy; leaves opposite, lanceolate-oblong, acute, rounded at the base, beset with fine hairs; peduncles terminal, 3-flowered; lobes of calyx 3 or 4 times shorter than the tube of the corolla, which is glabrous. \( \text{G} \). Native of the temperate parts of Mexico. Céstrum spermocociflórum, Willd. reflex. miss. in Rcm. et Schultes, syst. 4. p. 808. Corolla white, with the tube 5-6 lines long.

Three-flowered Bouvardia. Shrub.

9 B. longiflôrâ (H. B. et Kunth, l. c. p. 386.) branches compressedly tetragonal, glabrous; leaves opposite, oblong, acute, cuneated at the base, glabrous; flowers terminal, solitary, sessile; lobes of calyx 3 or 4 times shorter than the tube of the corolla, which is glabrous. \( \text{G} \). Native of temperate parts of Mexico, near Santa Ana, where it is called by the natives \( \text{Flor de San Juan}; \) also near Queretaro and Huanacuajuto, ex Cav.; and at Pasquaro, ex Cervantes, in herb. Haecke. \( \text{G} \). Bouvardia longiflora, Cav. icon. 6. p. 51. t. 572. f. 1. Corolla white, with the tube 3 or 3 inches long. Stipules usually cleft into 2 awns at the apex.

Long-flowered Bouvardia. Clt. 1827. Shrub 2 to 3 feet.

10 B. Cavanillesii (D. C. prod. 4. p. 366.) suffrutescous; leaves opposite, ovate-lanceolate, acuminated, rather villous beneath; peduncles terminal, trifid, 3-flowered; capsule transversely ovate, somewhat dundum. \( \text{G} \). Native of Mexico. Bouvardia multiflora, Cav. icon. 6. p. 52. t. 572. f. 2. Without flowers.

Cavanilles's Bouvardia. Shrub.

11 B. cordifolîa (D. C. prod. 4. p. 366.) suffrutescous; leaves opposite, very short petioles, corotate, acute; corymb terminal, sessile, 8-10-flowered. \( \text{G} \). Native of Mexico. Isôra cordifolia, Moc. et Sesse, fl. mex. icon. ined. Corolla from dirty yellow to scarlet, 6-7 lines long.

Heart-leaved Bouvardia. Shrub.

Cult. The species of this genus usually bear red or scarlet flowers, and are therefore worth cultivating in gardens. The quickest way of increasing them is by pieces of the roots, planted in a pot of good mould, and placed in a warm situation; or they may be increased by young cuttings, which root readily under a hand-glass, in a mixture of sand, peat, and loam, in heat.

XIX. PINCKNEYA. XX. CALYCOHYLLUM.


L. sit. Pentändria, Monogynia. Calyx 5-parted, having one of the segments large, coriaceous, and coloured. Corolla tubular, with a 5-cleft limb, which is valvate in aestivation. Stamens 5, exerted, inserted in the base of the tube; anthers peltate. Stigma emarginate. Capsule 3-celled, dehiscing at the dissepiment. Seeds compressed, surrounded by a winged membranous margin, which is emarginate at the base.—A tree, native of North America. Branches opposite. Leaves ovate, acute at both ends, tomentose beneath, as well as the branches. Stipulas deciduous. Flowers rather large, pubescent, pale red, bracteolate, disposed in cymes; the cymes arising from the axils of the upper leaves. Large calyceous leaves, white, tinged with red.

1 P. pêrens (Mich., l. c.) ? F. Native of North America, in Georgia, on the banks of the river St. Maria, in muddy places; and on the banks of the New river in South Carolina. Pursh, fl. amer. sept. 1. p. 158. Ell. sketch. 1. p. 268. Cinchona Caroliniana, Poir. dict. 6. p. 40. Pinckneya pubescens, Pers. ench. 1. p. 197. The bark of this tree is used in place of Peruvian bark in Georgia and Carolina, under the name of fever bark.

Downy Pinckneya. Fl. June, July. Cit. 1786. Tree 20 ft. Cult. This tree is usually treated as a greenhouse plant in Britain; but thrives much better against a south wall, with the protection of a mat in severe weather. A mixture of sand and peat is the best soil for it; and cuttings planted in sand, with a hand-glass placed over them, will strike root.

XX. CALYCOHYLLUM (from καλύς, calyx, a calyx, and ψιλλον, phyllon, a leaf; in allusion to one of the teeth of the calyx being expanded into a large petiolate coloured leaf.) D. C. prod. 4. p. 367.—Macrocenêmum, Vahl, symb. 2. p. 38. but not of Browne.—Mussaenda species, Poir.
Lin. syst. Pentândria, Monogyniâ. Limb of calyx truncate, or bluntly 5-toothed; one of the teeth expanded into a petiole coloured membranous leaf. Corolla campanulate or funnel-shaped, with a 5-parted limb. Stamens 5; filaments rising from the throat, free, length of corolla; anthers oval, exerted, Style ending in 2 reflexed stigmas. Capsule dehiscing at the apex, oblong, 2-celled, many seeded. Seeds fixed to the linear placentas, imbricate, oblong, girdled by a very narrow membranous wing.—Small smoothish trees, natives of the West Indies. Leaves opposite, petiolate, membranous, glabrous above, but villous on the veins beneath. Stipulas short, broad, deciduous. Flowers disposed in axillary and terminal trichotomous corymbs; peduncles compressed. Habit of Musse'a nda.

1 C. candidissimum (D. C. prod. 4. p. 367.) leaves ovate, bluntly acuminated; corymbs terminal; limb of calyx bluntly 5-toothed; corolla somewhat funnel-shaped, glabrous. ë. S. Native of St. Martha, Vahl, and near St. Fernando de Atabapo, on the banks of the Orinoco, H. B. et Kuntz; and of Cuba, about the Havannah. Macrocnêmum candidissimum, Vahl, symb. 2. p. 38. t. 30. Musse'nda candidi- smini, Roem. et Schultes, syst. 5. p. 251. M. candida, Poir. dict. 4. p. 395. The peduncles of the corymbs are 2-edged. Calyces villous. Flowers 3 together, the middle one bearing a petiole leaf, but the 2 lateral ones are naked. Leaves 2-3 inches long. Leaf of calyx hardly an inch long, white, sometimes ovate, and sometimes subcordate.

Very-white-leaved Calycophyllum. Tree 20 feet.

2 C. occesi'num (D. C. prod. 4. p. 367.) leaves elliptic-lanceolate; corymbs axillary, disposed in an elongated panicle; limb of calyx bluntly 5-toothed; corolla somewhat funnel-shaped, glabrous. ë. S. Native of the island of Trinidad. Macrocnêmum occesi'num, Vahl, symb. 2. p. 38. t. 29. Musse'nda occesi'na, Poir. dict. 4. p. 395. Leaves a foot long and a hand broad. Flowers crowded, few, bearing each an oval-oblong, purple or scarlet calyce leaf, which is about 6 inches long.

Scarlet-leaved Calycophyllum. Cité 1823. Tree 20 feet.

3 C. tubulosum (D. C. prod. 4. p. 367.) leaves oval, acute at the base, acuminate at the apex, clothed with fine velvety down on both surfaces; panicles terminal; limb of calyx bluntly 5-toothed; corolla tubular, pubescent on the outside; large lobe of calyx petiolar, obicular and pubescent on the nerves and veins. ë. S. Native of Brazil. Macrocnêmum tubulosum, A. Richard, in herb. mus. par. Capsule ovate, truncate, dehiscing from the apex to the base at the dispersion. Anthers exerted. Filaments joined together beyond the middle into a tube.

Tubular-stamened Calycophyllum. Tree.

Cult. Like Musse'nda this genus is remarkable for the large coloured segment of the calyx, which see for culture and propagation, p. 492.

Tribe II.

GARDENIA'CEÆ (this tribe agrees with the genus Gardenia in important characters). A. Rich. dis. p. 108. D. C. prod. 4. p. 367.—Gardeniæ and Coccyxœâæ, Cham. et Schlécht. in Linnaeâ. 4. p. 138. and 197. Fruit baccate, 2-celled, or from abortion only 1-celled; cells many seeded. Alumum fleshy, Seeds not winged.—Trees or shrubs, with opposite leaves, and interpetiolar stipulas.

Subtribe I. Sarcoc'ephallæ (agreeing with Sarcocéphalus in the fruit being combined and fleshy). D. C. prod. 4. p. 367. Flowers collected into a bracteated head (f. 90. a.), sessile upon the receptacle. Fruit combined (f. 90. b.).

XXI. SARCOC'EPHALUS (from σάρξ, σαρκος, sarx sarkos, fleshy, and κεφαλι, kephale, a head; in allusion to the fruit being combined into a fleshy head). Afz. in herb. Banks, Sabin. hort. trans. 5. p. 442. t. 18. D. C. prod. 4. p. 367.—Cephalina, Thonn. in Schum. pl. guin. p. 105.

Lin. syst. Pentândria, Monogyniâ. Flowers 5-6-parted, sessile upon the globose receptacle (f. 90. a.), which with the calyces are combined into a globose fleshy mass. Limb of calyx with a very short margin. Corolla funnel-shaped, 5-cleft: lobes erect, obtuse. Anthers sessile in the throat of the corolla. Style exerted; stigma oblong, capitate, undivided. Berries 1-celled? many seeded, the whole combined into one mass (f. 90. b.), which is areolate from the margins of the calyces. Seeds small, somewhat kidney-shaped.—A spreading branchy shrub. Leaves opposite, on short petioles, roundish-oval, acute, shining above, and pubescent in the axils of the veins beneath. Stipulas solitary on each side, triangular, undivided, almost concrete at the base. Heads terminal, on short peduncles or sessile, about the size of a peach. Flowers rose coloured or yellowish.

1 S. escu'entus (Sabin. in hort. trans. 5. t. 18.) Native of Guînea, in many parts, as of Sierra Leone and Câhibia. Lindl. bot. reg. t. 1827. Cephalina scândens, Thonn. in Schum. pl. guin. 105. Naîceâa latîfòlia, Smith in Rees' cyc. 24. no. 5. The heads of fruit are edible, and by the negroes of Sierra Leone called peach; they are brown when ripe. Cephalina scândens of Schum. is probably a distinct species, as the Sierra Leone plant does not climb at all. (f. 90.)


Cult. A mixture of loam and peat is the best soil for this plant; and cuttings are easily rooted in the same kind of soil under a head-glass, in heat. The shrub requires to be kept in a strong heat, or it will neither flower nor fruit.

XXII. ZUCCARIN'IA (J. G. Zuccarini, a professor in the academy at Monach; author of some papers in the transactions of that academy). Blum. bijdr. (1826.) p. 1905. but not of Spreng. (1827.)


1 Z. macrophylla (Blum. l.c.) ë. S. Native of the west of Java, in woods on the mountains, where it is called Kibara. Leaves more than a foot long.

Long-leaved Zuccarina. Tree.

Cult. See Sarcocéphalus above for culture and propagation.

XXIII. LUCINE'EA (Lucina is one of the names of Juno or Diana). D. C. prod. 4. p. 368.

Lin. syst. Tetran'ária, Monogyniâ. Flowers combined into a dense head. Margin of calyx entire. Corolla funnel-shaped,
—A glabrous somewhat dichotomous shrub. Leaves petiolate, ovate, acuminate, smooth, coriaceous. Stipulas short, interpetiolar. Axillary peduncles opposite, but the terminal ones are subumbellate. Heads few-flowered. This genus differs from *Morinda* in the fruit being many seeded, not 1-seeded.


*Morinda*-like Luciencæ. Shrub cl.

Cult. See *Sarcocéphalus*, p. 487. for culture and propagation.


Lin. syst. *Penta-Hexandria*, *Monogynia*. Calyx with an obvate tube, a 5-6-toothed limb; and triangular, lanceolate, blunting, rather concave teeth. Corolla with a campanulate tube, and a 5-6-lobed spreading limb. Anthers 5-6, oblong, almost sessile, not exerted. Stigma bifid. Fruit bacate? 2-celled; cells many seeded. Seeds compressed, imbricated, inserted in an axillary spongy receptacle. The fruit, according to A. Rich. l. c., is pea-formed, crowned, and 2-seeded.—A glabrous shrub, native of Madagascar. Leaves elliptic, coriaceous. Stipulas solitary on both sides, triangular, acute. Flowers on the top of dilated peduncles, or sessile on the tops of the branches, intermixed with distinct scales, girded by a tubular toothed involucrem. This genus appears to be intermediate between the subtribes *Sarcocéphaleæ* and *Gardenieæ*.

1 C. *Axilla’s* (Lam. ill. t. 151. f. 1.) leaves elliptic, acute, on short petioles; peduncles axillary, thickened from the base to the apex, ending in a 5-6-lobed cupula at the apex, which bears the flowers. Ë. S. Native of Madagascar, where it is called *Allou-gala-lay* by the natives. Poir. suppl. 2. p. 77. exclusive of the diagnosis.

Axillary-flowered Canephora. Shrub.

Cult. See *Sarcocéphalus*, p. 487. for culture and propagation.

Subtribe II. Gardenieæ (containing shrubs agreeing with the genus *Gardenia* in having distinct flowers). D. C. prod. 4. p. 568. Flowers distinct, never combined into a head.


Lin. syst. *Pentandria*, *Monogynia*. Limb of calyx tubular, terete, 6-toothed, falling off very slowly. Corolla salver-shaped, with a terete tube, which is longer than the calyx, and a 6-parted spreading limb; lobes oblong. Anthers 6, inclosed, linear. Stigma clavate. Berry obovate-oblong, corticate, arculate at the apex, 3-2-celled. Seeds disposed in 2 rows in each cell, flat, depressed, nearly orbicular, separated from each other by small horizontal dissepiments.—Trees or shrubs, natives of South America. Leaves opposite or 3 in a whorl, on short petioles, nerved, glabrous. Stipulas oblong, deciduous. Flowers almost sessile, disposed in corystums at the tops of the branches.

Perhaps the fruit is at length 1-celled, from the dissepiment having vanished, ex Aubl.

1 A. *Guianæ’nis* (Aubl. guian. suppl. p. 13. t. 375) branchlets triquetrous, furrowed, clothed with adpressed pubescence; leaves usually 3 in a whorl, broad-elliptic, acuminate, nerved; flowers crowded, almost sessile; limb of calyx tubular, elongated. Ë. S. Native of Cayenne. The leaves in the specimens examined are all 3 in a whorl, but are sometimes op-
posite according to Desfontaines, mem. mus. 6. p. 12. t. 4.
Hamelia sessiliflora, Wildl. spec. 1. p. 981. Hameia glabra, Lam. dict. 3. p. 65. Duhamelia glabra, Pers. ench. 1. p. 203. Berry obovate, arculate at the apex, from the calyx having fallen off, 2-3-celled; cells bearing each 2 rows of seeds, and distinct sepal; hence the fruit appears 4-6-celled at first sight in the dry state.

Guiana Amiaou. Shrub 4 to 6 feet.
2 A. Fagiellia (Desf. mem. mus. 6. p. 14. t. 5.) branchlets nearly terete, smoothish; leaves opposite, oblong, acuminate, much nerved; corymbs of flowers on short peduncles; flowers crowded, almost sessile; limb of calyx tubular, short. h. S. Native of Cayenne. Fruit unknown.

Beach-leaved Amiaou. Shrub 4 to 6 feet.
3 A. INTERM?DIA (Mart. in Schultes, syst. 7. p. 90.) branches terete, glabrous; leaves opposite, oblanceolate, attuned at both ends, ciliated; flowers crowded, almost sessile, silky; upper 2 stipules forming an involucrum to the head of flowers. h. S. Native of Brazil, in the province of Bahia, in woods.

Intermediate Amiaou. Shrub 4 to 6 feet.
4 A. corymbosa (H. B. et Kuntth, nov. gen. amer. 3. p. 419. t. 299.) branchlets almost terete, smoothish; leaves opposite, ovate-elliptic, nerved, acuminate; corymbs panicked, pedunculate; limb of calyx tubular, short. h. S. Native of New Andalusia, near Cumanacoa, in bushy shady places. Desf. mem. mus. 6. p. 15. Hexactina corymbosa, Wildl. rel. ex Schlecht. in Schultes, syst. 1. e. Peitole 6-10 lines long. Fruit unknown. Flowers by threes.

Corymbose-flowered Amiaou. Shrub 8 to 9 feet.
5 A. PERUVIANA (Desf. mem. mus. 6. p. 16. t. 4. f. B.) leaves opposite, elliptic, nerved, acuminate, shining on the upper surface; flowers aggregate, corymbose. h. S. Native of Peru. Said to be nearly allied to the preceding.

Peruvian Amiaou. Shrub 4 to 6 feet.
6 A. ? Saccifera (Mart. in Schultes, syst. 7. p. 91.) branches angular and slightly curved at the apex; leaves 3 in a whorl, obturate-lanceolate, attenuate at the base, sessile, smooth, hairy, costate nerved; flowers terminal, crowded, on short peduncles; calyx elongated. h. S. Native of Brazil, in woods, at Barra do Rio Negro, where it is called by the natives Folko de Cominato and Coa-Jusara.

Sack-bearing Amiaou. Shrub 4 to 6 feet.
7 A. Brasiilia'na (A. Rich. dios. ex D. C. prod. 4. p. 370.) plant suffrutescent, creeping; branches assurgent; leaves elliptic, acuminate; flowers small, disposed in crowded corymbs; segments of corolla very short. h. S. Native of Brazil.

Brazilian Amiaou. Shrub creeping.

 Cult. See Mussaenda, p. 492. for culture and propagation.


Lin. syst. Pentandria, Monogynia. Calyx with an obovate-turbinate tube, a 5-parted limb, and deciduous erect acute lobes, one of which is usually drawn out into a large petiole, reticulately nerved, coloured leaf. Corolla tubular-shaped, with a 5-parted limb, and a villous throat. Anthers 5, sessile within the tube, linear, inclosed, and sometimes a little exserted. Stigma bifid. Fruit ovoid, fleshy, naked at the apex from the limb of the calyx being deciduous, indescent, 2-celled; cells many seeded. Placentas pedunculate, bifid at the apex, rising from the dissepiment, and appearing like a Burgundian cross. Seeds very numerous, small, lenticularly compressed, scabrous. Embryo in fleshy albumen, with the radicle thick, and turned towards the

hylum.—Small trees or shrubs. Leaves ovate, petiolate, villous or glabrous. Stipulas twin on both sides, free or combined at the base, acuminate. Flowers corymbose, terminal. Branches small under the pedicels or branches of the corolla, and ought to be cautiously distinguished from the large coloured calyces lobes.

Sect. I. Belilla (the name of one of the species in Malabar). Rheed, mal. and Adams. One of the calyces lobes is always drawn out into a large coloured reticulately veined bractea-formed leaf, which has been through want of proper caution taken for, and called bractea. Anthers sessile within the tube of the corolla, inclosed. Capsule ovate.

1 M. speciosa (Poir. suppl. 4. p. 37.) leaves broad-oval, acute, rather villous at the nerves and veins above, pubescent beneath; teeth of calyx obtuse, one of which is usually petiolate, large, and coloured; corolla tubular, with obtuse lobes. h. S. Native of South America, in Caracas. Macrogynum speciosum, Jacq. hort. schembr. 1. p. 19. t. 49. The bractea-formed calyces leaves are rose coloured. Corymbs fastigate, rather villous; bractea subulate. Style exerted. Anthers inclosed. Corolla villous on the outside, an inch long, with a rose-coloured limb.


2 M. ACUTIFLORA (Bartl. in Hanke, herb. ex D. C. prod. 4. p. 370.) leaves oval, acuminate, acute at the base, glabrous, except the nerves and veins, which are pubescent on the under surface; corymbs trichotomous pubescent; teeth of calyx acute, one of which is usually large, petiolate, ovate, and coloured; corolla tubular, with acute lobes. h. S. Native of Mexico. Stipulas villous on the outside, bidentate, acuminate, and deciduous. The large calycine leaf is 5-nerved and acuminate. Perhaps only a variety of M. speciosa.

Acute-flowered Mussenda. Shrub 5 to 6 feet.

3 M. FRONDOSA (Lin. spec. 251.) leaves oblong, acuminate, villous; branchlets and corymbs downy; stipulas subulate; corymbs terminal, dichotomous, somewhat panicled; lobes of calyx elongated, subulate, one of which is petiolate, ovate, acuminate, membranous and puberulous. h. S. Native of the East Indies, Java, Malabar, &c. Belilla, Rheed. mal. 2. p. 27. t. 17. M. Zeyllánica, Burt. zeyl. 163. t. 76. M. formosa, Lin. mant. p. 338. M. frondosa, Roxb. et Wall. in fl. ind. 2. p. 227. Lam. ill. t. 157. f. 1. Flowers of a deep golden colour. The bractea-formed leaf of the calyx is 2 inches long and white.

4 M. GLABRA (Vahl. symb. 3. p. 38.) leaves oval, acuminate at both ends, glabrous on both surfaces, as well as the branches; corymbs terminal, smoothish; segments of calyx subulate, acute, one of which is large, petiolate, glabrous, and acute. h. S. Native of the East Indies. Lodd. bot. cab. t. 1269. Fólium Principissae, Rumph. amb. 4. t. 51. Flowers yellow. The bractea-formed leaf of the calyx is about 4-5 inches long, white.

5 M. CALYCINA (Wall. cat. no. 6253.) leaves ovate or oblong, acuminate, tapering to both ends, almost glabrous, except on the nerves; stipulas villous, cuspitate at the apex; calyxes downy; segments large, ovate, cuspidate; the large foliaceous segment petiolate, ovate, elliptic, acuminate, yellow; young branches and peduncles villous; peduncles terminal and axillary, corymbose, or trichotomous, bearing a single flower in each fork; fruit turbinate. h. S. Native of the East Indies, in the Burmese empire, on Mount Taung Dong, and at Prome. Flowers yellow.

Large-calycine Mussenda. Shrub 5 to 6 feet.
6 M. Villo'sa (Wall. cat. no. 624.) leaves oblong, acuminate.
ated, tapering at the base, on short petioles, hispid from villi on both surfaces; petioles, young branches, and peduncles very villous; stipular linear-lanceolate, cuspitate, very villous; corymb terminal, chlamydeous; calyx villous: segments linear: the large, foliaceous segment petiolate, elliptic, yellow.  h. S. Native of Penang.  Flowers yellow.

Villous Mussendana.  Shrub 4 to 6 feet.

7 M. Sumatraeus (Roth, nov. gen. et spec. p. 152.) leaves elliptic, tomentose on the under surface, as well as the petioles and branches; corymbs terminal; bracteole-formed leaf of calyx roundish, pubescent, reticulately veined.  h. S. Native of the East Indies.

Sumatra Mussendana.  Shrub 5 to 6 feet.

8 M. acumina (Blum. bijdr. p. 986.) leaves lanceolate, acuminate at both ends, pubescent on the mid-rib on both sides; corymbs terminal, chlamydeous, pubescent: lobes of calyx linear, acuminate: one of which is drawn out into an elliptic-oblong leaf.  h. S. Native of Java, at the head of the river Tjikimdul, on Mount Gede.

Acuminated-leaved Mussendana.  Shrub 5 to 6 feet.

9 M. hispida (D, Don, prod. fl. nep. p. 139.) leaves oval, acuminate, pilose; branchlets hispid; pedicels and calyces very bristly; stipular lanceolate; segments of calyx ovate, acute: one of which is petiolate, ovate, acuminate, hispid on the petiole and villous on the nerves.  h. G. Native of Nepal, at Narainbhetty.  The lobes of the corolla are rounded and mucronate.  It comes near to M. frondosa, but the leaves of that species are crenate from tomentum beneath, and the segments of the calyx are linear and elongated.

Hispid Mussendana.  Shrub 5 to 6 feet.

10 M. krythophylla (Schum. pl. guin. p. 116.) branches velvety from short soft down; leaves ovate, cuspitate, pubescent above, and villously tomentose beneath; stipulas villous, deciduous; corymbs terminal, chlamydeous, villous; calyce segments subulate: one of which is large, petiolate, ovate-acuminated, and very villous; tube of calyx hispid.  h. S. Native of Guinea, where it was collected by Thonning.  The bractea-formed calyce segments are 4-5 inches long, and 2 inches broad, 5-nerved, and of a reddish colour.  Corolla hardly twice the length of the calyx.  Habit of M. frondosa, under which name it was received from Puerari.

Red-leaved Mussendana.  Shrub 5 to 6 feet.

11 M. lutetoliana (Delin. in Caill. pl. afr. p. 65. t. 1. f. 1. Caill. voy. t. 63.) leaves almost sessile, ovate-lanceolate, acute, nerved, and tomentose beneath; stipulas twin on each side, lanceolate-subulate; corymbs terminal, chlamydeous; calyce teeth subulate: one of which is often petiolate, oval, and acute.  h. G. Native of Arabia, on the mountains of Hadie and elsewhere; and about Singue in Nubia.  Ophioliriza lanceolata, Fosk. egyp. arab. p. 42. Manettia lanceolata, Vahl, symb. 1. p. 12. Mussendana lanceolata, Spreng. syst. 1. p. 705. but not of Poir.  The bractea-formed calyce leaf is yellowish, as well as the flowers.  Corolla an inch long, slender.

Yellow-bractea Mussendana.  Shrub 5 to 6 feet.

12 M. iserti (D. C. prod. 4. p. 871.) leaves elliptic, on short petioles, and as well as the branches glabrous; flowers disposed in corymbose panicles; pedicels and corollas clothed with canescent villi; bractea-formed calyce lobes large, roundish, and glabrous.  h. S. Native of Guinea, where it was collected by Isert.  M. macrophylla, Schum. pl. guin. 118. but not of Wall.

Isert's Mussendana.  Shrub 5 to 6 feet.

13 M. arzelnii; every part of the shrub is villous; leaves ovate-lanceolate: having the veins clothed with rusty hairs beneath, as well as the petioles; corymb panicled, crowded; bractea-formed calyce segment large, white, and villous; capsules villous.  h. S. Native of Sierra Leone, by the sides of rivulets, among other bushes.  Flowers yellow.

Afzelia's Mussendana.  Shrub 4 to 6 feet.

14 M. pubescens (Art. hort. kew. ed. 2. vol. 1. p. 372.) leaves ovate-oblong, acuminate, pubescent on the nerves; stipulas twin on each side, subulate; corymbs terminal; calyce lobes subulate: one of which is petiolate, ovate, and acute; corolla with a slender tube, and acute lobes.  h. G. Native of China, where it is called Cam mun fa.  M. pubescens, Sims. bot. mag. 2099. Loddis. bot. cab. t. 451. but not of Humb. et Bonpl.  Corollas small, yellow, clothed with adpressed down on the outside.  The branches are rather scendent, and the bractea-formed calyce segments are white.


15 M. variosdora (Wall. cat. no. 6259.) branches and peduncles hispid and warded; leaves elliptic-lanceolate, hispid from stiff hairs on both surfaces, as well as on the petioles; corymbs chlamydeous, terminal; the large foliaceous segments of the calyx roundish, mucronate, triple-nerved, somewhat coriaceous, and sometimes cuneated at the base, white; fruit roundish, not crowned, warded; calyce teeth short.  h. S. Native of the East Indies, at Amherst, Chappedong, and Tavoy.

Warted-fruited Mussendana.  Shrub 5 to 6 feet.

16 M. cordylosa (Roxb. fl. ind. 2. p. 226.) leaves oblong, pointed, and are as well as the branches smooth; corymbs terminal, smooth; stipulas coriaceous at the base, and cuspitate at the apex; calyx segments cuneate: the bractea-formed one ovate-lanceolate; lobes of corolla ovate, acute.  h. S. Native of Ceylon, Malabar, and other parts of the East Indies.  The bractea-formed calyce segment is white, and the border of the corolla orange-coloured, but greenish underneath.  In some parts of India the white floral leaves are brought to table as an excellent herb.

Coryllosa-flowrered Mussendana.  Shrub 5 to 6 feet.

17 M. macrophylla (Wall. in Roxb. fl. ind. 2. p. 228.) branchlets beset with soft silky hairs; leaves ovate, acuminate, pubescent; stipulas broad-ovate, bifid, acuminate and recurved at the apex; corymbs terminal, chlamydeous, very pilose, on short peduncles; calyce segments foliaceous, broad, oblanceolate; bracteae large, very hairy.  h. S. Native of Nepal, on the mountains of Chundugiri and Nagaroon.  Branches tetragonal, brown.  Leaves green above and pale villous beneath.  Stipulas nearly twice as long as the petioles.  Corinmy shorter than the uppermost pair of leaves.  There are generally 3 floral leaves in each corymb, which are snow white, and 2-3 inches long.  Bracteae large under each division of the inflorescence.  Flowers large, orange-coloured, hairy outside.  Berries dark purple, hairy, size of a marrowfat pea.

Long-leaved Mussendana.  Shrub 5 to 6 feet.

18 M. Wallichii; leaves long, elliptic, tapering much to both ends, acuminate, quite glabrous; corymbs glabrous, tri- chomatous, terminal; the large petiolar calyce leaflets glabrous, triple-nerved, white, acuminate; fruit roundish, crowned by the calyce segments, which are linear.  h. G. Native of the East Indies, at Tavoy and Rangoon.  M. longifolia, Wall. cat. no. 6258., but not of Lam.

Wallieh's Mussendana.  Shrub 6 to 8 feet.

19 M. incana (Wall. in Roxb. fl. ind. 2. p. 229.) shrub hoary in every part from adpressed soft hairs; leaves ovate-oblong, almost sessile, white beneath; stipulas broad at the base, lanceolate at the apex, adpressed; corymb terminal, sessile, fasciculate, few-flowered; bracteae linear-subulate; bractea-formed segment of the calyx large, ovate, petiolate, and acuminate.  h. G. Native of Nepal, towards Gosaingthang.  Root simple, slender.  Stem about the thickness of a goose quill, undivided, though seldom with 1 or 2 slender alternate
braches. Leaves rather longer than the interstices, which are pretty equal, about 5-6 inches long, villous above. Stipulas about the length of the petioles, furnished with a number of glands inside on the lower part. Corymba very hairy. Floral leaves subcordate, milk white, downy. Tube of corolla very long, hairy.

_Hoary Mussenda._ Shrub 2 to 3 feet.

20 _M. ceriophylla_ (D. Don, prod. fl. nep. p. 139.) leaves cuneate-oblong, acuminate, downy on both surfaces as well as on the branches; stipules lanceolate, acuminate; corollas terminal, bracteas lanceolate; calyx segments linear, acute, 5 times shorter than the corolla: one of which is bracteato-formed, petiole, oval, acuminate; tube of corolla villous. _f._ G. Native of Nipal. The large calyceine segment is probably white, and the flowers are probably yellow.

_Wedge-leaved Mussenda._ Shrub 4 to 6 feet.

**Sect. II. L. Andia (M. De la Land, a correspondent of the Museum of Natural History at Paris).** Comm. herb. D. C. prod. 4. p. 372. Lobes of calyx equal or nearly so: having none of the segments expanded into bracteate-formed leaves. Capsule naked at the apex, not crowned by the calyx. Leaves opposite.

21 _L. Andia_ (Lam. ill. t. 157. f. 2. Poir. dict. 4. p. 392.) leaves ovate, acuminate, clothed with villous pubescence on both surfaces; branches, petioles, coryms and corollas villous; lobes of calyx equal, triangularly lanceolate, 12 times shorter than the tube of the corolla. _f._ S. Native of the Mauritius, where it is called Quinquina indigene, or Indigenous Peruvian bark, and is used in the cure of fevers. M. latifolia, Poir. suppl. 4. p. 36. dict. scient. nat. 53. p. 452. Rodelinia L.ндia, Spreng. symb. 1. p. 707. M. holosericea, Smith, in Rees' cyc. vol. 24. no. 6. Bracteas linear, acute. Corolla an inch long, hairy outside.


22 _M. uniflora_ (Wall. cat. no. 6261.) young branches, tube of corolla, calyxes, and fruit villous; leaves small, rather villous, roundish, acute, running down the petioles at the base; stipulas villous, narrow; calyceine segments subulate; corolla with a long tube and a spreading limb; flowers solitary, terminal. _f._ S. Native of the East Indies, at Tavoy. Flowers as large as those of the common jasmine, probably white.

_One-flowered Mussenda._ Shrub 1 to 2 feet.

23 _M. Stadmani_ (Michx. med. ex Bory in litt. D. C. prod. 4. p. 372.) leaves oval, ending in short cuspitate points, hardly pubescent, unless on the nerves; branches, coryms, and corollas pubescent; lobes of calyx equal, elongated, lanceolate, 6 times shorter than the tube of the corolla. _f._ S. Native of the Mauritius. Oxylanthus cymosus, Reichb. in Sieb. fl. maur. excis. 2. no. 78. M. Ländia, Smith, in Rees' cyc. vol. 24. no. 5. Tube of corolla 1½ inch long, as in _L. Andia._ The lobes of the calyx are 3 lines long in the present plant, while in that of _L. Andia_ they are hardly a line and a half long.

_Stadmann's Mussenda._ Shrub 4 to 6 feet.

24 _M. arcuata_ (Lam. dict. 4. p. 392.) leaves oval-oblong, acuminate, rather pilose on the nerves beneath; branchlets, coryms, and corollas pubescent; lobes of calyx linear-subulate, a little unequal; tube of corolla very villous inside. _f._ S. Native of the Mauritius. Sieb. fl. maur. excis. 2. no. 78. Ländia stelligera, and Ländia astrographica. Comm. ex herb. mus. Paris. The flowers are yellow, and when immersed in water tinged it with the same colour. Limb of corolla glabrous outside. Branches arching.

_Arch-branched Mussenda._ Clt. 1822. Shrub 4 to 5 feet.

25 _M. tomentosa_ (Wall. cat. no. 6265.) branches downy; leaves elliptic or ovate-elliptic, acute, clothed with white woolly down on both surfaces; calyx downy, with subulate segments; stipulas subulate, twin on both sides; tube of corolla long, slender, hairy, with a broad, spreading border; berries roundish, crowned by the calyceal teeth; coryms terminal, trichotomous. _f._ S. Native of the East Indies, on the Gingee mountains. Flowers apparently white, as large as those of jasmine.

_Tomentose Mussenda._ Shrub 4 to 6 feet.

26 _M. elegans_ (Schum. pl. guin. p. 117.) leaves oval, ending in short cuspitate points, and are as well as the branches glabrous; coryms terminal, trichotomous, pubescent; segments of calyx linear, spreading a little; tube of corolla very hispid, but the lobes are glabrous. _f._ S. Native of Guinea, where it was collected by Thonn. _M. discolor._ Thonn. in Herb. Vahl, ex Puerari. Very distinct from _M. discolor._ Willd.

_Elegant Mussenda._ Shrub 4 to 6 feet.

27 _M. cordifolia_ (Wall. cat. no. 6260.) glabrous in every part; leaves ovate-oblong, acuminate at the apex and coriaceous at the base, glabrous, coriaceous, on short petioles; coryms trichotomous, terminal; berries turbinate, not crowned. _f._ S. Native of Pulo Penang.

_Heart-leaved Mussenda._ Shrub 5 to 6 feet?

28 _M. farvra_ (Wall. cat. no. 6261.) branches and leaves rather hispid from scattered hairs; leaves ovate-lanceolate, acuminate, tapering to both ends; stipulas subulate; coryms terminal, crowded; tube of corolla very long, slender, rather swollen near the top; calyceine segments linear. _f._ S. Native of the East Indies, at Tavoy. _M. angustifolia._ Wall. mss. Apparently a rambling, small shrub.

_Small Mussenda._ Shrub rambling.

29 _M. sericea_ (Blum. bidr. p. 986.) leaves ovate-oblong, acuminate, attenuated at the base, glabrous, except on the veins underneath; branches silky; coryms terminal, trichotomous, silky. _f._ S. Native of the Moluccas. Segments of calyx-linear-lanceolate, silky, all equal. Tube of corolla elongated, densely tomentose.

_Silky Mussenda._ Shrub 4 to 6 feet.

30 _M. repens_ (Wall. cat. no. 6263.) root creeping; leaves elliptic, acuminate, rather hispid; petioles, young branches, and coryms clothed with brown villi; stipulas subulate, villous; coryms terminal; calyx downy, with linear-subulate segments; corolla long, slender, swelling a little near the top. _f._ S. Native of Silhet. The leaves oppose each other are unequal in size.

_Creeping Mussenda._ Pl. ½ to 2 feet.

**Sect. III. C. anthe (from antis, to burn or rip, and anthes, a flower; the flowers of the species are deprived of the large calyceine leaves)._ D. C. prod. 4. p. 372. Lobes of calyx equal, all large or setaceus, permanent, therefore the fruit is crowned. Leaves 3 in a whorl. Stipulas broad at the base, acute at the apex, adpressed, coriaceous.—Species natives of Madagascar. Perhaps a proper genus.

31 _M. citriophylla_ (Lam. in Poir. dict. 4. p. 393.) leaves 3 in a whorl, ovate, almost sessile, coriaceous, and are as well as the branches glabrous; stipulas broad at the base, acute, short, coryms terminal; lobes of calyx linear. _f._ S. Native of Madagascar. Habit of Rauwolfia. Corolla small, yellow.

_Citron-leaved Mussenda._ Shrub 5 to 6 feet.

32 _M. longirifolia_ (Lam. in Poir. dict. 4. p. 393.) leaves 3 in a whorl, lanceolate-oblong, rather tomentose from short down; stipulas broad at the base, acute; coryms terminal; lobes of calyx setaceous; capsule ribbed. _f._ S. Native of Madagascar. Very similar to the preceding species. Leaves green above and whitish beneath. Fruit pyriform, with 5 or 10 longitudinal ribs.

_Long-leaved Mussenda._ Shrub 5 to 6 feet.

3 R 2
33 M. ? glomerulata (Lam. in Poir. dict. 4. p. 393.) leaves ovate, acute, smoothish beneath, but clothed with fuscous velvety down above and on the petioles; branches rather villous; flowers terminal, glomerulate; calyx campanulate, with a 5-6-toothed limb. \( \beta \). S. Native of French Guiana. Rodelétia glomerulata, Spreng. syst. 1. p. 707. Peduncles and calyces beset with white silvery hairs. Corolla tubular, white, rather villous outside. Stamens 5-6.

Glomerate-flowered Mussenda. Shrub 5 to 6 feet.

34 M. discolor (Pet. Th. in Wildl. rel. ex Schultes, syst. 5. p. 254.) hairy; leaves scabrous, stirigose above, and clothed with canescent pili beneath; flowers corymbose, permanent. \( \beta \). S. Native country unknown, as well as flowers.

Two-coloured-leaved Mussenda. Shrub.

35 M. ? Chiná'zasa (Lour. coch. p. 152.) leaves in fascicles, lanceolate, glabrous; flowers solitary, terminal; berries 4-celled, many-seeded. \( \beta \). G. Native of China, in the suburbs of Canton. Calyx 5-parted, with lanceolate segments. Seeds borne, almost kidney-shaped. This is certainly not a species of Mussaenda.

China Mussenda. Shrub 5 to 6 feet.

36 M. echinoides (Wildl. rel. in Schultes, syst. 5. p. 251.) leaves oblong, acute, glabrous; flowers corymbose. \( \beta \). \( \sigma \). Native country unknown. A climbing shrub.

Echitis-like Mussenda. Shrub cl.

37 M. tetraédra (Schultes, syst. 5. p. 254.) leaves smooth, glabrous, acute; coryms triplicate; flowers tetrandrous. \( \beta \). S. Native country unknown. Macrénömum tetraérdum, Cav. ann. sc. ex Schultes.

Tetrandrous-flowered Mussenda. Shrub.

Cult. Some of the species of this genus are very pretty, and worth cultivating in collections. A mixture of loam and peat is the best soil for them; and cuttings are easily rooted in the same kind of mould under a hand-glass, in heat.

XXVIII. KUTCHUBE'A (named after — Koutchouba, minister of the home department of Russia; a promoter of the sciences). Fisch. in litt. ex D. C. prodr. 4. p. 378.

Lin. syst. Octándria, Monogynía. Calyx with a turbinate tube, and a tubular truncate limb, which is longer than the ovary. Corolla with a cylindrical tube, much longer than the calyx, a villous throat, and an 8-parted limb, which is twisted in rotation; segments of corolla lanceolate, acuminate. Anthers 8, almost sessile, oblong, acute, inserted in the throat of the corolla among the hairs. Style filiform; stigma large, clavate, with 2 lobes, which are applied to each other, hairy and convex on the outside, but flat and smooth on the inside. Fruit unknown.—A glabrous tree, native of Guiana. Branches terete. Leaves obovate, bluntish, on short petioles. Stipulas ovate, broad, short, combined, permanent, sometimes bifid. Flowers terminal, somewhat corymbose, pedicellate, large, bracteolate. Corolla purple at the base and pale at the apex.—This genus comes very near Genipa and Cassipa; from the first it differs in the tube of the corolla being much longer than the calyx; and from the second in the calyx being tubular, and in the stigma being clavate; and from both in the greater number of the parts of the flower.

1 K. rysin'um (Fisch. 1. c. with a figure). \( \beta \). S. Native of French Guiana, where it was collected by Martin. A tall elegant tree. Tube of corolla 2 inches long, coriaceous.

Famous Kutchubea. Tree.

Cult. For culture and propagation see Mussaenda above.


Lin. syst. Hezândria, Monogynía. Calyx with a globose tube and a short entire hardly perspicuous limb. Corolla much longer than the calyx, tubular, wrinkled on the outside, with a villous throat, and a 6-parted short limb; lobes acute and spreading a little. Anthers 6, almost sessile, inserted in the throat of the corolla among the villi. Stigma bifid, slender, inclosed. Berry almost globose, crowned, 2-celled, many-seeded; placenta fixed to the middle dissepiment. Seeds minute.—An American tree. Leaves obvate-oblong, on long petioles, coriaceous, rather tomentose, about a foot long. Thyrse panicled, terminal, with opposite flowers. Bracteoles 2-3 each under each flower, sometimes adnate to the calyx. Corolla 1-2 inches long, pale red.

1 C. verrucosa (Humb. et Bonpl. l. c.). \( \beta \). S. Native of South America, in shady places on the banks of the Rio Negro, near San Carlos. H. B. et Kuth, nov. gen. Amer. 3. p. 412. Warted Cassupa. Tree 30 to 40 feet.

Cult. See Mussaenda above for culture and propagation.


Lin. syst. Pentándria, Monogynía. Limb of calyx turbinate, urceolate, almost quite entire, deciduous. Corolla with a short tube, a 5-parted spreading limb, and a bristly throat. Stamens 5, seated in the mouth of the tube; filaments short; anthers linear, rather incumbent, exserted. Style short; stigma thick, 2-lobed, exserted. Berry globose, umbonate, crowned by the circular base of the calyx, 2-celled, many-seeded; placenta membranous, stipitate, rather fleshy, transversely lamellate. Seeds compressed.—Climbing shrubs, natives of Java. Leaves distich. Stipulas interpetiolar, undivided, or twin and rather concrete. Flowers rising from the axis of the leaves in dense coryms, unilateral.—This genus comes near to Canthium and Bertiera, but differs from them in the uniovular limb of the calyx, and in the short tube of the corolla.

1 G. acumina (Blum. l. c.) leaves ovate or elliptic-oblong, acuminate, almost sessile, glabrous; cymes short, interfoliaceous; pedicels numerous, 1-flowered. \( \beta \). \( \sigma \). Native of Java, on the west side, on the mountains. Leaves 7-8 inches long.

Acuminated-leaved Gynopachys. Shrub cl.

2 G. tomástica (Blum. l. c.) leaves sessile, rather cordate-oblong, acuminate, shining above, but clothed with deciduous rufous tomentum on the veins beneath and on the coryms, which are dichotomous and interfoliaceous. \( \beta \). \( \sigma \). Native of Java, on Mount Burangrang, in woods.

Tomástica Gynopachys. Shrub cl.

3 G. corymbosa (Blum. l. c.) leaves almost sessile, elliptic-oblong, bluntnet, glabrous; coryms trichotomous, interfoliaceous, divaricate. \( \beta \). \( \sigma \). Native of Java, on Mount Salak, in woods. Throat of corolla beset with yellowish rufous breasts. Fruit globose, size of a pea.

Corymbose-flowered Gynopachys. Shrub cl.

Cult. See Mussaenda above for culture and propagation.


Lin. syst. Pentándria, Monogynía. Calyx with a turbinate tube, and a very short 5-toothed limb. Corolla with a very
long tube, a naked dilated throat, and a 5-parted spreading limb; the lobes obulate. Anthers rising from the throat of the corolla, exerted, linear-sagittate, furnished each with a blunt appendage at the base. Style filiform, fusiform at the apex; stigma clavate, bilamellate. Berry rather fleshy, 2-celled, crowned. Seeds numerous, roundish-ovate, imbedded in soft pulp.—Unarmed shrubs or undershrubs. Leaves opposite, on short petioles. Stipulas triangular or ovate. Flowers terminal, corymbose.

1 T. longifolia (Aubl. guian. 1. p. 131. t. 50.) stem tetragonal, quite simple; leaves lanceolate-oblong, acuminated at both ends, glabrous; flowers almost sessile, aggregate. h. S. Native of French Guiana, at Arauca. Lam. ill. t. 163. f. 1. Ucriana speciosa, Wildl. spec. 1. p. 961. Tocoyena longifolia, Poir. dict. 7. p. 602. but not of Kunt. Leaves a foot long, and 4-5 inches broad. Corolla 5-9 lines long, with the tube yellow, and the limb white. Stipulas triangular.

Long-flowered Tocoyena. Clt. 1826. Shrub 3 to 6 feet.

2 T. macrophylla (H. B. et Kunth, nov. gen. amer. 3. p. 412.) branches tetragonal; leaves broad-ovate, short-acuminate, glabrous; stipulas roundish, coriaceous; flowers terminal, racemose. h. S. Native of South America, on the banks of the river Magdalena, between Mompox and El Penon, and near Honda. Ucriana insignis, Wildl. rel. Spreng. syst. 1. p. 761. exclusive of the synonyme of Lam. T. insignis, Roem. et Schultes, syst. 5. p. 299.

Large-leaved Tocoyena. Shrub.

3 T. longifolia (H. B. et Kunth, nov. gen. amer. 3. p. 411. but not of Poir.) branches tetrate; leaves oblong-oblong, acute, glabrous, shining, with revolute margins; stipulas ovate, acuminate; flowers racemose; teeth of calyx short, acute. h. S. Native of New Granada, in hot places. Ucriana Humboldtii, Spreng. syst. 1. p. 761.

Long-leaved Tocoyena. Shrub.

4 T. Mutisii (H. B. et Kunth, nov. gen. amer. 3. p. 411.) branches tetrate; leaves oblong, acutish, glabrous, shining, with somewhat revolute margins; stipulas ovate, acuminate; flowers terminal, corymbose; teeth of calyx short. h. S. Native of New Granada, in hot places. Ucriana Mutissii, Spreng. syst. 1. p. 761.

Mutis’s Tocoyena. Shrub.

5 T. hirsuta (Moricand, herb. ex D. C. prod. 4. p. 375.) leaves elliptic, ending each in a short cuspidate point, clothed with villous down above, and with soft velvety hairs beneath. h. S. Native of Brazil. Tube of calyx 4 inches long.

Hairy Tocoyena. Shrub.

Cult. See Oxyanthus, p. 494., for culture and propagation.


Linn. syst. Pentadactyla, Monogynia. Calyx with an obovate tube, and a short 5-toothed limb. Corolla fimbriated, with a very long terete tube, a villous hardly dilated throat, and a 5-parted limb; the segments spreading, obtuse, and nearly equal; the alabastra gibbous on one side. Stamens 5, rising from the throat of the corolla, free, unequal, a little exserted. Style filiform, slender, and bifid at the apex: with the lobes unequal, rather papillose and acute. Berry ovate, crowned by the calyx, succulent, 2-celled, many-seeded. Seeds unknown.

—Glabrous shrubs or small trees, natives of Guiana. Branches terete. Leaves opposite, on short petioles, coriaceous. Stipulas oblong-triangular, at length falling off. Flowers white, very long, disposed in terminal corymb.

1 P. longiflora (Aubl. guian. 1. p. 134. t. 51.) leaves oblong, acuminated, acute at the base; stipulas oblong; calyx bluntly 5-toothed; tube of corolla very much incurved, and nutant at the apex. h. S. Native of French Guiana, on the banks of rivers. Lam. ill. 163. Solanum longiflorum, Wildl. spec. 1. p. 961. Kyranthus longiflorus, Gmel. syst. 1. p. 162. Corolla white, with the tube very long, and green at the base; and the hairs in the throat are very long. Berry yellow, about the size of a hen’s egg. Seeds 12, imbedded in the red pulp, according to Aublet. The limb of the corolla is said to be regular. Coryms composed of about 6 flowers; and the flowers are pedicellate and scaly at the base from bracteas.

Long-flowered Posoqueria. Clt. 1820. Shrub 5 to 6 feet.

2 P. latifolia (Roem. et Schultes, syst. 5. p. 227.) leaves ovate, acuminated, obtuse at the base, or a little cordate; stipulas broad, triangular; calyx bluntly 5-toothed; tube of corolla straight; and the limb irregular; alabastra gibbous on one side. h. S. Native of French Guiana. Allied to P. latifolia, but differs from all the species in the form of the stipulas. Tube of corolla 3-4 inches long. Flowers terminal, corymbose.

Narrow Posoqueria. Shrub.

3 P. decora (D. C. prod. 4. p. 375.) leaves ovate, ending each in a short cuspidate point, obtuse and rather cordate at the base; stipulas oval, obtuse, large, foliaceous, and coriaceous; calyx bluntly 5-toothed; tube of corolla straight; alabastra rather gibbous on one side. h. S. Native of French Guiana. The corolla of this species differs from all the others described before it, by the tube being ovate; and the calyx being obtuse, and the limbs acuminate. This species is allied to P. latifolia, but differs from all the species in the form of the stipulas. Tube of corolla 3-4 inches long. Flowers terminal, corymbose.

Trinidad Posoqueria. Shrub. 5 to 6 feet.

5 P. hayannensis (D. C. prod. 4. p. 375.) leaves oval, acute, membranous, bluishish at the base; stipulas lanceolate, acute; calyx bluntly 5-toothed; tube of corolla straight; alabastra gibbous on one side. h. S. Native of Cuba, about the Havana. Tube of corolla slender, 4½ inches long. Petioles 6 lines long.

Havana Posoqueria. Shrub. 5 to 6 feet.

6 P. graecilis (Roem. et Schultes, syst. 5. p. 277.) leaves oval-lanceolate; stipulas oblanceolate; calyx acutely 5-toothed; tube of corolla curved, and the limb irregular. h. S. Native of French Guiana, in remote woods, from the river Darapa to Kaw. Solanum gracilex, Rudge, pl. guian. p. 27. t. 41. It differs from P. longiflora in the character given, and in the slender nerves of the leaves. Flowers white, 4-5 in a coryb.

Sleender-flowered Posoqueria. Clt. 1825. Shrub 5 to 6 ft.

7 P. revoluta (Nees, in flora, 1821. p. 328. Schrad. gatt. anis. 1821. p. 714.) leaves elliptic-ovate, each ending in a short cuspidate point, with revolute margins; stipulas deciduous; coryms dense; tube of corolla straight; throat villous, and limb irregular. h. S. Native of Brazil. P. insignis, Neuw. in flora. 1821. p. 301. in reis. bras. with a figure. Flowers white.

Revolute-leaved Posoqueria. Shrub 5 to 6 feet.
XXXIII. Oxyanthus. Native panicles of a flower, the corolla being glabrous, and its parts being acute, and in the clavate stigma.

1 O. speciosus (D. C. I. c. and in diss. ined. with a figure) branchlets, leaves, and calyces quite glabrous; calyceal teeth very much acuminated; racemes many-flowered; tube of corolla one half shorter than the leaves. \( \gamma \). S. Native of Sierra Leone on the mountains, where it was collected by Smeathmann. Flowers about 30 in each raceme, apparently red, according to the dried specimens, but are probably white or milk-coloured in their recent state.

Shiny Oxyanthus. Shrub 3 to 4 ft. long, roots by planting them in a pot of sand, and placing it under a hand-glass, in heat.

XXXIV. Stylocoryna. Native flowers corolla being glabrous, and its parts being acute, and in the clavate stigma.

1 S. Racemosâ (Cav. l. c. t. 368.) leaves elliptic-oblong, acute at the base, acuminated at the apex, glabrous; panicles axillary, dichotomous, loose, one-half shorter than the leaves; corolla salver-shaped, having the lobes longer than the tube. \( \gamma \). S. Native of the Philippines. Corolla whitish-yellow. Berry spherical, about the size of a pea. Seeds nesting in pulp, ex Cav. but not according to Gaertn., nor in the fruit examined. Cymes of fruit large, spreading. Segments of corolla ovate, obtuse.

Racemose-flowered Stylocoryna. Shrub 10 to 12 ft. long, roots by planting them in a pot of sand, and placing it under a hand-glass, in heat.

2 S. fragrans (Blum. bijdr. p. 982.) leaves elliptic-oblong, acute at both ends, glabrous, these with minute stigmas on the veins beneath; corymbs terminal, fastigate, dense-flowered; corolla salver-shaped, having the segments shorter than the tube. \( \gamma \). S. Native of Java, in shady parts of woods. Wahlbergia fragrans, Blum. cat. hort. but. p. 13. Ceriscus fragrans, Nees, in flora, 1825. p. 116. Style very long.

Fragrant Stylocoryna. Shrub 5 to 6 ft. long, roots by planting them in a pot of sand, and placing it under a hand-glass, in heat.

3 S. laxiflora (Blum. bijdr. p. 983.) leaves oblong, acuminated at both ends, stigmas on the veins beneath; corymbs terminal, trifoliate, dense-flowered; corolla salver-shaped. \( \gamma \). S. Native of Java, on the mountains of Parang, in the province of Bantam. The flowers are smaller, and the styles less elongated than those of the preceding species.

Loose-flowered Stylocoryna. Tree 10 to 15 ft. long, roots by planting them in a pot of sand, and placing it under a hand-glass, in heat.

4 S. tomentosa (Blum. bijdr. p. 983.) leaves oblong, acuminated at both ends, stigmas on the veins beneath; corymbs terminal, dense-flowered; corolla salver-shaped, 5-parted. \( \gamma \). S. Native of Java, in the province of Bantam, on the mountains.

Tomentose Stylocoryna. Tree 10 to 12 ft. long, roots by planting them in a pot of sand, and placing it under a hand-glass, in heat.

5 S. pubescens (Batr. in herb. Hanke, ex D. C. prod. 4. p. 377.) leaves oblong, acuminated, downy on both surfaces, as well as on the branchlets; corymbs terminal, pedunculate, of 5 rays. \( \gamma \). S. Native of the island of Luzon. Branches compressedly tetragonal, opposite. Stigmas triangular, acuminate. Calyx minutely 5-toothed. Lobes of corolla linear. Style filiform, undivided, exserted.

Pubescent Stylocoryna. Shrub.

6 S. macrophylla (Batr. in herb. Hanke, ex D. C. prod. 4. p. 377.) leaves oblong, acuminated at both ends, and
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Long-leaved Stylocoryna. Shrub or tree.

1. S. Pan'aká (D. C. prod. 4. p. 377.) glabrous; spines scattered; leaves oblong, minutely apiculate at the apex; racemes axillary, short; pedicels in fascicles, 1-flowered; tube of corolla shorter than the lobes. h. S. Native of the East Indies. Gardénia Pandáki, Val., herb. ex Puer. Ránda Málabáríca, Lam. Branches spinose on one side. Leaves coriaceous, an inch long, and 4 lines broad. Peduncles axillary, very short, bearing the pedicels in an umbel. Stigma oblong, undivided. Fruit unknown. Perhaps sufficiently distinct from the following.

Pandaki Stylocoryna. Shrub.

2. S. Malábáríca (D. C. prod. 4. p. 377.) spines opposite, 3 times shorter than the leaves; leaves oblong-obovate, obtuse, cuneated at the base, glabrous, beset with glandular pili in the axis of the veins beneath; umbels 8-10-flowered, almost terminating the branches; flowers on short pedicels; limb of calyx 5-toothed. h. S. Native of Coromandel and Malabar near Cochin, in arid places. Gardénia frágans, Roxb. corom. t. 197. Posoquéra frágans, Roxb. fl. ind. 2. p. 167. Flowers small, white, sweet-scented. Berry globose, size of a cherry, red, 2-celled. Seeds orange colored. Perhaps G. frágans, Roth, nov. spec. 150. is the same. The Benkára of Rüd. s. c. cited by Lam. for this species, is a distinct plant, from the flowers being said to be purple. The shrub is well adapted for making hedges, being well armed with thorns.

Malabar Stylocoryna. Clt. 1820. Shrub 4 to 5 feet.

Cult. For culture and propagation see Oxyambús, p. 494.


Lin. syst. Pentándria, Monogénia. Calyx with an ovate tube, and a tubular truncate or subdentate limb. Corolla salver-shaped, not exceeding the tube of the calyx; limb large, 5-parted; segments ovate, acute. Anthers linear, sessile in the throat of the corolla, exserted. Stigma clavate, obtuse, undivided. Berry coriaceous, sometimt 4-celled, crowned by the tube of the calyx, attenuated at both ends. Seeds numerous, horizontal, nesting in the pulp. Albumen cartilaginous. Embryo with a common radicle, and foliaceous cotyledons.—Tress. Leaves opposite, oval or oblong. Stipules interpetiolar, ovate, acuminate, decumbent. Flowers axillary or terminal, solitary or few, white, at length yellow. Fruit when young yielding a black juice. Genipá agrees with Stylocoryna in the undivided stigma, and with Gardénia in habit; but from both it is easily distinguished by the truncate limb of the calyx and fruit.

1 G. Americana (Lin. spec. 251.) leaves oblong-lanceolate, quite glabrous on both surfaces; peduncles axillary, dichotomous, coriaceous. h. S. Native of the Caribbean islands, as in St. Domingo, &c., and now cultivated in many parts for the sake of the fruit, especially in Brazil and Guiana. Plum. ed. Burm. t. 136. Gertn. fil. carp. t. 190. Gardénia Genipá, Swartz, obs. p. 84.—Janípába, Márgr. bras. p. 92, with a figure. Pis. bras. 159, with a figure. Flowers small, white. Fruit large, greenish-white, full of dark purple juice; pulp edible, rather acid.

American or Common Genipa. Clt. 1779. Tree 20 to 30 ft.

2 G. Carú'to (H. B. et Kunth, nov. gen. amer. 3. p. 407.) leaves obovate, obtuse, glabrous above, clothed with velvetyomentum beneath; peduncles terminal, 2-3-flowered; pedicels longer than the peduncle. h. S. Native on the banks of the Orinóco and Río Negro, and near Caracas and Carthagena, where it is called Caruto by the natives. Corolla white, having the tube silky both inside and outside.

Caruto Genipa. Tree 20 feet.

3 G. Puré'scens (D. C. prod. 4. p. 378.) leaves obvate, obtuse, glabrous above, and clothed with velvety pubescence beneath; flowers by threes, almost terminal, on very short pedicels. h. S. Native of Cuba, about the Hanavannah. Flowers very like those of G. Americana, but are on shorter pedicels, and fewer in number; and the leaves are broader and blunter.

Downy Genipa. Tree 20 feet.

4 G. Oblongófólia (Ruiz et Pav. fl. per. 2. p. 67. t. 220. f. a.) leaves oblong-ovate, obtuse, shining above, and downy on the nerves beneath, with rather revolute margins; flowers crowded at the tops of the branches, on short pedicels, and disposed somewhat racemously. h. S. Native of Pern, on the Andes, in groves in hot places, and at Guayaquil. The corolla is said to be yellow, but is probably white in the recent state as in the rest of the species. Fruit size of a peach. The seeds and pulp of the fruit are used by the Indies to dye their face and hands of a permanent black colour.


5 G. ? stripesíflora (D. C. prod. 4. p. 378.) leaves elliptic, membranous, acuminated at both ends, glabrous, on short pedicels; stipulas small, deciduous; pedicels axillary, short, 1-flowered; limb of calyx broadly truncate, ciliated, short; tube of corolla broad, conical, striated, hairy on the inside at the base, and closed in the middle inside by a circle of hairs; stigma thick, 2-lobed. h. S. Native of Brazil. Perhaps a proper genus. Leaves somewhat sinuated from some cause.

Striped-flowered Genipa. Tree.

† Species not sufficiently known.

* American.

6 G. Mexíí'ne (Rich. act. soc. hist. nat. par. p. 107.) hairy; leaves oblong-obovate; flowers crowded at the tops of the branches; fruit globose, very villous, crowned by the tube of the calyx. h. S. Native of Cayenne and Surinam. Poir. suppl. 2. p. 708. Duróíía críopíla, Lin. fil. suppl. p. 30. and p. 209.—Merian. s. t. 43. The tree has the habit of Isáritín cocícena. Flowers hexameroe and hexandrous, nearly sessile, very like those of Jasminum Sémíbur. Berry hairy, about the size of the clenched fist, umbellate. Seeds imbedded in the pulp, which is graceful and tube.


** Asiatic.

7 G. ? Buffá'íína (Lour. cosh. p. 149.) prickles long, straight, opposite; leaves ovate, glabrous, in fascicles; flowers solitary; calyx bluntly 5-cleft; berry almost dry, roundish. h. S. Native of Cochinchina. Flowers greenish-white. Berry brownish. Perhaps a species of Ránda or Gardénia, but the berry is said to be 2-celled. Corolla rotate, 5-cleft.

Buffá'íína Genipa. Shrub 9 feet.

8 G. ? Esculeíí'nte (Lour. l. c.) stem quite simple; spines long, straight, opposite; leaves opposite, hairy, in fascicles; flowers lateral, in fascicles; calyx acutely 5-cleft; berry fleshy, roundish, 1-celled. h. S. Native of Cochinchina. Flowers greenish-white. Segments of corolla oblong, acuminated. Berry size of a cherry, edible.


9 G. ? Flá'íí' (Lour. l. c.) prickles few, scattered, straight; leaves broad-lanceolate, glabrous; flowers solitary, terminal; corolla rather hairy. h. S. Native of China, about Canton. Corolla yellow, rotate. Fruit unknown.

Yellow-flowered Genipa. Shrub 5 feet.
Cult. For culture and propagation see Gardénia, p. 499.


Lin. syst. Πenténidia, Monogrýnia Calyx with an ovate, usually ribbed tube, and a tubular truncate, toothed (f. 93. a.), cleft, or parted limb. Corolla funnel-shaped (f. 93. b.), or salver-shaped, having the tube much longer than the calyx, and the limb twisted in aestivation (f. 93. c.), but afterwards spreading, from 5-9-parted. Anthers 5-9, linear, almost sessile in the throat of the corolla or exserted (f. 93. c.). Stigma clavate, bifid or bidentate, lobes thick, erect. Ovarium 1-celled, half divided by 2-5 incomplete dissepiments. Berry fleshy, crowned by the calyx, chartaceous or nuclearle, incompletely 2-5-celled. Seeds minute, immersed in the fleshy parietal placenta. Embryo albuminous.—Unarmed or spinaceous trees or shrubs. Leaves opposite, and sometimes, though rarely, in whorls, oval or ovate. Flowers axillary or terminal, usually solitary, white, and generally sweet-scented. The fruit of the greater number of the species not being sufficiently known, they cannot be divided into proper sections.

§ 1. Shrubs without prickles. Tube of calyx or ovarium ribbed. Tube of corolla cylindrical.

1. G. florída (Lin. spec. p. 303.) shrubby, unarmed, erect; leaves elliptic, acute at both ends; flowers solitary, almost terminal, sessile, salver-shaped; calyx segments vertical, lanceolate-subulate, equalling the tube of the corolla in length; berry elongated, tubinate, ribbed. h. G. Native of China, and cultivated in Japan, East Indies, the Cape of Good Hope, &c. Ker, bot. reg. t. 449. G. jamasíneoides, Sol. phl. trans. 52. t. 20.—Pluk. amal. t. 448. f. 4. Jasminum Capénsé, Mill. dict. no. 7. fig. 180. Ehret. pict. t. 15. Flowers white, sweet-scented, 5-9-parted. Berry 5-6-angled, 5-6-celled at the base, and 1-celled at the apex, orange coloured, size of a pigeon’s egg, and the pulp is used for dyeing yellow in China and Japan. Var. β, flore pléno; flowers double white, when fully blown about the size of the middle rose. h. G. This variety is very frequent in gardens. G. jamasíneoides, Ellis in phl. trans. vol. 51. t. 23. Jasminum Capénsé, Mill. fig. 180.—Rumph. amb. t. 7. t. 14. f. 2.


2. G. radícans (Thunb. diss. gard. no. 1. t. 1. f. 1.) shrub, unarmed; stems radicant; leaves lanceolate; flowers solitary, almost terminal, and nearly sessile, salver-shaped; segments of the calyx vertical, linear-subulate, equal in length to the tube of the corolla. h. G. Native of Japan, and cultivated in the East Indies, and at the Cape of Good Hope. Thunb. fl. jap. t. 20. Ker, bot. reg. t. 75. Andr. bot. rep. t. 491. Flowers white, very fragrant.


3. G. angustípíólia (Lodd. bot. emb. 512.) very like G. florída, from which it chiefly differs in being smaller, with narrower leaves. h. S. Native country unknown. Flowers white, sweet-scented.

Narrow-leaved Gardenia. Fl. July. Clt. 1823. Shrub 3 ft. 4. G. tomeníosa (Blum. mas. ex D. C. prod. 4. p. 379.) unarmed; branchlets, leaves, and calyces clothed with velvetyomentum; leaves obovate-cuneate; flowers terminal, sessile, solitary; tube of calyx angularly ribbed: calyxic teeth 10, subulate, short. h. S. Native of the island of Java. Lobes of corolla 10, obovate-oblong; tube hardly longer than the calyx. Flowers white, sweet-scented. Fruit unknown.

Tomentósa Gardenia. Shrub.

5. G. calycúlata (Roxb. fl. ind. 2. p. 550.) arboreous, unarmed; leaves ovate, petiolate, acuminated, smooth; flowers terminal, solitary, sessile, involucrated; calyce segments entire; anthers inserted within the tube of the corolla. h. S. Native of the East Indies. Flowers large, white, fragrant, 5-parted.

Calycúlata Gardenia. Tree.

6. G. costáta (Roxb. fl. ind. 2. p. 550.) arboreous, unarmed; leaves ovate, petiolate, acuminated, smooth; flowers terminal, salver-shaped; calyce segments reflexed, caducous; berry droopaceous, oval, 15-ribbed, 1-celled, containing a 2-valved shell; placentas 2, opposite. h. S. Native of the mountainous parts of India; from those of Chittagong it has been introduced to the botanical garden of Calcutta. G. coronária, Hamilt. in Synes. emb. to Ava, p. 474. with a figure. Flowers large, white, sweet-scented, the tube being 3 inches long, and the border above 4 in diameter; limb 5-parted. Berry yellow, containing a soft and rather fetid pulp.

Ribbed-fruited Gardenia. Tree 20 feet.

7. G. carína (Wall. in Roxb. fl. ind. 2. p. 560.) arboreous, unarmed, resinous on the younger parts; leaves elliptic-ovate, ribbed, villous beneath; flowers terminal, salver; limb of calyx truncate, broad, obscurely 5-lobed, and 5-keeled; tube of corolla very long: limb 6-8-lobed. h. S. Native of Penang, where it grows on the hills. Flowers smaller than those of G. costáta, at first snow white, but afterwards yellow, becoming when dry of a beautiful orange colour. Fruit precisely as in G. costáta.

Keel-calycy Gardenia. Tree.

8. G. grandíflóra (Lour. coch. p. 147.) arboreous, unarmed; leaves lanceolate, shining; flowers solitary, terminal, and hexamous; segments of the calyx reflexly-salver; corolla salver-shaped, 5-parted; berry oblong, acute at both ends. h. G. Native of Cochinchina, on the banks of rivers. Blum. bijdr. p. 1013. Flowers large white, sweet-scented. Berry globose, 1-celled, glabrous, yellow. Seeds nestling in red pulp. Anthers 6, rarely 5-7.

Great-flowered Gardenia. Tree middle-sized.

9. G. taréflórie (D. C. prod. 4. p. 380.) unarmed, glabrous, resinous at the tops of the branches; leaves obovate, almost sessile; stipulas broad, connate, permanent, short-acuminated; flowers solitary, in the axils of the upper leaves, pedicellate; tube of calyx angular: limb 3-4-parted, with vertical-oblong foliaceous lobes; corolla with a long terete tube, and a 5-7-parted limb. h. G. Native of the island of Tahiti, where it was collected by D’Urville. Lobes of calyx fewer by abortion than the lobes of the corolla. Stigma bifid, the lobes long, and acute. Fruit unknown.

Tahiti Gardenia. Shrub.

10. G. marúba (Siebold, in Blum. bijdr. p. 1013.) unarmed; leaves opposite, or 3 in a whorl, obovate, coriaceous, glabrous; calyx angular, 5-leaf: segments subulate, spreading. h. G. Native of Japan. The rest unknown.

Marúba Gardenia. Tree.

11. G. suléata (Garten. fil. carp. 3. p. 79. t. 194.) berry obovate or elliptic, attenuated at the base, angular from obtuse funrows, 1-celled; seeds imbedded in the pulp. h. G. Native country unknown. Perhaps allied to G. florída.

Furrowed-fruited Gardenia. Shrub.

§ 2. Unarmed shrubs or trees. Tube of calyx or ovarium not
ribbed; having the limb equally toothed or parted, rarely truncate. Tube of corolla cylindrical.

12 G. mutabilis (Reinw. in Blum. bijdr. p. 1016.) unarmed? leaves oblong, acuminate, glabrous, but pubescent in the axils of the ribs on the upper surface; flowers axillary, solitary; limb of calyx rather truncate; corolla with an elongated glabrous tube, and a 5-cleft limb. S. Native of the island of Cebu. Said to be allied to G. carinata and G. tobobiflora.

Changeable-flowered Gardenia. Tree.

13 G. calycula; leaves oblong-lanceolate, rather coriaceous, glabrous, on short pedicels; flowers axillary, solitary, almost sessile; corolla with a long tube, and a 5-cleft equal border; calyx 5-cleft. S. Native of Sierra Leone, on the edges of woods. Flowers pale red, pendulous.

Large-calyxed Gardenia. Shrub.

14 G. Reinwardtiana (Blum. bijdr. p. 1913.) unarmed? leaves oblong, attenuated at both ends, bluntish at the apex, coriaceous, glabrous; corymbs axillary, trifid, shorter than the leaves; limb of calyx obsolescent 5-toothed, rather truncate; corolla with an elongated glabrous tube, and a 5-cleft limb. S. Native of the Moluccas. Ignatia, Reinw. herb. ex Blum. Ovarium half 2-celled, many seeded. Reinwardt's Gardenia. Shrub.

15 G. latifolia (Ait. hort. kew. 1. p. 294.) arboreous, unarmed; leaves almost sessile, ovate or obovate: in the axils of the veins beneath are hollow glands with hairy margins; flowers terminal, 1-4-together, almost sessile, salver-shaped, 7-11-parted; limb of calyx short, subdeterminate; berry drupaceous, round, 1-celled, 5-valved. S. Native of the East Indies, on barren rocky hills, in the Circars and Carnatic. Roxb. cor. 2. p. 18. t. 134. fl. ind. 2. p. 552. G. enencandra, Koen. mss. ex Roxb. Flowers very large and very fragrant, when they first open in the morning white, gradually growing yellow before night. Berry size of a pillate's egg, crowned by a small part only of the tube of the calyx. Leaves opposite or 3 in a whorl. — G. latifolia, Gaertn. fr. 5. p. 78. t. 193. is a distinct species from the fruit being crowned by the whole of the calyx, not with part of it.


16 G. lucida (Roxb. fl. ind. 2. p. 553.) subarboreous, unarmed, with resinous buds; leaves oblong, smooth, shining, with lateral simple parallel veins; flowers almost terminal, solitary, on short pedicels; lobes of calyx 5, subulate, 3 times shorter than the tube of the corolla; berry drupaceous, containing a 2-valved shell. S. Native of Chittagong, and various other parts of India; and of the island of Luzon. Leaves about 6 inches long and 3 broad. Peduncles clavate, 1 to 1½ inch long. Flowers large, pure white, fragrant, 5-parted.

Shining-leaved Gardenia. Cilt. 1819. Shrubb or tree.

17 G. arborea (Roxb. fl. ind. 2. p. 554.) arboreous, unarmed; leaves ovate-oblong; flowers terminal, almost sessile, usually by threes; corolla with a filiform tube, and a 5-parted limb; berry drupaceous, smooth, containing a 4-5-valved shell. S. Native of the East Indies, among the Circars. The leaves are deciduous during the cold season, and the shrub continues naked till the hot season is pretty far advanced. From the buds and wounds made in the bark there exudes a very beautiful yellow resin, like that from G. gunnifera. The size, number, fragrance, mutability, and beauty of the flowers of this species render it more deserving of a place in the garden than any other species. The natives eat the fruit when ripe.

Arboreous Gardenia. Tree.

18 G. gunnifera (Linn. fl. suppl. 1. p. 164.) shrubby, unarmed, with resinous buds; leaves oblong, bluntly acuminate, (hairy, ex Linn.); flowers sessile, solitary; almost terminal; segments of the calyx ovate, acute, very short; tube of corolla equal in length to the limb. S. Native of Ceylon and Coromandel. Thunb. Diss. gard. no. 4. t. 2. f. 3. Rottil and Wildl. in act. bonn. 4. (1803) p. 198. G. inermis, Dietr. lex. 4. p. 285. Allied to G. arborea. Flowers white, sweet-scented. From the bark of this tree exudes a yellow resin, similar to gum elemi.

Gum-bearing Gardenia. Shrub 3 to 4 feet.

19 G. clusiaefolia (Jacq. coll. append. 37. t. 4. f. 3.) shrubby, unarmed, glabrous; leaves ovate, retuse, and somewhat emarginate, coriaceous, on short pedicels; peduncles almost terminal, racemose; flowers on long pedicels; limb of calyx short, 5-toothed; corolla salver-shaped, with 5 linear acute segments, which are about the length of the tube. S. Native of the Bahama islands, where it is called by the inhabitants seven years apple, ex Catesb. car. 1. p. 59. t. 59. Flowers white, sweet-scented, with a greenish tube. Berry large, oval. Seeds imbedded in the pulp. The internal structure of the berry is unknown. It differs from Gardenia in the shape of the stigma and disposition of the flowers.

Clusia-leaved Gardenia. Shrub 5 feet.

20 G. tetrasperma (Roxb. fl. ind. 2. p. 555.) shrubby, unarmed; leaves ovate-cuneated, smooth; flowers axillary, solitary, on short pedicels, pendulous; calycine segments 5, subulate; limb of corolla 5-parted; berry round, 4-seeded. S. Native of the East Indies, on the mountains near Shree-nugur. Gardenia, no. 3. Hardw. in asiat. res. 6. p. 354. Leaves on short pedicels. Flowers greenish yellow, sweet-scented, with a long tube, which widens upwards, and partly closed about the middle by a ring of silky down.

Four-seeded Gardenia. Shrub 2 feet.

21 G. tubifera (Wall. in Roxb. fl. ind. 2. p. 562.) subarboreous, unarmed; leaves cuneate-oblong, petiolate, slightly scabrous above, and pubescent beneath; drupe round, uneven, crowned by the very long truncate calycine tube. S. Native of the East Indies, in Singapore. All the young parts of the tree are resinous. Leaves 5-6 inches long. Drupe containing a putamen, which is divisible into 8 valves. Flowers unknown.

Tube-bearing Gardenia. Tree or shrub.

22 G. anisophylla (Kt. in Roxb. fl. ind. 2. p. 561.) arboreous, unarmed; leaves elliptic, those opposite each other unequal, densely clothed with villi; stipules concrete at the base, bearded inside; corymbs axillary, villous; limb of calyx 5-toothed; tube of corolla short; drupe oval, villous. S. Native of the islands of Pulo-Parent and Singapore, on the hills. Leaves tapering to the base, 6-12 inches long. Flowers rather small, white, by threes, villous outside: limb 5-parted. Stigma clavate, 2-lobed. Drupe size of a walnut, containing a 2-valved putamen. Perhaps a species of Génipa or Posoqueria.

Unequal-leaved Gardenia. Tree.

23 G. formosa (Cham. et Schlecht. in Linnæa, 4. p. 200.) unarmed; leaves on short pedicels, nearly orbicular, terminating in a very short acumens each, clothed with canescent tumentum along the veins on the upper surface, but clothed with hoary tumentum underneath, as well as the petioles, cymes, and flowers; calyx 5-toothed; stigma bilamellate. S. Native of Brazil. Corolla white, having the tube about 4 inches long, and the throat an inch in diameter; limb 5-parted. Fruit unknown.

Beautiful Gardenia. Shrubb.

24 G. sellowiana (Cham. et Schlecht. l. c. p. 198.) unarmed, glabrous; leaves broad-lanceolate, on short pedicels, shining above; stipules connate between the petioles; cymes 3-5-flowered; calyx 5-toothed; stigma bilamellate. S. Native of Equinoctial Brazil. Corolla white, hairy; the tube about 3 inches long and coriaceous, and the limb 5-parted. Fruit spherical, smooth.
Sello’s Gardenia. Shrub.

25 G. hexa'ndra (Willd. rel. in Rœm. et Schultes, syst. 5. p. 243.) unarmed; leaves obovate, pubescent beneath; flowers usually hexandrous; corollas hairy both inside and outside, with the tube very short. h. S. Native of South America, where it was collected by Humboldt and Bonpland. The rest unknown.

**Hexandrous-flowered Gardenia.** Shrub.

§ 3. Unarmed shrubs. Tube of calyx or oecarium not ribbed; but the limb is tubular and ribbed, 5-6-cleft, as well as being cleft laterally. Tube of corolla cylindrical.—Piranga, Juss.


§ 4. Unarmed shrubs. Tube of calyx ribbed or angular from the decurrent segments. Tube of corolla with a dilated obconical throat. Berry 2-celled.—Rothenhaim, Thunb.

27 G. Rot'mañ'nia (Lin. fil. suppl. p. 165.) arboreous, unarmed; leaves oblong, acute, glabrous, on very short pedioles, having glandular hairs in the axils of the veins underneath; flowers axillary, and almost terminal, solitary, sessile, 5-parted, and pentandrous; calyx ribbed, having the segments subulate, terete, and erect; corolla with an obconical tube, a campanulate throat, and spreading acute segments. h. G. Native of the Cape of Good Hope. Thunb. diss. gard. no. 6. Sims, bot. mag. 690. Rothmañna Capeñas, Thunb. act. holm. 1776. p. 65. f. 2. Flowers white, spotted with red, sweet-scented; tube of corolla glabrous. Young branches downy.


§ 5. Unarmed or spinose shrubs. Leaves 3 in a whorl.

28 G. Terni'folia (Thonn. in Schum. pl. guin. p. 147.) unarmed, glabrous; leaves 3 in a whorl, ovate, cuneated at the base, almost sessile; flowers solitary, almost terminal, girded at the base by a short truncate involucel; calyx with a smooth tube, and a tubular short toothed limb; corolla with a long terete tube, and a 6-7-parted limb. h. S. Native of Guinea. Flowers 3 inches long, white; lobes of corolla oval-oblung, acuminate.

**Tern-leafed Gardenia.** Shrub 4 to 5 feet.

29 G. Thys'n'ca (D. C. prod. 4. p. 382.) glabrous; branches 3 in a whorl, spinosecent; leaves 3 in a whorl, ovate, cuneated at the base, almost sessile; flowers solitary, terminal, sessile; calyx with a smooth tube, and a tubular semi-5-cleft limb; lobes acute; corolla with a long almost terete tube, and a 5-parted limb; lobes thick, ovate. h. S. Native of the Gambia, in woods. Leaves hardly an inch long. Corolla 2 inches long. Berry ovate-globose. Fruit size of a walnut. Spines thick, short, conical, spreading.

**Three-spined Gardenia.** Shrub 4 to 5 feet.

30 G. Medicine'lis (Vahl, in Schum. pl. guin. p. 148.) glabrous; spines tern, stiff, leafy at the apex; leaves elliptic, glabrous; flowers terminal, sessile, solitary; limb of calyx bifid, with roundish recesses, and trifid segments; corolla with the tube dilated upwards, and the lobes ovate. h. S. Native of Guinea.

**Medicinal Gardenia.** Shrub 4 to 5 feet.


31 G. Am'ena (Sims, bot. mag. t. 1904.) shrubby; spines axillary, short, straight; leaves oval, acute, glabrous, on short petioles; flowers almost terminal, solitary, sessile, 5-parted, and pentandrous; tube of calyx with short teeth; corolla salver-shaped, with a long terete tube. h. G. Native of China. Flowers white, having the lobes purple on the outside in that part, which is exposed to the air, while the corolla is in restoration; the tube greenish.


32 G. Tur'egida (Roxb. fl. ind. 2. p. 557.) arboreous, with swollen mealy bark, and brachiante branches; spines opposite and terminal; leaves obovate, tapering into the petioles at the base, smooth; flowers lateral, usually solitary; limb of calyx tubular, 5-toothed; corolla smooth, salver-shaped; anthers almost inclosed. h. S. Native of the East Indies, at Botiam. Leaves 1-4 inches long, and 1-3 broad. Stipulas broad at the base, and subulate at the apex. Flowers 5-6-perted. Berry oval, scabrous outside, containing a hard 5-valved putamen. Seeds imbedded in the pulp. Stigma clavate, 5-grooved.

**Spiny-barked Gardenia.** Tree.

33 G. Mont'ana (Roxb. fl. ind. 2. p. 556.) arboreous; spines opposite, short, acute, stilt; leaves obovate, obtuse, almost sessile, downy beneath, with revolute edges; flowers rising 3-5 in a fascicle from the buds, on short pedicels; limb of calyx usually 5-toothed; corolla 5-7-cleft; stamens inclosed; berry drupaceous, roundish, containing a 5-6-valved putamen. h. S. Native of the East Indies, among the Cercar mountains. Bark white, soft, and spongy. Leaves deciduous in December, 3 inches long, and 2 broad, smooth and shining above. Flowers pretty large, fragrant, when first open white, but soon becoming more or less yellow. Corolla with a somewhat gibbous tube, and a smooth throat. Nectary a moniliform fleshy ring, surrounding the insertion of the style. Berry the size of a pullet’s egg, ash coloured, and yellow mixed. Seeds imbedded in the pulp.

**Mountain Gardenia.** Clt. 1819. Tree or shrub.

34 G. Campanula'ta (Roxb. fl. ind. 2. p. 557.) shrubby; branches short, spiny at the apex; spines solitary; leaves lanceolate, smooth, acuminate at both ends; flowers on short pedicels, in terminal and lateral fascicles; limb of calyx campanulate, with a short acutely 5-toothed border; corolla subcampanulate, 5-lobed; berry roundish-ovate. h. S. Native of the East Indies, in the forests of Chittagong. Thorns generally terminating the little lateral opposite branches. Leaves 2-5 inches long. Stipulas triangular, acute. Flowers small, of a pale yellow colour, crowded at the extremities of short stiff lateral spinose branches. Stigma somewhat 5-grooved. Anthers inclosed. Berry round, the size of a golden pippin apple, smooth, 1-celled; placentas 5, parietal. Seeds imbedded in the yellow pulp.

**Campanulate-calved Gardenia.** Clt. 1815. Sh. 5 to 10 ft.
35. G. Blumana (D. C. prod. 4. p. 388.) shrubby, spinose; leaves lanceolate, glabrous; flowers axillary, and almost terminal, usually solitary; calyce segments ovate, bluish; corolla somewhat campanulate.  G. S. Native of Java. Among bushes on the mountains. G. campanulata, Blum. bijdr. p. 1017. This differs from G. campanulata, Roxb. in the figure of the calyx.

Blume’s Gardenia. Shrub 5 to 6 feet.

† Species not sufficiently known.

* Unarmed shrubs.

36. G. ? Volubilis (Louv. coxh. p. 148.) shrubby, unarmed, twining; leaves lanceolate, acuminate, glabrous, on short peduncles; peduncles long, axillary, many flowered; calyce segments 5, acute, erect; corolla funnel-shaped, with a dilated throat; berry roundish, 2-celled.  G. S. Native of China beyond the suburbs of Canton. Flowers pale. Stigma thick, warty, subulate at the apex. Seeds round. This shrub should be excluded from Gardénia. Segments of corolla, long, repand.

Twining Gardenia. Shrub tw.

37. G. ? Pubescens (Roth. nov. spec. 151.) unarmed; leaves roundish-oval, acuminate at both ends, clothed with brown tomentum beneath young, as well as on the branchlets; corollas axillary, dichotomous, divaricate; calyx minutely 5-toothed; corolla funnel-shaped, tomentose.  G. S. Native of the East Indies. Flowers the size of those of Rhamnus frangula. Berry the size of a cherry, rugged from dots, glabrous.

Pubescent Gardenia. Ch. 1824. Shrub 4 to 6 feet.

38. G. ? Acuminata (Spreng. syst. 1. p. 765.) unarmed; leaves oblong, coriaceous, opaque; branchlets hairy; peduncles axillary, 3-4-flowered, shorter than the leaves; calyce segments subulate, shorter than the tube of the corolla.  G. S. Native of Brazil.

Brazilian Gardenia. Shrub.

40. G. ? Longifolia (Wall. in Roxb. fl. ind. 2. p. 559.) shrubby, stiff; branches numerous, deciduous, spinose at the apex; leaves in fascicles, obovate, almost sessile, smooth; flowers solitary, sessile, terminal; limb of calyx tubular, 5-toothed; teeth subulate; corolla with a 5-parted limb, and lanceolate acuminate lobes.  G. S. Native of Nipau, on the southern face of Shoepore, above Thoka. Branches obscurely 4-cornered. While young the thorns are pubescent, and covered by a flor of approximate stipula-like scales. Flowers small, of a yellowish white colour, fragrant. Corolla pubescent within, and closed by a circle of silky hairs about the middle. Stigma obscurely 2-lobed. Very nearly allied to G. tetrapérla. Cells of ovary 3-seeded.

Dense Gardenia. Shrub 4 to 5 feet.

42. G. seamarin (Thum. diss. gard. no. 9. t. 2. f. 5.) shrubby, climbing; spines straight, very short, deciduate; leaves ovate, glabrous; peduncles axillary, solitary, 1-flowered; corolla with a terete tube, and lanceolate segments; calyx 5-toothed.  G. · G. Native of China. G. jasminoides, Retz. obs. 2. p. 14. Perhaps a species of Rândia. Corolla white, glabrous. Stigma clavate.

Climbing Gardenia. Shrub cl.

43. G. ? Patula (Horsf. ex Willd. in Roem. et Schultes, syst. 5. p. 244.) spines hooked, shorter than the pediole; leaves ovate, acute; corollas axillary.  G. S. Native of Java. The rest unknown.

. Spreading Gardenia. Shrub.

G. ? Stipularis (Rottl. et Willd. in act. bonn. 4. (1803.) p. 183.) shrubby; spines setaceous; leaves elliptic, acute at both ends, short; flowers sessile, terminal, calyce segments obtuse, and are as wide as the tube glabrous.  G. S. Native of the East Indies. Spines very short. Leaves like those of G. spinosa. Corolla with a long slender tube. The spines, according to Rottler, are stipular; hence the name.

Stipular-spined Gardenia. Shrub.

45. G. ? Fagiollia (Willd. rel. ex Roem. et Schultes, syst. 5. p. 243.) branchlets terminated by 4 spines; flowers solitary; leaves roundish-ovate, downy beneath, stiff, plicate, veined.  G. S. Native of South America, where it was collected by Humboldt and Bonpland. Willdenow says the leaves are acutely angulated, but this is probably a mistake.

Beach-leaved Gardenia. Shrub 5 to 6 feet.

46. G. ? Cornifolia (D. C. prod. 4. p. 384.) shrubby, spinose; branches glabrous; leaves acuminate, ovate, rather coriaceous, and are, as well as the branches, downy; flowers 6-8-together at the tops of the branches, sessile, subcorollate, each furnished with a bifid involucre; calyx 4-toothed; corolla villos on the outside, with a terete tube, and a spreading 4-parted limb.  G. S. Native of the temperate parts of New Granada, near Guadua. Gardenia parviflora, H. B. et Kunth, nov. gen. amer. 3. p. 408. t. 293. but not of Poir. Flowers white, sweet-scented. The ovary and fruit being unknown, it is doubtful whether it belongs to the genus.

Dogwood-leaved Gardenia. Shrub 5 feet.

47. G. ? Microcarpa (Bartl. in herb. Huenke ex D. C. prod. 4. p. 384.) spines few, short, straight; leaves oblong, coriaceous, shining above, quite glabrous on both surfaces, as well as the branchlets; stipitates subulate acuminate; flowers 1-3-together, terminal, pedicellate; limb of calyx short, tubular, with subulate teeth, which are much shorter than the corolla, which is glabrous; fruit ovate, crowned.  G. S. Native of the Philippine islands, as in Luzon, &c. Perhaps a species of Rândia.

Small-fruited Gardenia. Shrub 5 to 6 feet.

Cult. All the species of Gardenia bear elegant sweet-scented flowers, which in most of the species are large. They are generally free flowerers. The soil best suited for them is a mixture of loam, peat, and sand. The stave species thrive best in a moist heat; and cuttings of all root readily if taken off while not too ripe, planted in a pot of sand, which should be plunged in a moist heat under a hand-glass. The double-flowered varieties of G. flórida and G. radécçus are cultivated to a considerable extent, under the name of Cape jasmine, for the beauty and fragrance of their flowers; the best manner of getting these to bloom freely is to set them in a close frame, on a little bottom heat, in spring, but the pots should not be plunged; and in winter they may be set in the green-house.
ceros, Lour. coch. p. 151.—Posoquèria and Rándia species, Roxb. fl. ind.

Lin. syst. Pentandria, Monogynia. Calyx with an obovate tube and a 9-lobed limb. Corolla salver-shaped, with a short tube, which is hardly longer than the calycine lobes in the first section, but in the second section 2 or 3 times longer, always with a 5-parted limb, which is twisted in revolution. Anthers sessile within the tube of the corolla, inclosed. Stigmas 2, thick. Berry nearly dry, crowned by the calyx, corticate, 2-celled. Seeds many in each cell, fixed to a central placenta, wingless, imbedded in the pulp, or imbricated downwards. Albumen cartilaginous. Embryo straight, with a terete radicle, and orbicular flat cotyledons.—Much branched small trees or shrubs, with axillary opposite or subverticillate thorns. Leaves sessile or on very short petioles. Stipulas solitary on each side, sometimes evidently formed from 2 being combined. Flowers almost sessile, usually solitary, rising from the axis of the leaves.—This genus is nearly allied to Posoquèria, but differs in the dry fruit, and in its being truly 2-celled.


§ 1. Flowers axillary, solitary, on short pedicels.

1 R. latifolia (Lam. dict. 3. p. 24. ill. t. 156. f. 1.) branchlets glandular; leaves obovate, quite glabrous, almost sessile, cuneated at the base; flowers axillary, sessile, solitary, salver-shaped; tube of corolla twice the length of the calycine teeth, with a pilose throat. ț. S. Native of the West India islands, in arid places among bushes; and probably of Mexico. Rándia aculeata, Lin. spec. p. 214. Gardënia aculeata, Ait. hort. kew. Gard. Rándia, Swartz, fl. ind. occ. p. 526.—Browne, jam. t. 8. f. 1. Sloan. hist. t. 2. f. 4. Spines axillary, opposite, spreading, forming a straight angle, 4-5 lines long. Corolla white, with the tube 4-5 lines long, and green. Berry the size of a small cherry, white or yellow. Seeds 6-8 in each cell, surrounded by pulp. Browne called this species Indigo berry, because the pulp of the fruit stains paper and linen of a fine fixed blue colour. The spines at the tops of the branchlets are usually solitary.

Var. b. mitis (D. C. prod. 4. p. 385.) the larger leaves are nearly oval; the thorns are few or wanting altogether, and the flowers are fewer and larger than in the species. ț. S. Native along with the species, but in more moist situations. Rándia mitis, Lin. spec. p. 213. Gardënia Rándia b. mitis, Swartz, fl. ind. occ. p. 528. Gard. Rándia, Sim., bot. mag. t. 1841.—Sloane, hist. t. 161. f. 1. Flowers white. The juice of the fruit is deep blue.


2 R. obovata (H. B. et Kunth, nov. gen. amer. 3. p. 409, but not of Ruiz and Pav.) branchlets clothed with hairy tomentum; leaves obovate, glabrous; thorns straight, spreading; flowers solitary, sessile, almost terminal; tube of corolla twice the length of the calyx, with a silky throat? ț. S. Native of New Granada, at the mouth of the river Sinu. Flowers small, white. Very like R. latifolia, but differs in the branches being tomentose, and in the flowers being smaller.

Obateau-leaved Rándia. Shrub 5 to 8 feet.

3 R. purpureascens (Ruiz et Pav. fl. per. 2. t. 120. f. b.) leaves obovate, acute, downy; thorns opposite, axillary, spreading, much shorter than the leaves; flowers solitary, sessile, girdled at the base by numerous short adpressed bracteas; tube of corolla equal in length to the calycine lobes. ț. S. Native of Peru, on the Andes, in hot places among broken rocks. R. obovata, Ruiz et Pav. fl. per. syst. 2. p. 68. Rosi. et Schultes, syst. 5. p. 246. but not of Kunth. Gardënia obovata, Dietr. Spreng. Floriferous branches spinose, the rest unarmed, spreading, and somewhat tetragonal; stipulas subulate. Leaves 4-5 inches long. Corolla white, twice the length of the calyx. Berry pubeuscent, of a greyish yellow colour, crowned by the lobes of the calyx, which are acuminate.

Downy Rándia. Fl. June, Aug. Clt. 1820. Shrub 5 to 6 ft. 4 R. rotundifolia (Ruiz et Pav. fl. per. 2. p. 68.) thorns and branches somewhat verticillate; leaves roundish and ovate, downy on both surfaces, wrinkled; flowers solitary, sessile; corolla twice as long as the calyx. ț. S. Native of Peru, in groves about Huassa-Huassi. Gardënia rotundifolia, Dietr. ex Róm. et Schultes, syst. 5. p. 246. Stipulas ovate, acute. Flowers solitary in the centre of the leaves. Corolla white. Berry yellowish, 1-celled, size of a filbert, when young, crowned by the lobes of the calyx, which are elongated and linear. Seeds compressed, imbedded in the black pulp.


5 R. echinocaíps (Moç. et Sesse, fl. mex. icon. ind. ex D. C. prod. 4. p. 385.) thorns in a whorl, spreading; leaves ovate, acuminate, rather villous, crowded at the tops of the branches; flowers solitary, sessile, almost terminal; fruit globose, echinate. ț. S. Native of Mexico. Flowers white. Limb of calyx 5-lobed; lobes linear-subsulate. Allied to R. tetractintha, but differs in the calyx being 5-parted, not tubular and 5-toothed, and in the tube of the corolla being one-half shorter.

Hedgehog-fruited Rándia. Shrub 4 to 6 feet.

6 R. dumetorum (Lam. ill. t. 156. f. 4.) thorns opposite; leaves ovoid, bluntish, cuneated at the base, glabrous; flowers sessile, solitary, almost terminal; limb of calyx 5-parted, with oblong lobes, which are a little shorter than the corolla, which is villous. ț. S. Native of the East Indies, frequent on the sea shore. Cánthium coronatum, Lam. dict. 1. p. 602. Gardënia dumetorum, Retz, obs. 2. p. 14. Róxb. cor. t. 136. Gardënia spinosa, Lin. fl. suppl. t. 164. Rándia spinosa, Blum. bijdr. p. 981. Posoquèria dumetorum, Róxb. fl. ind. 2. p. 564. Gardënia spinosa, Thunb. diss. gard. no. 7. t. 2. f. 4. Cerisëus Malahabícas, Garnt. fr. t. 1. 28.—Pluën. t. 98. f. 6. Flowers white, clothed on the outside with adpressed villi, sweet-scented. Branches downy while young, but afterwards glabrous. Berry almost globose, yellow, about the size of a small apple, 2-celled, and crowned; cells many seeded. This shrub is employed for fences in the places of its natural growth. The fruit bruised and thrown into ponds where fish are, they are soon intoxicated, and seen floating. Fishermen sometimes follow this mode to enable them to take the fish with more ease. They are not deemed less wholesome from the effects of the fruit. Cécceus Indicus does not grow in those parts, nor is it known or used there for this purpose.


7 R. uliginosa (D. C. prod. 4. p. 386.) thorns almost terminal, opposite; branches tetragonal; leaves obovate, somewhat cuneated, glabrous; flowers solitary, sessile, almost terminal; limb of calyx tubular, almost entire, a little shorter than the tube of the corolla, which is villous in the throat. ț. S. Native of the East Indies, delighting in moist places, such as the banks of rivers, low lands, &c. Gardënia ulignosa, Retz, obs. 2. p. 14. Róxb. cor. t. 135. Posoquèria ulignosa, Róxb. fl. ind. 2. p. 563. Thorns 1-2-13 or 4 at the extremities of the branchlets. Leaves 2-3 inches long, and 1½ broad. Flowers 1-2 or 3 at the ends of the branchlets, large, white, and fragrant. Berry size and shape of a pullet's egg, ash coloured, or olive grey, 2-celled.
Seeds flattish, nesting in the pulp. The flowers of this species render it deserving of a conspicuous place in a hot-house. The uncommon appearance of the plant is also in its favour.


8 R. _longissima_ (D. C. prod. 4. p. 386.) thorns opposite or alternate, horizontal; branches long, dependent; leaves obovate-cuneate, smooth; flowers axillary, and almost terminal, solitary on short pedicels; tube of calyx cylindrical, 5-lobed; lobes ovate-cordate, permanent; corolla villous on the outside; berry obovate, smooth. _See S._ Native of the coast of Coromandel. Posoquêria longissima, Roxb. fl. ind. 2. p. 566. Link, enum. hort. b. 225. Thorns sharp, from 1 to 2 inches long. Leaves on the young shoots opposite, on the old ones in fascicles. Stirpilas subulate. Flowers pretty large, pure white, and fragrant. Tube of corolla as long as the calyx, with a villous throat. Berry size of a nutmeg. Seeds immersed in the pulp.


9 R. _nutans_ (D. C. prod. 4. p. 386.) thorns slender, opposite, spreading; branches long, dependent, pubescent while young; leaves narrow-obovate-oblong; flowers axillary, solitary, on short peduncles; corolla silky on the outside; berry globose, crowned by the tube of the calyx, which is entire. _See S._ Native of the East Indies. Posoquêria nutans, Roxb. fl. ind. 2. p. 565. Ceriscus Malabáricus, Gaertn. fr. 1. t. 28. Leaves on short pedioles, opposite on the young shoots, but fascicled on the old ones, from 1 to 2 inches long, by about 1 broad. Flowers solitary, under the spines, middle-sized, white, and fragrant; throat of corolla villous. Berry size of a nutmeg, 2-celled.


§ 2. Flowers in fascicles or racemes, in the axils of the leaves, or extremities of the branches.

10 R. _parviflora_ (Lam. dict. 3. p. 25.) thorns opposite, very short; leaves ovate, petiolate, glabrous; racemes villous; flowers axillary, disposed in fascicles, on short pedicels; limb of calyx with 5 short teeth. _See S._ Native of the East Indies. The thorns, according to Lamark, are arched. Gardênia Sonnerâtii, Spreng. syst. 1. p. 762. Perhaps Gardênia macrâthâ, Thunb. diss. gard. no. 8. t. 1. f. 2. is referable to this species, but the spines are said to be straight; but the fruit in both are unknown, therefore the genus to which they belong is doubtful. Flowers small, 3-together.

_Small-flowered Randia._ Fl. April, June. Clt. 1818. Shrubs 4 to 5 feet.

11 R. _floribunda_ (D. C. prod. 4. p. 386.) thorns axillary, stiff; leaves opposite and in fascicles, obovate-cuneate, smooth; flowers disposed in lateral fascicles, on short pedicels; tube of calyx longer than the lobes, which are lanceolate; corolla silky outside; berry ovate, cordate, polished. _See S._ Native of the coast of Coromandel. Posoquêria floribunda, Roxb. fl. ind. 2. p. 569. A large stiff-branched shrub, in a good soil growing to a small tree. Flowers middle-sized, white at first, but soon becoming yellow, and fragrant, produced in fascicles, from short scaly spurs. Segments of corolla obvolute. Berry size of a prune, 2-celled, many seeded, crowned.

_Bundle-flowered Randia._ Shrubs or small tree.

12 R. _longiflora_ (Lam. dict. 3. p. 26. ill. t. 156. f. 3. but not of Salish.) arboreous; thorns opposite, recurved; leaves lanceolate-oblong, smooth; coriaceous terminal and axillary, 11-13 flowers; limb of calyx tubular, 5-lobed; lobes semilunar; tube of corolla long and slender. _See S._ Native of Chittagong, in the East Indies, where it grows to a pretty large tree. Posoquêria longiflora, Wall. in Roxb. fl. ind. 2. p. 568. Gardênia multiglobosa, Willd. spec. 1. p. 1231. Posoquêria multiglobosa, Blum. bijdr. p. 980. Branches terete, smooth. Leaves 6 inches long, and 1½ or 2 broad. Flowers large, pale, or nearly white when they first expand, becoming yellow by the second day, fragrant. Berry the size of the cherry, yellow when ripe, smooth, fleshy.


13 R. _fasciculata_ (D. C. prod. 4. p. 386.) thorns axillary, spreading; leaves obovate-oblong, almost sessile, smooth; fascicles of flowers nearly sessile, axillary, and in the forks of the branches; calyx hairy, with 5 subulate lobes. _See S._ Native of the East Indies. Posoquêria fasciculata, Roxb. fl. ind. 2. p. 568. A much branched shrub. Thorns straight. Flowers middle-sized; at first white, but in the course of a day changing to a pale yellow colour. Segments of corolla oblong. Ovary 2-celled, many seeded.

_Fascicled-flowered Randia._ Shrubs 4 to 5 feet.

14 R. _rigida_ (D. C. prod. 4. p. 386.) thorns opposite, subulate, each having an annular joint, rarely 2 above the middle, the lower half downy, the upper smooth and shining; branches tetragon, and are, as well as the calyces, villous; leaves ovate, smooth, on short pedioles; flowers by threes, axillary, and almost terminal; tube of corolla long, slender; berry downy. _See S._ Native of the valley of Nipaul, and the surrounding mountains; and also at Nokote. Posoquêria rigida, Roxb. fl. ind. 2. p. 570. A strong rigid branchy shrub. Leaves in approximate fascicles, ending each in a cuspitate point. Flowers white and fragrant. Leaves shining above, but with a few short hairs along the nerves beneath. Corolla smooth on the outside. Berry purple, 2-celled, many seeded. Perhaps a true species of _Posoquêria._ Said to be allied to _R. fasciculata._

_Stiff Randia._ Shrubs 5 feet.

15 R. _stricta_ (Roxb. fl. ind. 2. p. 145.) branches stiff, decussate; leaves smooth, oblong, acute, on short pedioles; fascicles of flowers sessile, dense, globose, axillary, bracteate; tube of corolla short, hairy inside; berry globose. _See S._ Native of the East Indies, on the mountains north of Bengal. Macróneum strictum, Willd. rel. in Rom. et Schultes, syst. 5. p. 6. Smith, in Rees's cyclo. vol. 22. no. 5. Rodelênia stricta, Roth, nov. spec. p. 140. Flowers small, white. Berry size of a pea, 2-celled, smooth. Seeds imbricated in 2 rows in each cell, attached to the partition above its middle. Perhaps a distinct genus.

_Straight Randia._ Shrubs 5 to 10 feet.

16 R. _scandens_ (D. C. prod. 4. p. 387.) stem scendent prickly; prickles recurved; leaves oval, acuminate, coriaceous, glabrous; peduncles almost terminal, usually 3-flowered at the apex; tube of corolla short; limb of calyx tubular, rather truncate. _See S._ Native of Java, on the mountains of Parang and Salak. Tocoyêna scandens, Blum. bijdr. p. 980. Flowers white.

_Climbing Randia._ Shrubs cl.

17 G. _tetrandra_ (D. C. l. c.) thorns scattered, straight; leaves ovate, acuminate, narrowed at the base, rather coriaceous, and are as well as the branchlets downy; stipulas ovate, acuminate; flowers 6-8 in a fascicle at the tops of the branches, sessile, tetrandrous; bracteates connate; teeth of calyx 4, subulate; corolla clothed with silky hairs outside. _See S._ Native of New Granada, in temperate places near Guadua. Gardênia parviflora, H. B. et Kunth, nov. gen. amer. 3. p. 408. t. 293. Flowers small, white.

_Tetrandrous-flowered Randia._ Shrubs 5 feet.

18 R. _arma'ta_ (D. C. prod. 4. p. 387.) thorns 4 together at the tops of the branchlets, short, spreading; leaves ovate, acute at both ends; flowers usually 4 on the tops of the branchlets, on short pedicels; lobes of calyx linear-cuneiform; tube of corolla long, cylindrical, glabrous. _See S._ Native of Cartha-

_Armed Randia._ Chit. 1813. Shrub 5 to 10 ft.

19. _R. pedunculata_ (D. C. 1. c.) thorns decussate, spreading, acute; leaves ovate, or oval, glabrous above and pubescent beneath; stipulas pellucida; flowers disposed in cyosome fascicles; tube of calyx tubular, but the limb is acute and 5-cleft beyond the middle; segments of corolla almost orbicular. _S._ Native of Brazil, at Rio Padre. Gardénia ferox, Cham. et Schlecht. in Linnæa. 4. p. 198. Flowers white, sweet-scented.

_Fierce Randia._ Shrub 4 to 5 ft.

20. _R. capitata_ (D. C. 1. c.) thorns stiff, short, 4 at the top of each branchlet; leaves ovate, acute, hairy on both surfaces as well as on the branchlets; flowers sessile, 6-8 in a capitiate fascicle at the tops of the branchlets; limb of calyx tubular, with stiff, subulate teeth; tube of corolla 3 times longer than the segments, villous on the outside. _G._ Native of Mexico. Flowers white, sweet-scented.

_Capitate-flowered Randia._ Shrub 4 to 6 ft.

21. _R. tetracantha_ (D. C. 1. c.) branches opposite, horizontal, bearing each 4 thorns at the apex; leaves lanceolate, acuminate, villous; flowers sessile, 4 at the top of each branch; limb of calyx tubular, terminating in 5 subulate teeth; tube of corolla long, villous. _S._ Native of Mexico, about Acapulco and Regionioni. Mussæí'a tetracanthœ, Cav. inon. 5. p. 29. t. 455. Gardénia armata, Bartl. but not of Swartz. Corolla pale yellow. Berry size of a pigeon's egg; not crowned by the calyx.


22. _R. propinquœ;_ branches slightly downy, armed with 4 spines at the apex, placed crosswise; leaves ovate, cordate, undulate, acuminate, downy, petiolate; flowers in terminal fascicles. _S._ Native country unknown. Gardénia propinquœ, Lindl. bot. reg. t. 975. Thorns straight, infra-axillary. Leaves clustered at the ends of the branchlets, rather longer than the flowers. Corolla with a long cylindrical tube, and a 5-parted, spreading limb, with coriaceous, ovate, acute, flat segments, which are rather longer than the tube. Anters semi-exserted. Flowers large, white.

_Allied Randia._ Fl. July. Chit. 1823. Shrub 6 to 8 ft.


_Humboldt's Randia._ Shrub 5 to 10 ft.

24. _R. nitida_ (D. C. 1. c.) branches rather angular, furnished with 2 spines at the apex; leaves ovate-elliptic, acute, glabrous, shining; flowers terminal, twin, or by threes or fours, sessile; corollas glabrous. _S._ Native of New Granada, near Turbaco. Mussæí'na nitida, H. B. et Kunth, nov. gen. amer. 3. p. 410. Flowers white, sweet-scented. Fruit unknown.

_Shrubbing-leaved Randia._ Shrub 5 to 8 ft.

25. _R. triflœra_ (Hamilt. in D. Don, fl. nep. p. 158.) thorns opposite, subulate, adnate to the branches above the petioles; petioles and branchlets hairy; stipulas ovate, cuspidate; leaves ovate; peduncles axillary, 3-flowered; calyx campanulate; having the lobes ovate at the base, and linear-subulate at the apex. _G._ Native of Nipaul, at Hetaaura. Peduncles solitary, very short, usually 3, sometimes 4-flowered. Flowers usually 6-cleft and hexadromous. Anters semi-exserted.

_Three-flowered Randia._ Shrub.


_Horrid Randia._ Shrub 8 ft.

27. _R. Sine'sis_ (Rœm. et Schultes, l. c.) thorns short, opposite, rather recurved; leaves lanceolate (Lour.): superior ones ovate, nerved, glabrous; corymbs small, terminal, few-flowered; limb of calyx tubular, 5-lobed; tube of corolla long, glabrous; having the throat hardly inflated; anters linear, exserted, about equal in length to the lobes, which are spreading. _S._ Native of China, about Canton. Oxygethera Sinensis, Lour. cooh. p. 151. Randia Chinensis, Spreng. syst. 1. p. 768. R. longiflora, Lam. ill. 156. f. 3. Flowers white, salver-shaped, with a very long tube. Berry small, roundish, 2-celled, many-seeded.


28. _R. africana;_ thorns spinose; fruit woody, oblong, or roundish. _S._ Native of Sierra Leone. Flowers small, greenish yellow.

_African Randia._ Shrub 3 to 4 ft.

Sect. II. _Euclénia_ (from eu, eu, well, and kléw, kline, to bend; the segments of the corolla are well bent over each other before expansion). _D._ C. prod. 4. p. 388. Unarmed shrubs. Tube of corolla usually dilated and obconical at the throat. Perhaps a proper genus.

29. _R. maculata_ (D. C. prod. 4. p. 388.) shrubby, unarmed; branchlets rather downy; leaves oval, smooth, glandular in the axis of the nerves beneath, not pilose; flowers terminal, solitary from the axes on the ultimate leaves; tube of corolla very long, dilated at the apex. _S._ Native of Guinea. Rothmannia longiflora, Salisbar. t. 65. Limb of calyx rather villous, 5-toothed. Corolla 5 inches long, white, spotted with purple at the throat; segments ovate, spreading. Ovary 2-celled.


30. _R. specio'sa_ (D. C. prod. 4. p. 388.) shrubby, unarmed, glabrous; leaves elliptic-oblong, shining above; flowers from the tops of the branchlets, solitary in the axes of the ultimate leaves; tube of corolla very long, clothed with adpressed down on the outside: the segments acuminate. _S._ Native of Cayenne, where it was collected by Patris. Tube of corolla 9 inches long, hardly dilated at the apex. Genitals inclosed. Berry ovate. Tube of calyx cylindrical, semi-quinquepod; lobes subulate, erect.

_Elegant Randia._ Shrub.

31. _R. Mussæí'na_ (D. C. l. c.) shrubby, unarmed; leaves ovate or lanceolate, acute, downy on the veins underneath; flowers solitary, sessile, terminating the branchlets; tube of calyx semi-quinquepod: the lobes subulate; corolla villous on the outside, with a long tube, and acuminate segments. _S._ Native of Carthagina in woods (Jacoquin.); on the banks of the river Magdalena, near Honda (H. B. et Kunth, nov. gen. amer. 3. p. 408.); Dutch Guiana (Meyer, ceseq. p. 128.); Mexico, Demerara, French Guiana, and probably of Tobago. Mussæí'na formosæ,
Jacq. Amer. p. 70. t. 48. Gardénia marítima, Vahl, herb. Gardénia Mussae'nda, Thunb. disn. no. 5. Perhaps 2 or 3 allied species are here confused. The branches are glabrous in Jacquin's and De Candolle's specimens, but hairy in those of Kuntz and Thunberg. Corolla with an incurved or straight tube, villous and green on the outside (ex Jacq.), but the segments are white within. Berry coriaceous, ovate, crowned by the calyx, 2-celled. Stigmas 3, acute, revolute.

Musae'nda-like Randia. Clt. 1820. Shrub 5 to 6 feet

32. R. RUIZ'IZA (D.C. prod. 4. p. 388.) shrub, unarmed; leaves lanceolate, acute, on short petioles, glabrous above, rather hairy on the veins underneath; flowers terminal, solitary, sessile; calyx hairy, with subulate, erect segments; corolla hairy on the outside, with a very long tube, an oblong, villous throat, and spreading acute segments. \( \delta \). S. Native of Peru, on the Andes, in groves at Pozuzo. Gardénia longiflora, Ruiz et Pav. fl. per. 2. t. 219. but not of Ait. Branches very long, when young rather tetragonal. Berry cylindrical, large, yellowish, striated longitudinally by 10 brown nerves, 2-celled, containing a sweet edible pulp. Flowers white. Stigmas 2, thick, reflexed.

RUIZ'IZA's Randia. Shrub 10 to 12 feet.

33. R. MACRA'YTHA (D.C. l. c.) shrub, unarmed; leaves oval-oblong, acuminate, rather ciliated; flowers sessile, almost terminal, 5-parted; lobes of calyx subulate, spreading; corolla with a long tube, which is dilated at the apex, and revolute segments. \( \delta \). S. Native of Sierra Leone. Rândia longiflora, Salsib. par. t. 93. but not of Lam. Gardénia longiflora, Ait. hort. kew. ed. 2. vol. 1. p. 388. but not fl. per. Gardénia macrânya, Roem. et Schultes. syst. 5. p. 295. Flowers 6-7 inches long, cream-coloured, fragrant. Stigmas 2, thick, obtuse, flat inside and convex outside. Ovarium 2-celled. According to Salisbury, this with others he proposes to separate into a distinct genus to be called Eulitonia.


34. R. longísYLGA (D.C. l. c.) shrub, unarmed; leaves oval, villous above, but villously tomentose beneath, as well as the petioles; stipules ovate, glabrous, scarious, deciduous; flowers almost terminal, disposed in corystome fascicles; lobes of calyx parted to the base of the limb, erect, lanceolate, ciliated. \( \delta \). S. Native of Guinea, on the Gambia at Alfreda, where it was collected by Leprieur and Perrotten. Flowers black, in the dried state, but probably white when recent, \( \frac{1}{2} \) inch long. Style much exerted; stigma thick, bipartite. Fruit nearly globose, about an inch in diameter. Seeds compressed, separated by glutinous partitions.

Long-styled Randia. Shrub 5 to 6 feet.

35. R. MADAGASCARE'NIS (D.C. prod. 4. p. 389.) shrub, unarmed; leaves ovate, acute, on short petioles, glabrous, coriaceous; flowers axillary, sessile, bibracteate at the base; limb of calyx 5-lobed, obtuse; corolla vellutty outside from tomentum, with a terete tube, and 5 oblong obtuse lobes; genitals inclosed. \( \delta \). S. Native of Madagascar. Gardénia Madagascaiensis. Lam. dict. 2. p. 608. Flowers about 3 inches long. (ex Lam.) Tube of corolla 15 lines long. (ex D.C.)

Madagascar Randia. Shrub 5 to 18 feet.

36. R. genéPEHLO'RA (D.C. l. c.) shrub, unarmed; leaves oval-oblong, acuminated at both ends, coriaceous, glabrous, on short petioles; stipules lanceolate; peduncles axillary, very short, divided at top into many 1-flowered pedicles, which are disposed in a corystome; limb of calyx tubular, permanent, 5-toothed, a little shorter than the corolla. \( \delta \). S. Native of Sierra Leone, where it was collected by Smeathmann. Tube of corolla cylindrical, hardly longer than its lobes. Anthers long, linear. Stigmas 2, slender, acute. Berry dry, 2-celled, crowned by the tubular limb of the calyx; placentas scarcely exerted. Seeds horizontal.

Genipa-flowered Randia. Shrub 5 to 8 feet.

37. R. TALANGNINIA (D.C. l. c.) leaves oval-oblong, acute at the base, obtuse at the apex, coriaceous, glabrous; stipules short, undivided; flowers axillary, solitary, a little shorter than the leaves; calyx long and tubular beyond the ovarium, with 5 short, acute teeth at the apex; corolla with a long terete tube, and as is as well the segments clothed with velvety hairs on the outside. \( \delta \). S. Native of Madagascar, on the east coast, where it was collected by Chapelier, and called by him Talangninia. Berry dry, ovate, rather acuminated.

Talagnniana's Randia. Shrub.

† Doubtful species.

38. R. t. drupa'CEA (D.C. l. c.) berry ovate, drupaceous, containing a bony putamen. \( \delta \). S. Native of Java. Posoquária drupácæ, Gaertn. fil. carp. 3. p. 77. t. 195. f. 1. The rest unknown.

Drupaceous-fruited Randia. Tree or shrub.

39. R. t. POLYSPE'RA (Roxb. fl. ind. 2. p. 146.) shrub bushy and much branched; leaves oblong, acuminated, smooth; stipules subulate; spikes panicked, axillary. \( \delta \). S. Native of the East Indies, about Chittagong.

Many-seeded Randia. Shrub 5 to 6 feet.

Cult. For culture and propagation see Gardénia, p. 499. All the species being very showy, usually bearing large, white, fragrant flowers, are therefore worth cultivating in every collection of stove plants.


Lin. syst. Penétária, Monogynia. Calyx with a 5-parted limb, and erect, acute, permanent lobes. Corolla with a slender tube and a 5-parted limb; rather oblique, spreading, lanceolate, acute segments, and a villous throat. Stamens 5, almost sessile, inclosed, inserted in the middle of the tube. Style short, inclosed; stigma oblong, bipartite, with the lobes approximate. Fruit egg-shaped, fleshy, coriaceous, 2-celled, crowned by the large erect limb of the calyx; cells many-seeded. Seeds distinct, many-sided, of a golden yellow colour, and clothed with adpressed, silky down. Embryo linear, terete, in the center of a horny albumen.—A shrub. Leaves opposite, coriaceous, elliptic, acute, quite glabrous. Stipulas entire, caducous, interpetiolar. Flowers on short pedicels, crowded in the axils of the leaves. Habit almost of an apocynous plant.

1 C. MADAGASCARE'NIS (A. Rich. l. c.). \( \delta \). S. Native of Madagascar.

Madagascar Chapelieria. Shrub 2 to 4 feet.

Cult. For culture and propagation see Gardénia, p. 499.

XXXIX. HEIN'SIA (named in memory of the famous philologist Heinsius, the translator of Theophrastus's works). D. C. prod. 4. p. 390.

Lin. syst. Penétária, Monogynia. Calyx with an obovate limb and a 5-parted limb; and oblong, foliaceous, permanent lobes. Corolla salver-shaped, with a terete tube, which is longer than the calycine lobes, very hairy inside in the upper part, and 5, oval, acute undulata lobes. Anthers 5, linear, acute, sessile towards the top of the tube, inclosed and hidden among the hairs. Style filiform, shorter than the tube of the corolla; stigmas 2, linear. Fruit globose, crowned by the calyx, dry, hard, indehiscent, 2-celled; placenta 2, thick, adnate to the
dissempment. Seeds numerous, wingless, nesting on the super-

ficies of the placentas.—A much-branched, unarmed, glabrous
shrub or small tree, but there are small permanent spurs, which look like spines. Leaves opposite, oval-oblong or ovate,
acuminated, on short petioles. Stipulas twin on each side, small,
acute. Flowers 3-4 together at the tops of the branches, ped-
dicellate, and disposed in something like racemes, white, about
the size of those of Vinca rosea, and very similar to those of
Gardénia and Rândia.

1 H. JASMINIFLOURA (D. C. prod. 4. p. 390.), t. Native of
Sierra Leone, where it was collected by Smeathmann, Afzel-
lius, and G. Don. The plant we have seen at Sierra Leone has
numerous 1-flowered, terminal, and axillary pedicels; the tube
of the corolla clothed with yellow hairs; and the segments of
the corolla hispid. The shrub bears nothing like spurs or spines
that we recollect.

Jasmine-flowered Heinsia. Fl. Feb. Cti. 1824. Sh. 5 to 8 ft.
Cult. See Gardénia, p. 499. for culture and propagation.
A beautiful shrub, clothed with numerous white flowers.

XL. MENENSTORIA (Menestor was a physiologist cited by

Lin. syst. Pentándria, Monogyaina. Calyx with a globose
tube, a 5-parted limb; and linear, almost subulate, acute, distant
segments. Corolla with a long terete tube, 5 oval acute short
lobes, and an almost naked throat. Anthers 5, oblong, sessile
within the tube of the corolla. Style filiform; stigma bifid,
icnosed; lobes linear. Ovarium 2-celled; placentas many-
seeded, adnate to the dissemination. Fruit baccate, almost dry,
arculate at the apex, never crowned, from the lobes of the calyx
being deciduous. Seeds very small, wingless.—Unarmed shrubs,
natives of Nipaul. Leaves opposite. Stipulas solitary on each
side, at length deciduous. Corymb of flowers terminal. This
is rather a doubtful genus, differing from Mussæn’dna in the tube
of the calyx or ovary being globose, not turbinate, and in the
stipulas being solitary on each side, not twin; and from Tocoyéna
in the limb of the calyx being parted to the base.

1 M. TOCOVÉNE (D. C. prod. 4. p. 390.) leaves obovate,
obtuse, cucurate at the base, almost sessile, glabrous above, pale
beneath, and beset with adpressed villi along the nerves. t. G.
Native of Nipaul. Branches terete. Stipulas broad, short,
very blunt, membranous. Corymb terminal, trichotomous, on
short peduncles; pedicels puberulous. Corolla 15 lines long,
puberulous on the outside; segments ciliated, apiculate, clothed
with adpressed down on the outside, as well as the tube. Style
about equal in length to the tube of the corolla; stigmas 2,
linear, applied to each other in the dried state.

Tocoyéna-like Menestoria. Shrub 5 to 6 feet.

2 M. HAMÉLIE (D. C. l. c.) leaves oval, acuminate at
both ends, on long petioles, rather scabrous from scattered hairs
above, and along the nerves underneath. t. G. Native of
Nipaul. Branchlets compressed. Leaves along with the
petioles an inch and more in length. Stipulas ovate, broad, short,
acute. Peduncles numerous, spreading, disposed in loose
cymes, rising from the top of the stem and forks of the branches.
Corolla 6 lines long, scarcely puberulous. Style very short,
icnosed, hardly attaining the height of the anthers.

Hamellia-like Menestoria. Shrub 5 to 6 feet.

3 M. MUSSÉNĐÉ (D. C. l. c.) leaves ovate, acute, on short
petioles, pale beneath, and downy on both surfaces; petioles,
stipula and middle nerve of the leaves clothed with rusful
hairs. t. G. Native of Nipaul. Branches rather hispid
and rufous. Stipulas ovate. Corymb dichotomous, with some of
the flowers sessile and solitary in the forks, and others terminal.
Calyx hispid; lobes deciduous. Berry ovate-globose, smoothish.
Mussénda-like Menestoria. Shrub 5 to 6 feet.

4 M. RIGIDÁ (D. C. l. c.) leaves cuneate, retuse, and mu-
cronulate, glabrous; stipulas ovate, acute. t. G. Native of
Nipaul, at Suembu. Gardénia rigidá, Hamilt. ex D. Don, prod.
Sement of the calyx subulate. Limb of corolla 5-lobed; lobes
attenuated at the apex.

Stiff Menestoria. Shrub 5 to 4 feet.
Cult. For culture and propagation see Gardénia, p. 499.

XLI. HELÓSPORA (from helos, helios, the sun, and stépore,
spora, a seed; in reference to the disposition of the seeds).
p. 391.

Lin. syst. Tetrándria, Monogyaina. Calyx with a globose
tetragonal tube, and a somewhat campanulate 4-toothed, erect,
permanent limb. Corolla tubular, much longer than the calycine
limb, with a naked throat, and 4 oblong spreading lobes, which
are valvate in aestivation. Anthers 4, linear, incnosed. Style
4-furrowed, and 4-cleft at the apex; stigmas short, spreading.
Berry crowned by the calyx, tetragonal, not divided into cells
inside, but bearing the seeds disposed crosswise, in 4 double
series, immersed in pulp. Seeds linear, curved a little.—A
smoothish shrub. Leaves opposite, on short petioles, ovate-
lanceolate. Stipulas deciduous, bearing a row of cells inside.
Peduncles axillary, 1-flowered, shorter than the leaves. Brac-
teeles 2, under each ovary.—This genus is perhaps allied
to Guttárdia or Gardénia.

1 H. FLAVESCENS (Jack, l. c.). G. Native of Sumatra.
Leaves 3-5 inches long. Corolla yellowish, 4-8 lines long.
Yellowish-flowered Helospora. Tree small.
Cult. For culture and propagation see Gardénia, p. 499.

XLII. HIPPÓTIS (from ἵππος, hippos, a horse, and ὀφως,
ous otos, an ear; the form of the calyx has been compared to
hist. nat. par. 5. p. 255.

Lin. syst. Pentándria, Monogyaina. Calyx with an obovate
tube and a spath-formd limb, which is cleft on one side, and
drawn out into a mucronate auricle on the other. Corolla a little
longer than the calyx, funnel-shaped, with a somewhat incurved
tube, and a bluntly 5-lobed limb. Stamens 5, inserted in the middle
of the tube; anthers ovate, incnosed. Urecolus 5-crated, seated
on the ovary. Stigma of 2 adpressed lobes. Berry ovate,
crowned by the calyx, 2-celled. Seeds numerous, minute.—
An unarmed villous shrub. Leaves obovate-oblong, acuminated,
petiolate. Stipulas ovate, acute, caducous, villous on the
outside and solitary on each side. Peduncles axillary, hardly one
half shorter than the leaves, 5-flowered at the apex. Corolla
and berries villous, purplish red.

1 H. TRÍFLÓRA (Ruiz et Páv. l. c.). G. Native of Peru,
in forests about Cuchero, Macorà, and Marimarchalma. Pe-
duncles furnished with small, subulate, deciduous bracteas.
Calyx reddish purple. Corolla crimson, greenish at the base:
having the tube yellowish inside.

Three-flowered Hippotis. Shrub 10 to 12 feet.
Cult. For culture and propagation see Gardénia, p. 499.

XLIII. POMATIUM (from pomeum, an apple; shape of
p. 391.

Lin. syst. Pentándria, Monogyaina. Calyx with a sub-
globose tube, and a 5-toothed limb; teeth short, obtuse, deci-
duous, leaving only a membranous circle behind. Corolla small,
with a terete tube and a 5-parted limb. Anthers ovate, sessile
in the throat of the corolla, incnosed. Stigma bifid, with oblong
lobes. Berry almost dry, globose, somewhat didymous, crowned by an areola formed by the falling of the calyx, 2-celled, many-seeded. Placentas rather thick. Seeds angular. Embryo straight, in fleshy albumen, with a centripetal radicle, and flat ovalate-roundish cotyledons.—African shrub. Branches terete, hispid in the young state, and glabrous in the adult state. Leaves opposite, almost sessile, oblong-lanceolate, acuminate. Stipulas foliaceous, solitary on each side, oblong, acuminate, almost an inch long. Thyrsoid spike-formed, terminal.—Habit of Bertiera.

1 P. spicatum (Gaertn. l. c. D. C. diss. ined. with a figure). \S. Native of Sierra Leone, where it was collected by Smeathmann and G. Don; and in the woods of Casamance at l'ouo by Perrottet and Leprieur. Genaiba labiata, Smeathm. in herb. Lher. Flowers small, white. Spicate-flowered Pomatium. Shrub 6 to 8 feet.

2 P. de'gium; leaves broad-lanceolate, long-acuminate, rather cordate at the base, sessile; flowers panicled, axillary, and terminal. \S. Native of Sierra Leone, on the mountains, in woods. Flowers small, white. Doubtful Pomatium. Shrub 6 to 8 feet.


Lin. syst. Pentändria, Monogynia. Calyx with a sub-globose tube, and a very short permanent 5-toothed limb. Corolla funnel-shaped, with a terete tube, and a 5-parted spreading limb; segments oval, very acute. Anthers 5, sessile within the throat of the corolla. Stigma bifid; the lobes acute. Berry almost dry, crowned by the calyx, umbilicate, roundish, 2-celled, many-seeded. Seeds fixed to the central placentas, angular, muricate.—Shrubs. Leaves oval-oblong, acuminate, petiolate, villous. Stipulas solitary on both sides, combined at the base, acuminate. Thyrsoid terminal, racemously peduncled, bracteolate. Flowers small, white, and sometimes red.—Habit of Logfistum, but differs in the flowers being 5-parted.—This genus is probably divisible into several.

Sect. 1. Bertiera (see genus for derivation). D. C. prod. 4. p. 802.—Bertiera, Aubl. Fruit usually striated, crowned by the calycine teeth, which are erectly connivent and subulate. Inflorescence terminal.

1 B. guianensis (Aubl. guian. 1. p. 180. t. 69.) leaves ovate-oblong or elliptic, acute, with distant villous nerves; stipulas undivided on both sides, acuminate; flowers disposed in a racemose thyrsus; fruit sessile, striated, hairy, disposed along the branches of the panicle, crowned by the erect subulate calycine teeth. \S. Native of French Guiana, in woods; and of Cayenne. Vahl, symb. 3. p. 35. Lam. ill. t. 165. Spreng. syst. 1. p. 708. exclusive of some synonyms. Branches villous. Stipulas broad at the base, and rather connate. Leaves 3-4 inches long. Flowers small, white. Guiana Bertiera. Shrub 6 to 7 feet.

2 B. mucronata (Gaertn. fil. carp. 3. p. 74. t. 192. f. 7.) leaves and flowers unknown; fruit striated, crowned by the erectly connivent calycine teeth, pedicellate, disposed along the branches of the panicle. \S. Native country unknown. Perhaps the same as B. Guianensis.

Mucronate Bertiera. Shrub.

3 B. palustris (A. Rich. in mem. soc. hist. nat. par. 5. p. 245.) leaves elliptic-oblong, acute, hairy, with approximate nerves; stipulas bifid on both sides; flowers almost cymose; fruit not striated, hairy, crowned by the subulate teeth of the calyx. \S. Native of Guiana, in marshy parts of woods. A small sub-herbaceous erect shrub, clothed with rusty down. Leaves soft, usually tapering gradually to the base. Marsh Bertiera. Shrub 1 to 2 feet.

Sect. II. Zaluza (altered from Zaluzianski, an obscure Polish botanist). D. C. prod. 4. p. 392.—Zaluza, Comm. miss. Fruit smooth, crowned by the calycine teeth, which are spreading or erect, but not connivent. Embryo transverse, ovate-cylindrical, in the albumen.—Inflorescence terminal, racemose thyrsoid.

4 B. borbonica (A. Rich. l. c.) smoothish; leaves elliptic-lanceolate, acuminate, petiolate; stipulas undivided, drawn out into a setaceous point each, length of petioles; racemes thyrsoid, terminal; fruit glabrous, not striated, crowned by the teeth of the calyx, which are permanent, acute, and straight, but not connivent. \S. Native of the Island of Bourbon. Peduncles angular. Bracteas subulate. Bourbon Bertiera. Shrub 3 to 4 feet.

5 B. Rubra (A. Rich. l. c.) leaves elliptic, acute, on very short petioles, clothed with rufous silky down; stipulas broad, connate, acute, silky inside, and smoothish on the outside; racemes elongated; pedicels silky; fruit glabrous and villous, crowned by the erect calycine teeth. \S. Native of the Island of Bourbon. Rufous Bertiera. Shrub.

6 B. Zaluza (Gaertn. fil. carp. 3. p. 74. t. 192.) smoothish; leaves rather coriaceous, lanceolate-elliptic, acuminate, on short petioles, ciliated on the edges; stipulas undivided, drawn out into an acumen, length of petioles; racemes thyrsoid, terminal, and are as well as the flowers downy; branches of racemes dichotomous, with a sessile flower in each fork; fruit crowned by the limb of the calyx, which is hardly toothed; teeth spreading. \S. Native of the Mauritius. Musaenda racemosa, Sieb. fl. maur. 3. no. 303. Stipulas short, broad, conic, Racemes apparently drooping. Bracteae small, acute. Flowers sessile. Anthers mucronate. Calyx truncate. Corolla widening from the base, with acute segments. Zaluza Bertiera. Shrub 3 to 4 feet.

Sect. III. Mycet (apparently after some botanist of the name of Mycet). Reinwardt. miss. D. C. prod. 4. p. 892.—Bertiera, Blum. bijdr. p. 987. Tube of calyx ovate or turbinate. Berry crustaceous inside, crowned by the calycine teeth, which are spreading. Racemules axillary, somewhat corymbose.

7 B. Java (Blum. bijdr. p. 987.) stem simple; leaves petiolate, cuneate-oblong, acuminate, with a few scattered hairs above, and more so on the nerves beneath; coryms divaricate, axillary, and terminal, trichotomous, solitary, drooping; tube of corolla short. \S. Native of Java, in shady parts of woods.

Java Bertiera. Shrub 2 to 3 feet.

8 B. fasciculata (Blum. bijdr. p. 987.) stem a little branched; leaves cuneate-oblong, acuminate, glabrous above, but somewhat stigose on the veins beneath; coryms short, axillary, trichotomous, erect; pedicels in fascicles; tube of corolla elongated. \S. Native of Java, on Mount Salak, in humid places. Coryms often lateral, hardly longer than the pedicels. Throat of corolla velvety. Var. \beta. macrophylla (Blum. l. c.) leaves obovate, acute. \S. Native of Java, on Mount Bonok, in the province of Bantam. Fascicled-pedicelled Bertiera. Shrub. 3 T.
XLV. POUCEHTIA. Shrub rambling.

Cult. See Musce'nda, p. 492. for culture and propagation.


LIN. SYST. Pentàndria, Monogygni. Calyx with a turbinate tube, and a 5-parted limb; lobes erect, acute, permanent. Corolla funnel shaped, with a terete tube, which is longer than the calyx, a gradually widened throat, and a 5-parted limb; segments ovate-oblong, recurved. Filaments very short. Anthers oblong, dehiscing at the side in the upper part of the cells. Style clavate, 10-angled or 2-lobed. Berry globose, crowned by the calyx, 2-celled. Placentas spongy, central. Seeds wrinkled at the hilum. Albumen cheesy. Embryo centripetal. - Asiatic glabrous shrubs. Leaves oblong-lanceolate. Stipulas intrafoliaceous, broad, ending each in a short acumen. Corymb or panicles trichotomous, terminal, axillary, or opposite the leaves. Flowers white, fragrant.

§ 1. Stigma undetermined.

1 C. corymbosa (D. C. prod. 4. p. 394.) shrubby; leaves lanceolate-oblong, with revolute margins, shining; corollas terminal; lobes of calyx 5, about equal in length to the tube of the corolla; mature capsule 4-seeded. S. Native of the coast of Coromandel, frequent; Malabar; Pulo Penang, on hills; Ceylon, China, &c. Cùpì, Rheed. mal. 2. p. 37. t. 23. - Rendelèttia Asiatica, Lin. spec. 244. Weberà corymbosa, Wildl. spec. 1. p. 1224. Ker. bot. reg. t. 126. Cãntiñà corymbosum, Pers. ench. 1. p. 200. Roxb. fl. ind. 2. p. 533. Stylocorynia Weberà, A. Rich. mem. soc. hist. nat. par. 5. p. 248. Leaves 6-7 inches long and 2½ broad; having hairy glands in the axis of the large veins. Corollas terminal. Flowers small, very numerous, at first white, but finally yellowish, faintly fragrant. Berry size of a large pea, black when ripe. Seeds 4-8 in each cell. The extremities of the young shoots are often found covered with a white resinous matter, like that on the germs of most species of Gaertnèra.

Corymbose-flowered Cupia. Cct. 1759. Shr. 5 to 6 ft.

2 C. macrophylla (D. C. prod. 4. p. 394.) leaves broad-lanceolate, acuminate: panicule terminal, villous; tube of corolla long, slender, villous; berries 5-12-seeded. S. Native of the Prince of Wales Island. Weberà macrophylla, Wall. in Roxb. fl. ind. 2. p. 534. Young shoots villous. Leaves 6-8 inches long, and from 4-5 broad. Panicle large. Flowers large, white. Anthers long as the segments of the corolla.

Long-leaved Cupia. Shrub.

3 C. densiflora (D. C. prod. 1. c.) sub-arborescent; leaves oblong-lanceolate, acute at the base; panicule rounded, lateral, almost sessile, occupying the place of a leaf or branch, trichotomous, dense-flowered; throat of corolla bearded; ovary many-seeded. S. Native of Pulo Penang, on hills. Weberà densiflora, Wall. in Roxb. fl. ind. 2. p. 636. Leaves coriaceous, acuminate, shining above, 5-6 inches long. Flowers numerous, by threes, white. Bracteas lanceolate, ciliate. Anthers very long.

Dense-flowered Cupia. Shrub large.

4 C. mollissima (Hook. et Arn. in Bech. bot. p. 192.) leaves lanceolate, clothed with soft dense hairs on both surfaces; lobes of calyx short, very blunt; fruit pubescent, many-seeded. S. Native of China. The leaves, which clothe every part of the plant are of a rusty colour. Stigma unknown.

Very-soft Cupia. Shrub.

5 C. oppositifolia (D. C. l. c.) shrubby; leaves lanceolate-oblong, firm, and glossy; panicles opposite the leaves, composed of a few stiff, jointed, sub-recurved spikes; corolla with a short tube and a woolly throat; stigma clavate. S. Native of Chittagong. Weberà oppositifolia, Roxb. fl. ind. 2. p. 553. Flowers white.

Opposite-leaved Cupia. Shrub.

XIV. POUCEHTIA. XLVI. CUPIA.
6 C. ODORA'TA (D. C. l. c.) shrubby; leaves lanceolate, acuminate, polished; corymb terminal, and are as well as the bracteas villous; calyx 5-toothed; teeth one half shorter than the tube of the corolla; cells of berries 3-4-seeded. \(\gamma\). S. Native of Silhet, where it is called Patugrooa. Webbera odorata, Roxb. fl. ind. 2. p. 535. Leaves 4-6 inches long and 1-2 broad. Stipulas triangular. Flowers numerous, middle-sized, white, very fragrant. Anthers about as long as the segments of the corolla. 

**Sweet-scented-flowered Cupia.** Shrub large.

§ 2. **Stigma 2-lobed.**

7 C. AURICULATA (D. C. l. c.) arboreal, smooth; leaves ovate-oblong, emarginate, and unequally 2-lobed at the base, acuminate, almost sessile, the axils of the veins glanular beneath; panicles terminal and lateral, bracteate, on flattened peduncles; throat of corolla swollen, elevated, and bearded; ovary many-seeded. \(\gamma\). S. Native of Pulo-Penang. Webbera auriculata, Wall. in Roxb. fl. ind. 2. p. 537. Leaves contracted towards the cordate base, 7 inches long. Flowers white, fragrant. 

**Auricled-leaved Cupia.** Shrub large.

8 C. TRUNCATA (D. C. l. c.) shrub twining; leaves ovate, acute; panicles terminal, on flattened peduncles: corolla with a naked throat; ovary 4-ovulate. \(\gamma\). C. S. Native of Pulo-Penang, on hills. Webbera truncata, Wall. in Roxb. fl. ind. 2. p. 538. Leaves 3-4 inches long, acute at the base, dark and shining above, coriaceous. Bracteas lanceolate, deciduous. Flowers white, fragrant, on short pedicles by threes, or in fascicles. Anthers very long. 

**Truncate Cupia.** Shrub tw. 

9 C. SCANDENS (D. C. l. c.) shrubby, scandent, glossy; leaves oblong, acuminate; cymes axillary; stigma of 2 oval plates. \(\gamma\). C. S. Native of Silhet, where it is called Gujer-kota by the natives. Webbera scandens, Roxb. fl. ind. 2. p. 534. Leaves 5 inches long and 2-3 inches broad. Divisions of cymes generally alternate. Flowers large, funnel-shaped, fragrant when they first open, white, but like Gardenias become yellow by the second day. Anthers linear, sessile. 

**Climbing Cupia.** Shrub cl.

† **Species not sufficiently known.**

10 C. CYMOSA (D. C. l. c.) arboreous; branches pubescent; leaves ovate, acute, shining; cymes axillary, pedunculate, many-flowered; stigma capitate, 2-lobed. \(\gamma\). S. Native of the East Indies. Webbera cymosa, Wildl. spec. 1. p. 1234. Rondeletia cymosa, Poiret. dict. 6. p. 236. Cântium cymosum, Pers. ench. 1. p. 200. Flowers white, fragrant. Berries about the size of juniper berries, but their internal structure has not been noticed. 

**Cymose-flowered Cupia.** Clt. 1811. Tree.

11 C. THYRSOIDEA (D. C. l. c.) branches woody, clothed with brown pubescence; leaves oblong-obovate, acuminate at both ends; thryse dense, terminal; corolla glabrous outside and pilose inside; stigma bifid. \(\gamma\). S. Native of the East Indies. Webbera thyrsoida, Roth. nov. spec. p. 149. Cântium thyrsoides, Rœem. et Schultes, syst. 6. p. 207. Flowers white. Fruit unknown. 

**Thryse-flowered Cupia.** Shrub. 

Cult. For culture and propagation see Rondeletia, p. 517. All the species are very elegant when in blossom, and the flowers are very fragrant.

**XLVII. TARE'NNA (Tarenna is the Ceylonese name of the shrub), Gaertn. fruct. 1. p. 139. 28. f. 3. D. C. prod. 4. p. 395.**

**Lin. syst. Pentandria, Monogynia.** Calyx with a globose tube, and a 5-parted limb; lobes linear-oblong, reflexed, permanent. Corolla, stamens, and stigma unknown. Berry globose, with 8 stripes, crowned by the limb of the calyx, 2-celled; pulp thin. Placentas central, spongy. Seeds 4-6 in each cell, horizontal, semi-lunate, cuneated, compressed, wrinkled. Alumen fleshy. Embryo dorsal, with the radicle directed to the periphery, and foliaceous cotyledons. This genus appears to be allied to Cupia, but the flowers and all other particulars besides those mentioned are unknown.

1 T. zeylanica (Gaertn. l. c.). \(\gamma\). S. Native of Ceylon. Ceylon Tarenna. Tree or shrub. 

Cult. For culture and propagation, see Rondeletia, p. 517.


**Lin. syst. Tetra-Pentandria, Monogynia.** Calyx with a roundish tube, and a short, 4-5-toothed limb. Corolla funnelformed, with an equal 4-5-cleft limb. Stamens 4-5, within the tube. Berry almost globose, naked at the apex, 2-celled, many-seeded. Seeds numerous, rather angular, crustaceous—Trees and shrubs. Leaves opposite, or 3 in a whorl, on short petioles, often coriaceous. Stipulas intrapetiolar, undivided, solitary, on both sides. Peduncles axillary, shorter than the leaves, bearing each a few flowered corymb or cyme; rarely terminal, except in the more doubtful species.—Petesia of Gaertn. is Eumachia, D. C. a genus among the tribe Cooffeeceae. The character given by P. Browne agrees with this genus, but the species given are probably true species of Rondeletia. Petesia of Jacq. and Swartz is very doubtful, and will probably constitute a new genus, according to Bartling.

* Flowers axillary.

1 P. gra'ndis (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 395.) leaves opposite, rhomboid-ovate, acuminate at both ends, villous on both surfaces while young, but in the adult state they are beset with a little scattered down above, and rather villous on the nerve and veins beneath, reticulate and radiately striated between the veins; corymb few-flowered. \(\gamma\). S. Native of Mexico. Limb of calyx 5-cleft, deciduous. Seeds scrobiculate. 

**Great Petesia.** Tree.

2 P. nitrata (Bartl. in herb. Hænke, ex D. C. l. c.) leaves opposite, oblong, attenuated at both ends, glabrous, reticulately veined beneath, and radiately striated between the veins; peduncles axillary, 3-5-flowered, but only bearing one fruit each. \(\gamma\). S. Native of the Philippine Islands and Marian Island. Calyx sinuate 4-toothed. Corolla tomentose, small. Berry globose, hardly the size of a pea. Seed sub-cylindrical. The leaves are striated, almost like those of the first species.

**Shining-leaved Petesia.** Tree.

3 P. terrinolia (Bartl. in herb. Hænke, ex D. C. l. c.) leaves 3 in a whorl, obovate-oblong and oblong, acute at both ends; peduncles axillary, bifid, 5-7-flowered, but bearing only 1 fruit each. \(\gamma\). S. Native of the Island of Luzon. 

**Three-leaved Petesia.** Tree.

4 P. carnosa (Hook et Arn. in Beech, voy. pt. bot. p. 64.) leaves opposite, oblong-obovate, obtuse, attenuated at the base, glabrous, fleshy; peduncles axillary, 1-flowered. \(\gamma\). S. Native of the Society Islands. Corolla funnelflaped, 4-lobed: having the anthers sessile in the throat. It differs from most Rutaceous plants in the fleshy leaves.

**Fleshy-leaved Petesia.** Tree or shrub. 

3 T 2
**Flowers terminal.**

5 P. ? Hí'spida (Bartl. in herb. Hænke. ex D. C. l. c.) leaves opposite, membranous, obovate-oblong, acuminate at both ends, leaving the middle nerve on both surfaces, and the veins beneath hiuspid from bristles; corymbs terminal, short. h. S. Native of the island of Luzon.

Hispid-leaved Petesia. Tree or shrub.

6 P. ? Toméntosa (Jacq. amer. p. 18.) leaves oblong, attenuated at both ends, very soft on both surfaces from hardly conspicuous tomentum; corymbs lateral and terminal. h. S. Native of New Spain, in woods about Cartagena. Flowers tetramerous. Fruit unknown. Perhaps a species of Rondelétia.

Toméntose Petesia. Tree.

7 P. ? Spicata (Swartz. fl. ind. occ. 3. p. 1945.) leaves elliptic, attenuated, glabrous, pubescent on the nerves beneath; petioles hairy; racemes terminal, spicate. h. S. Native of the southern part of Jamaica, among bushes. Flowers small, white, 4-parted. Berry crowned by the very minute calyx.

Spicate-flowered Petesia. Shrub 5 to 6 feet.

8 P. ? Siniplicissima (Lour. coeh. p. 77.) stem herbaceous, quite simple, tetragonal; leaves lanceolate-linear, glabrous; racemes erect, almost terminal; calyx 5-toothed. 2. G. Native of Cochinchina. The fruit is said to be baccate, 2-celled, and many seeded. Flowers white.

Quite-simple-stemmed Petesia. Pl. 1 foot.

9 P. ? Terminais (Hook. et Arn. in Beech. voy. pt. bot. p. 85.) leaves oblong, obtuse at the base, acutish at the apex, membranous, glabrous; panicles terminal, racemose, one-half shorter than the leaves; corolla salver-shaped, having the lobes shorter than the tube. h. S. Native of the Sandwich Islands. Stem dichotomously branched. Leaves 4 inches long, and 1½ inch broad. Corolla funnel-shaped, 4-lobed, inclosing the anthers. Much the habit of Stylocoryna racemosa, Cav.

Terminal-flowered Petesia. Tree or shrub.

10 P. ? Coriacea (Hook. et Arn. in Beech. voy. pt. bot. p. 85.) leaves oblong, acute at the base, and obtuse at the apex, coriaceous, glabrous; corymbs terminal, dense, few-flowered, much shorter than the leaves. h. S. Native of the Sandwich Islands.

Coriaceous-leaved Petesia. Tree or shrub.

**Cult.** For culture and propagation see Rondelétia, p. 517.


JAN. SYST. Tetraphyllum, Monogynía. Calyx with an ovate tube, and a 4-parted permanent limb (f. 94. a.); lobes narrow. Corolla funnel-shaped (f. 94. b.), with a 4-parted limb (f. 94. b.), and a glabrous throat. Stamens 4, inserted in the tube of the corolla, inclosed (f. 94. b.); anthers oblong-heart-shaped. Stigma bifid. Berry ovate, crowned (f. 94. d. e.), 2-celled (f. 94. c.); cells many-seeded. Seeds lenticularly angular, wingless.—Creeping herbs. Leaves opposite, on short petioles. Stipulae subulate, solitary on both sides. Peduncles axillary, solitary, and in the alternate axils, bearing each a few-flowered head, surrounded by a short involucrem. Corollas and berries blue or purple.

1 C. repens (Swartz. fl. ind. occ. 1. p. 245.) plant prostrate, creeping; leaves ovate, pubescent on both surfaces; peduncels very short while bearing the flowers, but afterwards become more elongated; heads few-flowered; bracteas subulate. h. S. Native of Jamaica and St. Domingo, in temperate parts on the mountains. Brown, jam. 144. t. 6. f. 2. C. herbaceum, Lam. dict. 2. p. 56. ill. t. 64. Flowers almost sessile, collected in the axis of the leaves, blue. Fruit seated on peduncles, 4-5 lines long, blue, inflated. (f. 94.)


Umellaté-flowered Coccocypselum. Pl. creeping.

3 C. ovatum (Cham. et Schlecht. in Linnaea. 4. p. 141.) plant ascending, rooting at the base; leaves ovate, very blunt at the base, and acute at the apex, beset with minute adpressed pubescence; peduncels alternate, shorter than the leaves, clothed with strigose hairs; heads 8-10-flowered. h. S. Native of Brazil. Allied to C. umellatum and C. lancéolatéum.

Ovate-leaved Coccocypselum. Pl. cr.

4 C. lancéolatéum (Pers. ench. 1. p. 132.) plant densely clothed with down; leaves lanceolate, acute; heads many-flowered, pedunculate; bracteas lanceolate; berries ovate-oblong. h. S. Native of Peru, in shady groves at Cuchero and Chinchao, ex Ruiz et Pav.; and on the mountains about the Oriñoco, ex Hænke; and at Caraceas, ex Vargas. Condália lancéolata, Ruiz et Pav. fl. per. 1. p. 54. Corolla of a pale violaceous colour. Berries blue.

Lancéolate-leaved Coccocypselum. Pl. cr.

5 C. hissíhum (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 396.) plant ascending, very hairy in every part; leaves broad; ovate, acute; heads axillary when in flower, almost sessile; peduncles a little elongated when in fruit, and recurved. 2. S. Native country unknown.

Hairy Coccocypselum. Pl. ascending.

6 C. canescens (Willd. herb. ex Cham. et Schlecht. in Linnaea. 4. p. 139.) plant prostrate, creeping; leaves ovate, clothed with silky yellow down on both surfaces; heads axillary, and almost terminal, on long peduncles; bracteas of heads 5-6, oblong, acute. h. S. Native of South America, in temperate shady places, near Buenos-Viata, Caraceas, Popyan, and of tropical and extratropical Brazil. C. repens, H. B. et Kuntb. nov. gen. amer. 3. p. 405. exclusive of the synonyms. Schwefélidía áspera, Spreng. neu. entd. 1. p. 280. not of Willd. Bellárdia mollis, Willd. herb. ex Cham. et Schlecht. in Linnaea. vol. 4. Corolla blue or red. Berries blue.

Canèscens Coccocypselum. Pl. cr.

7 C. aëreum (Cham. et Schlecht. in Linnaea. 4. p. 139.) leaves ovate, acute, with parallel veins, clothed with golden silky down; heads axillary, sessile, few-flowered; bracteas 4-5, narrow, acute. h. S. Native of tropical Brazil. Schwefélidía aèrea, Spreng. neu. entd. 1. p. 280. syst. 1. p. 764.
Allied to *C. canescens*, but differs in the above characters, and in the flowers being larger and slenderer, and more hairy; and in the leaves being more acute and longer.

**Goldil Cococcyspellum.** Pl. cr.

8 C. *nummulariifolium* (Cham. et Schlecht. in Linnaea. 4. p. 397.) plant very hairy, prostrate, creeping; leaves ovate-roundish, very blunt at the base, obtuse at the apex, and somewhat mucronulate; heads on short peduncles; bracteas linear. z. S. Native of equinozial Brazil. Corolla violaceous, beset with spreading pili at the tops of the lobes. Allied to *C. campanuliflorum* and *C. cordifolium*.

**Money-wort-leaved Cococcyspellum.** Pl. cr.

9 C. *cordifolium* (Nees et Mart. in nov. act. bonn. 12. p. 14.) plant creeping; leaves cordate, obtuse, hairy; peduncles at length equal in length to the petioles; heads of flowers almost globose; calyces and petals very villous. z. S. Native of Brazil, on the road to Fellisbert and of St. Catharine. Corolla white, palescent. Berries globose, blue. Habit of *Geïopha*.

**Heart-leaved Cococcyspellum.** Pl. cr.

10 C. *erythrocycliifolium* (Cham. et Schlecht. in Linnaea. 4. p. 144.) branches or stems simple, hairy; leaves ovate, acute, at the base, hairy on both surfaces, often purplish beneath; heads on short peduncles, beset with purplish hairs. z. S. Native of equinozial Brazil. Flowers and fruit unknown.

**Red-headed Cococcyspellum.** Pl. cr.

11 C. *pedunculare* (Cham. et Schlecht. in Linnaea. 4. p. 145.) plant ascending, clothed with adpressed stigrose hairs; leaves lanceolate-oblong, with revolute edges; peduncles alternate, longer than the leaves, usually reflexed after flowering; heads 10-12-flowered. z. S. Native of equinozial Brazil.

**Pedunculare Cococcyspellum.** Pl. cr.


**Tontanea Cococcyspellum.** Pl. cr.

13 C. *glabrum* (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 397.) plant creeping, quite glabrous; leaves ovate, subcordate, acutish; heads few-flowered, axillary, when bearing the fruit on longer peduncles, which are deflexed. z. S. Native of Panama. Very nearly allied to C. *Tontanea*, and probably only a glabrous variety of that species, but the flowers are unknown.

**Glabrous Cococcyspellum.** Pl. cr.

14 C. *cilium* (Cham. et Schlecht, in Linnaea. 6. p. 414.) leaves roundish-ovate, ciliated, as well as the petioles, having the nerves furnished with long hairs on the upper surface; heads of flowers equal to about half the length of the leaves. z. S. Native of Mexico, between Huimalamo and Cuapa. Very like C. *umbellata*. Leaves an inch and a half long and 14 lines broad. Ciliated Cococcyspellum. Pl. creeping.

† The generic character of the two following species is doubtful, and according to Kunth, syn. should probably be excluded from the present genus. —Erect suffruticose glabrous plants.


**Obovate-leaved Cococcyspellum.** Shrub 3 feet. 16 C. *sessile* (Pers. l. c.) stem erect, suffruticose; leaves oblong, acute; flowers sessile, crowded, axillary. z. S. Native of Peru, on the mountains about Chincho. Condalia sessilis, Ruiz et Pav. fl. per. 1. p. 54. Corolla purplish. Berries ovate, purplish.

**Sessile-flowered Cococcyspellum.** Shrub 2 to 3 feet. Cult. A mixture of peat and sand is the best soil for the species; and they will be easily increased by separating the creeping stems from the main plant.


**Lin. syst. Tetradnirida, Monogynia.** Calyx with an obovate tube, and a 4-cleft limby; lobes subulate at the apex. Corolla small, with a short tube, and a 4-lobed spreading limb. Stamens 4, inserted in the tube of the corolla, inclosed, or a little exserted. Stigma bident. Berry crowned by the limb of the calyx, 2-celled, having the dissepiment incomplete and semilunar, and elliptic. Seeds numerous, somewhat compressed. Albens cartilaginous. Embryo almost doral, with a centripetal radicle, and flat roundish cotyledons. —Small glabrous branched trees, having much the habit of box. Leaves obovate, stitif. Stipulas short, acute, solitary on each side. Pedicels axillary, very short, bracteolate, 1-flowered.

1 F. *buxifolia* (Lam. ill. no. 1478, but not of Gaertn.) lobes of corolla obtuse; berry obovate, crowned by the subulate lobes of the calyx. z. S. Native of the Mauritius, where it is called *bois de buis*. F. obovata, Gaertn. fil. carp. 3. p. 62. t. 191. but not of Lam. Cococcyspellum buxifolium, Spreng. syst. 1. p. 416. Leaves 5-6 lines long, and 3-4 broad.

**Box-leaved Fernelia.** Clt. 1816. Shrub.

2 F. *obovata* (Lam. ill. t. 67. f. 1.) lobes of corolla acuminate; berries nearly globose, crowned by the lobes of the calyx, which are bluntish and velvety inside. z. S. Native of the Mauritius, where it is called *bois Malabar* and *bois de rogne*. F. buxifolia, Gaertn. fil. carp. 3. p. 63. t. 197. f. 6. Cococcyspellum uniflorum, Willd. spec. 1. p. 618. Siebl. fl. maurl. exsic. 2. no. 100. Leaves 8-10 lines long, and 6-7 broad.

**Box-leaved Fernelia.** Clt. 1816. Shrub.

3 F. *pedunculata* (Gaertn. fil. carp. 3. p. 191. f. 3.) lobes of corolla unknown; berry obovate, tapering a long way into the stipe at the base, crowned by the lobes of the calyx, which are bluntish. z. S. Native of the Mauritius. Shrub and flowers unknown.

**Pedunculate-fruited Fernelia.** Shrub. Cult. For culture and propagation, see Rondeléïa, p. 517.

L. I. PETUNGA (Peetunga is the name of *P. Rozbarghii* in the Bengalee language). D. C. prod. 4. p. 398.—Rândia species, Roxb.—Higginsia, Blum. bijdr. p. 988. but not of Pers.

**Lin. syst. Tetradnirida, Monogynia.** Calyx with an obovate tube, and a permanent 4-toothed limb. Corolla funnel-shaped, with a short obconical tube, a 4-parted limb, and a very villous throat. Stamens 4; anthers a little exserted. Style filiform, villous: stigma bidentate, a little exserted. Berry globose, depressed and umbilicate at the apex, 2-celled. Seeds 2-4 in each cell, fixed to the upper part of the dissepiment, ex Roxb., scale-formed, and imbricated downwards, ex Blum. Albumen cartilaginous. Embryo inverted, with linear cotyledons. —Unarmed erect glabrous shrubs, with decussate horizontal branches. Leaves opposite, oblong, attenuated at both ends. Stipulas long-acuminated, deciduous. Stipules axillary, solitary or twin,
simple, many flowered, 3 times shorter than the leaves. Bracteae short, 1-flowered. Flowers disposed in 2 or 4 rows, sessile along the rachis of the spike, small, greenish white. This genus differs from *Rândia* in the flowers being tetramerous, and very much bearded in the throat, and in the spicate inflorescence and whole habit; and from *Higginsia* in the throat of the corolla being bearded, in the genitals being a little exserted, and in the globose depressed fruit, &c.

1. P. **Roxb**.'s *Petunga* (D. C. prod. 4. p. 399.) leaves elliptic-oblong, glabrous, acuminated at both ends; spikes axillary; bracteae and calyces glabrous. S. Native of the East Indies, about Luksmeeapoora, where it is called *Petunga* by the natives. Rândia racemosa, Roxb. fl. ind. 2. p. 144. Branches almost horizontal. Leaves drooping, 3-4 inches long, and about 1 broad. Stipulas large, caducous. Spikes about one-half or one-third shorter than the leaves. Flowers small, pale, greenish white. Berries round, smooth, shining, straw coloured, size of a pea.

*Petunga's* Petunga. Clt. 1820. Shrub 3 to 4 feet.

2. P. **longifolía** (D. C. l. c.) leaves elliptic-oblong, acuminated at both ends; branches terete; bracteae and calyces downy. S. Native of Java. Higginsia longifolia, Blum. bijdr. p. 988. Leaves 6-7 inches long, and 2 broad. Spikes about 2 inches long. Flowers small, greenish white.

**Long-leaved Petunga.** Shrub 3 to 4 feet.

3. P. **microcarpa** (D. C. l. c.) leaves oblong-lanceolate, acuminated, finely veined; spikes short, quadrifidi, imbricated; tube of corolla very short. S. Native of Java, where it is called *Ki-Ajiet* by the natives. Higginsia microcarpa, Blum. bijdr. p. 988. Leaves 3 inches long, and 9 lines broad. Spikes 4 or 5 lines long. Flowers small, greenish white.

**Small-fruited Petunga.** Shrub 3 to 4 feet.

4. P. **glomerulata** (D. C. prod. 4. p. 399.) leaves oblong-lanceolate, veiny; spikes densely glomerulat. S. Native of Java, on mount Salak, and in woods on the island of Nusa-Kambanga.

**Gloomerulated-spiked Petunga.** Shrub.

_Cult._ For culture and propagation see *Catesbeya*, p. 511.


_LIN. SIST._ Tetradria, Monogynia. Calyx with a short ob- ovate tube, and a permanent limb, which is 4-toothed to the base. Corolla funnel-shaped, and somewhat campanulate, with a short tube, a 4-parted spreading limb, and a naked throat. Stamens inserted into the middle of the tube; filaments short; anthers ovate, inclosed. *Stigmas* 2, exserted. Berry oblong, somewhat tetragonal, bisulate, 2-celled, crowned by the calyx. Placentas adnate to the dissemination. Seeds many in each cell, small, wingless.—_Shrubs about 3 or 4 feet high, with bluntly tetragonal branches. Leaves opposite or in whorls, obovate or oblong, acute. Stipulas solitary on both sides, small, acute, deciduous. Peduncles axillary, racemose, bearing short unilaterial pedicels. _Corollas reddish._

1. **H. verticillata** (Pers. ench. 1. p. 133.) leaves 3 in a whorl, lanceolate, downy beneath; peduncles solitary, dependent, bearing about 4 flowers. S. Native of Peru, at Muna, where it is called *Carpales*. O-Higginsia verticillata, Ruiz et Pav. fl. per. 1. p. 55. t. 85. f. a. *Evémosia* verticillata, Spreng. **Corolla scarlet. Berries purplish white.**

**Whorled-leaved Higginsia.** Shrub 3 to 4 feet.

2. **H. angustifolia** (Bartl. in herb. Henke, ex D. C. prod. 4. p. 399.) leaves opposite, narrow-oblong-lanceolate, glabrous, tapering much at both ends; fruit axillary, usually twin, oblong, opposite, on short pedicels. S. Native of Peru, on mountains about the Guanooco. Flowers red.

**Narrow-leaved Higginsia.** Shrub 3 to 4 feet.

3. H. *latifolia* (Bartl. in herb. Henke, ex D. C. prod. 4. p. 399.) leaves opposite, obovate, acuminated, attenuately cuneated at the base, glabrous, having the nerves and veins clothed with rusty tomentum beneath; flowers axillary, in fascicles, pedicellate, nutans. S. Native of Peru, on mountains about the Guanooco. Fruit membranous, somewhat tetragonal.

**Broad-leaved Higginsia.** Shrub 3 to 4 feet.


**Obovate-leaved Higginsia.** Shrub 3 to 4 feet.

_Cult._ See *Catesbeya*, p. 511. for culture and propagation.


_LIN. SIST._ Tetradria, Monogynia. Calyx with an oblong somewhat tetragonal tube, and a 4-toothed limb: teeth erect, acute. Corolla salver-shaped, with a very short tube, and a 4-parted spreading limb; segments lanceolate. Anthers 4, sessile upon the tube, erectly connivent, linear, acute. *Stigma* obtuse, hardly emarginate. Capsule baccate, indinforest, crowned by the calyx, 2-celled, slightly tetragonal. Placentas ovate, distinct in the cells of the fruit. Seeds numerous, minute, roundish.—A herb, which is suffruticos, and branched at the base, having the branches hairy. Leaves ovate, acuminate, rough from dots above, and hairy beneath. Stipulas very short, acute. Peduncles axillary, longer than the petioles, many flowered.

1. **H. pedunculata** (Swartz, l. c.) S. Native of the higher mountains of Jamaica, in rather humid shady places. H. Jamaicensis, Spreng. syst. 1. p. 416. *Corolla* with a red tube, and the segments of the limb striped with blood-colour at the base, but they are yellow at the apex. Berries scarlet.

**Pedunculate Hoffmannia.** Shrub 2 to 3 feet.

_Cult._ See *Catesbeya*, p. 511. for culture and propagation.


_LIN. SIST._ Tetradria, Monogynia. Calyx with an obvate tube, and a 4-toothed or 4-parted limb. *Corolla* funnel-shaped, with a very long tube, gradually widening and dilated to the throat, and a 4-parted limb. Stamens 4; filaments inserted at the base of the tube of the corolla; anthers linear, exserted. *Stigma* bidentate, from the lamellae being combined. Berry globose or oblong, 2-celled, crowned by the limb of the calyx; having the dissemination perforated according to Jussieu, but according to Gartntr, it is entire. Placentas spongy, fixed to the upper part of the dissemination on both sides. Seeds numerous, scale-formed, inverted, imbricated downwards, collected in 2 bundles in each cell. Albumen fleshy. Embryo minute, inverted.—Glabrous shurs, bearing supra-axillary simple spines. Leaves small, oval, usually in fascicles. Stipulas solitary on each side, deciduous. Pedicels axillary. Flowers whitish, elongated.
bractless.—This genus comes very near to *Scolosanthis*, but differs in the cells of the fruit being many seeded.


1 C. latifolia (Lindl. bot. reg. 858.) leaves obovate, shining, convex, rather shorter than the spines; teeth of calyx subulate; tube of corolla very long, obconical at the apex. Ș. Native of the West Indies, particularly in Cuba near the Havana. Corolla pale yellow, 4-6 inches long. Fruit ovate, crowned by the 4 subulate calycine teeth.


2 C. spinosa (Lin. spec. p. 159.) leaves ovate, acutish at both ends, rather longer than the spines; teeth of calyx short, acute; berry oval; tube of corolla very long, cylindrical, widening at the ends. Ș. Native of the Bahamas Islands, but particularly of Providence, near Nasma. Lam. ill. 67 f. 1. Curt. bot. mag. t. 131. Tratt. tab. t. 259. C. longiflora, Swartz, prod. p. 30.—Catesb. car. t. 100. Corolla pale yellow, 3-6 inches long. Leaves like those of box, roundish, rising in fascicles. Berry about the size of a middling plum, yellowish, with rather tart pulp.

**Spinose Lily-thorn.** Fl. May, Sept. *Ct.* 1726. Shrub 10 to 14 feet.

3 C. ? Vavassorii (Spreng. syst. 1. p. 416.) leaves elliptic-oblong, obtuse, shining above, and are, as well as the branches specked, glabrous; pedicels 1-flowered. Ș. Native of St. Domingo. Cinchona spinosa, Vavass. journ. phys. oct. 1790. p. 245. t. 2. Lamb. cinch. p. 38. t. 13. C. elliptica, Spreng. in litt. The fruit is said to be capsular and dehiscent at the apex, and the seeds are said to be edged with a wing, but should this be the case it is certainly not a species of *Catesbaea*.

**Vavassor's Lily-thorn.** Shrub 4 to 6 feet.

§ 2. **Erectiflora** (from erectus, erect, and flos, a flower; the flowers are erect, not drooping as in the first section). *D. C. prod.* 4. p. 401. Pedicels axillary, 1-flowered. Flowers erect, glabrous. Stamens inclosed.—Perhaps all are species of the genus Rândia.

4 C. parviflora (Swartz, prod. 30. fl. ind. occ. 1. p. 236.) leaves ovate, stiff, with revolute margins, mucronate, and are, as well as the branches, glabrous; teeth of calyx short, acute; flowers sessile among the leaves; tube of corolla short, tetragonal; berries roundish. Ș. Native of the north of Jamaica, among bushes by the sea side. Vahl, symb. 2. p. 31. eclog. 1. p. 12. t. 10. f. 1. but not of Lam. Gertr. fil. carp. t. 192. f. 3. C. parviflora, ex Jamaica, Spreng. syst. 1. p. 416. exclusive of the diagnosis and synononyms.—Sloan. hist. t. 207. f. 1. Corolla white, with a tetragonal tube, about 4 lines long.

**Small-flowered Lily-thorn.** Fl. June, July. *Ct.* 1810. Shrub 4 to 5 feet.

5 C. campanulata (La Sagra, in litt. ex D. C. prod. 4. p. 401.) leaves ovate-roundish, coriaceous, and are, as well as the branchlets, quite glabrous; spines opposite, longer than the leaves; flowers erect, short, sessile in the axis of the leaves. Ș. Native of Cuba, near the Havana, where it was collected by Ramon de La Sagra. Perhaps sufficiently distinct from *C. pareiflora*.

**Campanulate-flowered Lily-thorn.** Shrub 4 to 5 feet.

6 C. parviflora (D. C. prod. 4. p. 401.) leaves ovate-roundish, mucronate, glabrous; spines axillary, subulate, a little longer than the leaves; branchlets hairy; flowers short, usually twin, axillary, on very short pedicels. Ș. Native of St. Domingo. Catesbaea parviflora var. Domingensis, Spreng. syst. 1. p. 416. Gardénia parviflora, Dietr. suppl. gart. lex. 3. p. 441. ex Röem. et Schultes, syst. 5. p. 247. Rândia parviflora, Lam. dict. 3. p. 25. (exclusive of the syn. of Slaone,) ill. t. 156. f. 2. but the flowers in the figure are drawn 5-eleft. Spines opposite, straight, about 5 lines long. Leaves like those of box, in fascicles. Berries globose, almost sessile. Flowers white, changing to yellowish.


7 C. erecta (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 4. p. 401.) leaves ovate-oblong, acute; branchlets opposite, spreading, unarmed; flowers almost terminal, nearly sessile, solitary, erect; tube of corolla very long. Ș. Native of Mexico. Flowers white, almost like those of *C. spinosa*, but erect. Spurs none in the figure given.

**Erect Lily-thorn.** Shrub 4 to 5 feet.

Cult. All the species of *Catesbaea* are very ornamental while in bloom. They grow best in a mixture of light turfy loam and peat; and cuttings will root if planted in sand plunged in heat, with a bell-glass placed over them. The plants being apt to be infested with insects, they should be kept clean or they will not thrive.

**Tribe III.**

**HEDYOTIDEÆ** (this tribe contains plants agreeing with the genus *Hedyotis* in particular characters). Cham. et Schlect. in Linneae, 4. p. 150. *D. C. prod.* 4. p. 401. Fruit capsular, 2-celled, dehiscing in the middle of the cells: or rather membranous and indescent; cells many seeded. Seeds not winged. Alumen fleshy.—Shrubs and herbs, with opposite leaves, and interpetiolar stipules.

**Sub-tribe I. RONDELIEÆ** (plants agreeing with the genus *Rondeliea* in important characters). *D. C. prod.* 4. p. 401. Stipulas twin on both sides, combined or distinct, neither sheathed nor ending in bristles.

**LV. CONDAMINEÆ** (in honour of — La Condamine, a famous astronomer, and traveller in South America, and who was the first who described and figured Cinchôna lanceolata). *D. C. prod.* 4. p. 402.—Macroémum, Ruiz et Pav. fl. per. 2. p. 48. but not of Browne.—Macroémum, sect. 2. Kunth, and A. Rich.

**LIN. SYST. PENTANDRIA, MONOGYNIA.** Calyx with a cup-shaped tube, and a 5-crenated or 5-toothed limb (f. 95. a.), which at length becomes circumcised at the base, and falls off. Corolla funnel-shaped, with a somewhat curved tube (f. 95. b.), which is a little longer than the calyx, a dilated throat, and a 5-parted limb (f. 95. c.); the segments ovate, acute, spreading, and thickened at the apex (f. 95. c.). Stamens 5, inserted above the middle of the corolline tube (f. 95. b.), or near its throat; filaments shorter than the corolla; anthers oblong-linear, bifid at the base, length of corolla. Stigma 2-lobed (f. 95. f.). Capsule turbinate (f. 95. g.), rather compressed, truncate, umbiliate, 2-celled, dehiscing in the middle of the cells (f. 95. k.). Seeds small, numerous, cuneiform, not winged.—South American shrubs. Leaves large, opposite, on short petioles. Stipulas intrafoliosae, bipartite, acuminate, adpressed, usually connate. Corymbbs or racemes terminal, many flowered.—This genus differs from *Macroémum* in the form of the calyx, in the stamens being inserted above the middle of the corolline tube, not at its base, as in that genus, and in the seeds being wingless; and from *Siekíngia* in the stigma being double, not simple, and in the seeds not being winged, &c.

1 C. cortihoda (D. C. prod. 4. p. 402.) leaves ovate-oblong,
acuminated, cordate at the base, sessile, plicate, coriaceous; coryombs large, brachiately, trichotomous; teeth of calyx broad, short, blunt. \( \frac{a}{b} \). S. Native of Peru, on hills towards Chimacoa, Acomayo, Padilla, and Muna, &c., ex Ruiz et Pav.; and on mountains about the Guanooco river, ex Huenke; as well as of New Granada about Mariquita, and Santa Anna, ex H. B. et Kunth. Macrocœnum corymbosum, Ruiz et Pav. fl. per. 2. p. 48. t. 189. H. B. et Kunth, nov. gen. amer. 3. p. 399. Leaves a foot long. Calyx purplish, fleshy. Corolla white inside and purplish on the outside, with a naked throat. Capsule at first purplish, but at length almost black. Seeds yellow.

*Corymbose-flowered Condamine.* Tree 40 to 50 feet.

2 C. tinctoria (D. C. prod. 4. p. 402.) leaves elliptic-oblong, acute, rounded at the base, petiolate, glabrous on both surfaces; coryombs sessile, triplicate; flowers crowded into heads; segments of corolla acute. \( \frac{a}{b} \). S. Native of South America, at the Missions of the Orinoco, between Encaramada and Carichana. Macrocœnum tinctorium, H. B. et Kunth, nov. gen. amer. 3. p. 399. Willd. rel. in Rom. et Schultes. syst. 5. p. 6. Corolla white, Coryombs terminal.


3 C. microcarpa (D. C. prod. 4. p. 402.) leaves oblong, bluntly acuminate, pubescent beneath; racemes terminal; flowers crowded, sessile; teeth of calyx minute. \( \frac{a}{b} \). S. Native of Peru, in hot shady forests near Chimacoa and Cuchero. Macrocœnum microcarpum, Ruiz et Pav. fl. per. 2. p. 48. t. 188. f. a. Leaves shining above. Racemes 3-9 inches long. Corolla white, with reflexed segments, 4 times longer than the calyx. Capsule small, turbinate. Seeds yellow.

*Small-fruited Condamine.* Tree 25 feet.

4 C. venosa (D. C. l. c.) leaves oval-oblong, acuminate, lined with numerous veins; the nerves and veins downy; stigmas connate, with the lobes acuminate; racemes terminal; flowers sessile; teeth of calyx minute. \( \frac{a}{b} \). S. Native of Peru, in groves in hot places towards Acomayo and Pati. Macrocœnum venosum, Ruiz et Pav. fl. per. 2. p. 49. t. 190. f. b. Branches tetragonal. Leaves 9 inches long. Stipulas reddish. Racemes downy. Flowers small, white.

*Vinca-leaved Condamine.* Shrub 10 feet.

5 C. glabrata (D. C. l. c.) leaves obovate, short-acuminated, attenuately cuneate at the base, quite glabrous, lined with the veins; stigmas 2-lobed, shorter than the petioles; lobes rounded, panicle terminal, glabrous; flowers glomerate; teeth of calyx minute. \( \frac{a}{b} \). S. Native of Peru, on mountains about Huanooco. Macrocœnum glabratum, Bartl. in herb. Huenke. Very like C. venosa, but differs in the smoothness and shape of the leaves.

*Glabrous Condamine.* Shrub 10 feet?

*Cult.* See *Catesbaea*, p. 511. for culture and propagation.


*Linn. syst.* Pentändria, Monogynia. Limb of calyx superior, 5-parted. Corolla cup-shaped, with a 5-parted limb, and a bearded throat. Stamens 5, almost distinct to the base of the corolla, exserted. Stigma parted. Ovarium 2-celled, many-ovulate.—A middle-sized tree. Leaves oblong, acuminate, rather pilose on both surfaces. Spikes branched, terminal. Flowers small, cream-coloured.—This genus is allied to *Macroœnum* and *Machionia* according to the author.

A. *TUBULARIA* (Schott, l. c.) \( \frac{a}{b} \). S. Native of Brazil, in groves.

*Bundle-flowered Alseis.* Tree.

*Cult.* For culture and propagation see *Rondeletia*, p. 517.


Linn. syst. Pentändria, Monogynia. Calyx with a turbinate tube, and a small 5-toothed persistent limb. Corolla tubular, with a wide throat; the tube pentagonal before expansion; and the segments 5, acute, and eretice-b. Stamens 5, almost free from the corolla, but sometimes adnate to the base of the tube; filaments very hairy above the middle; anthers oblong, inclosed. Style length of the stamens; stigma obtuse, 2-lobed. Capsule 2-celled, 2-valved; valves desiclsing at the sides (ex Swartz). Seeds numerous, imbricated, acute.—Small glabrous trees. Leaves approximate, oblong, short-acuminated. Stipulas solitary on both sides. Peduncles terminal and subaxillary, solitary, trichotomously corymbose above. Flowers rather large, yellowish green.

1 M. JAMAICÆNSE (Lin. amoen. 5. p. 413.) arboreous; leaves oblong-obovate, petiolate, polished; stipulas ovate-triangular, much shorter than the petioles; coryombs on long peduncles. \( \frac{a}{b} \). S. Native of the south of Jamaica, in shady places on the banks of rivulets. Swartz, obs. p. 68. t. 3. f. 1. Lam. dict. 3. p. 670.; and of Guadaloupe at a place called Grand Brandau, where it was collected by L’Hermier. Branches warty. Corollas rather large, of a yellowish green colour.

Jamaica Macroœnum. Clt. 1806. Tree 12 to 14 feet.

† Species not sufficiently known, and do not probably belong to the present genus.

2 M. ? *STIPAœCEUM* (Roxb. fl. ind. 2. p. 144.) leaves almost sessile, lanceolate, smooth; stipulas oblong, very large; coryombs terminal, supraduplicate. \( \frac{a}{b} \). S. Native of the Moluccas. The mouth of the corolla is uncommonly woolly, almost hiding the stamens.

*Stipulaceous Macroœnum.* Tree.

3 M. ? *PARVIFLORUM* (Roxb. fl. ind. 2. p. 144.) shrubby; leaves on short petioles, lanceolate, entire, smooth; stipulas anular, truncate; peduncles axillary, many-flowered; corolla acutabelliform. \( \frac{a}{b} \). S. Native of the Moluccas.

*Macroœnum.* Tree or shrub.

4 M. ? *TETRANDRIUM* (A. Rich. mem. soc. hist. nat. Par. 5. p. 279.) leaves elliptic-lanceolate, acute at both ends, discoloured, tomentose beneath; flowers subracemose, terminal, small, tetramerous; calyx woolly; corolla short; stamens exserted; capsule desiclsing at the dissepiment. \( \frac{a}{b} \). S. Native of Brazil.

*Tetrandrous Macroœnum.* Shrub or tree.

5 M. ? *TUBULARIUM* (A. Rich. l. c.) leaves broad-ovate, acuminate at the apex, dimidiate at the base, petiolate, downy; flowers subascenose, terminal; one of the teeth of the calyx is expanded into a large, broad, somewhat heart-shaped petiolar leaf; corolla with a long tube, and a 5-lobed limb; stamens exserted; capsule desiclsing in the middle of the cells. \( \frac{a}{b} \). S. Native of Brazil. This is probably a species of Calycophyllum.

*Tube-flowered Macroœnum.* Tree or shrub.

*Cult.* For culture and propagation see *Catesbaea*, p. 511.

LIN. SYST. Pentândria, Monogy'nia. Calyx with an obovate or turbinate tube, and an almost obsolete entire limb. Corolla with a short tube, and a 5-cleft spreading limb; segments hairy in the middle outside. Stamens 5, inserted in the upper part of the corolline tube; filaments hairy at the base; anthers oval. Capsule obovate or turbinato, ligneous, coriaceous, crowned by the marginal limb of the calyx, 2-celled; cells deshiscing from the apex to the base, ex Jacquin, 1-seeded, ex A. Richard, many-seeded; valves semibifid. Seeds pendulous.—American glabrous trees. Leaves opposite, on short petioles. Stipulas interpetiolar, solitary on both sides. Corymbs or cymes terminal. Flowers white.—This genus is nearly allied to Machaonia.

1 C. cymosâ (Jacq. amer. p. 61.) leaves ovate, acuminate at both ends; branches of corymb alternate; capsules obovate, very short. Ψ. S. Native of Martinico, along the sides of mountain streams or torrents, where it is commonly called le Champs de rivière, or river wood. Macrocennum longifolium, A. Rich. mem. soc. hist. nat. Par. 5. p. 279. A lofty tree, with a handsome head. Leaves a foot long, shining, commonly 8 or 10 at the top of each branch. Flowers small, disposed in racemose corymbs, white. Capsules small. The wood is white, and used for beams and rafters.

Cymose-flowered River-wood. Tree lofty.

2 C. TURRIBÂ'ATA (D. C. prod. 4. p. 404.) leaves oval, obtuse at the apex, and acute at the base; branches of corymb opposite; capsules turbinato. Ψ. S. Native of Cayenne, where it was collected by Patris. Upper leaves 3 inches long and ½ broad, on short petioles. Stipulas triangular, acuminate. Peduncles and capsules downy.

Turbinato-flowered River-wood. Tree.

Cult. For culture and propagation see Rendeëlia, p. 517.

LIX. AUGUSTEA (named in compliment to the present empress of Austria, princess Caroline Augusta of Bavaria). D. C. prod. 4. p. 404.—Augusta, Pohl, fl. bras. 2. p. 1. but not of Leand.

LIN. SYST. Pentândria, Monogy'nia. Calyx 5-cleft, with foliaceous permanent segments. Corolla very long, tubular, incurved, 10-striated, with a spreading limb, which is valvate in asistence. Anthers sessile, exserted. Stigma cloven. Capsule 2-celled, dehiscing at the apex, 4-cleft. Seeds angular, margi- nated, truncate at the apex, fixed to a transverse receptacle.—Middle-sized trees. Leaves on short petioles, simple, decussate, entire, oblong, stipulate. Flowers showy, bracteate, in terminal fasicles, deep red or crimson. This genus differs from Exostémma by the funneled-shaped corolla, with broad short segments, by the foliaceous calycine lobes, and by the angular seeds.

1 A. LANCEOLÂ'TA (Pohl, fl. bras. 2. p. 2. t. 101.) leaves lanceolate, and are, as well as the stipulas, glabrous; flowers terminal, 3 in a fascicle; bracteas lanceolate, flat, ciliated. Ψ. S. Native of Brazil, in the province of Goyaz, in shady places, on the banks of rivers and ditches, in Serra de Cristaes. Flowers crimson or deep red. Stem bluish red.

Lanceolate-leaved Augusta. Shrub.

2 A. PARVIFOLIA (Pohl, fl. bras. 2. p. 3. t. 102.) leaves lanceolate, equal at the base and apex, acute; stipulas and bracteas glabrous; flowers terminal, twin; calycine segments oblong, bluish, retuse at the base, and pilose inside. Ψ. S. Native of Brazil, in the province of Rio Janeiro, in shady places on the banks of rivers and rivulets on the road from Engenho da Vargue to Agoa de Serra. Stem of a greyish brown colour. Flowers bluish red.

Small-leaved Augusta. Shrub.


1 P. GRANDIFLORA (Lin. spec. 244.) leaves elliptic-lanceolate; flowers axillary, pedicellate, solitary, 4 times the length of the breadth. Ψ. S. Native of Jamaica, St. Thomas, &c. among rocks at the foot of the mountains. Smith, icon. pict. 1. t. 6. Curt. bot. mag. 286. Jacq. amer. t. 44. pict. t. 64. Flowers almost like those of Brugmansia arborea, white, reddish inside at the throat, 5 inches long and 1½ broad, very fragrant at night; but in the bud state they are yellowish, tipped with red. Tube with 5 hairy angles.

Var. β; leaves ovate, acute. Ψ. S. Growing along with the species.


2 P. coCCINEA (Swartz, fl. ind. occ. 1. p. 384.) leaves ovate-roundish, coriaceous; flowers axillary, pedicellate, solitary, hardly twice the length of the breadth. Ψ. S. Native of the west of Jamaica, on the precipes of mountains, but rare. P. 3 U.

Scarlet-flowered Portländia. Clt. 1812. Shrub 2 to 3 feet.

† A species hardly known.

3 P. acuminata (Willd. rel. in Ramm. et Schultes, syst. p. 5. p. 23.) leaves ovate, acuminate. ñ. S. Native of New Spain, at Caraccas. Perhaps the same as P. grandiflora ß.

Acuminated-leaved Portländia. Shrub.

Cult. The species of Portländia are deserving of a place in every collection of stov plants, for their large showy flowers. They thrive best in a mixture of sandy loam and peat; and cuttings, not having their leaves shortened, will root freely if planted in a pot of sand, plunged in heat, with a hand-glass over them. A strong heat is necessary for flowering the species, and without it they will not even grow freely.


Lin. syst. Tetrandría, Monogýnia. Calyx with a turbinately oblong tube, which is angular from 8 filiform ribs, 4 of which are carinal, and 4 sutilar: a 4-parted limb; lobes linear-lanceolate. Corolla clavate, tetragonal, with a 4-parted limb. Anthers 4, linear, not exceeding the limb of the corolla. Stigma unknown. Capsule ovate, dehiscing at the apex, separable from the calyx, and therefore at length becoming naked, 2-celled, but almost 4-celled from the margins of the valves being involute; valves bifid at the apex. Placentas narrow, rather prominent. Seeds innumerable, small, compressed, not winged, but dilated along the margins from membranous crests. Albumen fleshy.—A globular shrub. Leaves opposite, obovate, bluish, cuneated at the base, petiole, veinless, with the exception of the middle nerve. Stipulas short, truncate, combined. Pedicels axillary, solitary, 1-flowered, naked. Flowers white.


Var. ß. Commersoniana. ñ. S. Native at Port Praslin. Leaves broad-obovate, very blunt, hardly coriaceous, cuneated at the base, on short petioles, 3-4 inches long and 2 or more broad. Corolla more than 2 inches long, with an obconical tube, and ovate lobes, which are apiculate by a mucrone at the apex. Anthers shorter than the lobes of the corolla.

Var. γ. Gauichaudiana. ñ. S. Native of the Island of Rawak. Intermediate between the two preceding varieties. Lobes of corolla triangular, acute, with the recesses broad and obtuse. Anthers equal in length to the corolla. Southern Bikkia. Tree or shrub.

Cult. For culture and propagation see Portländia above.

LXII. ISIDOREA (isidos is the Latin name of a shrub like coral; the name has been applied to this genus because it is stiff and dry, and grows by the sea side). A. Rich. in mem. soc. hist. nat. par. 5. p. 284. t. 25. f. 1. D. C. prod. 4. p. 405.

Lin. syst. Pentandría, Monogýnia. Calyx with a turbinate pentagonal tube, and a 5-parted limb; lobes erect, keeled, lanceolate-subulate. Corolla tubular, pentagonal, with a naked throat, and a 5-cleft limb; segments triangular, acute, short. Stamens inserted in the bottom of the tube of the corolla, and about its length; filaments capillary, villous at the base, and combined together in a monadelphous manner; anthers oblong; obtuse at the apex. Style slender, length of corolla; stigma bilabellate; lamellose, obtuse. Capsule almost globose, pentagonal, truncate at the apex, crowned by the segments of the calyx, 2-celled; cells deshissent, many-seeded. Seed angled, from being pressed against each other, girded by a cup-shaped membrane at the base.—A stiff shrub, with the habit of Ernóde. Leaves opposite, linear, stiff, with revolute margins. Stipulas on the younger branches entire and subulate, but those on the older branches are bipartite. Flowers almost terminal, solitary, nearly sessile, often hexamerous.


Pleasant Isidorea. Shrub.

Cult. See Rondlelétia, p. 517. for culture and propagation.

LXIII. SPALLANZANIA (named in honour of Abbé Spallanzani, an Italian celebrated for his researches in natural history, particularly in zoology). D. C. prod. 4. p. 406. but not of Neck, nor Pall.

Lin. syst. Pentandría, Monogýnia. Calyx with an obversely pyramidal tube, a 5-parted limb, and foliaceous, linear, distant, acute, erect, permanent lobes, which are longer than the tube. Corolla with a slender, terete tube, which is longer than the segments of the limb, a naked throat, and 5 oval spreading segments. Stamens 5; filaments free from the throat, exserted; anthers oblong. Style filiform; stigmas 2, slender, elongated. Capsule ovate-globose, ribbed by nerves, and crowned by the calycine lobes, 2-celled; obscurely deshissent: having semi-bifid carpels. Placentas adnate to the dissemination. Seeds ovate, tubercular.—A smooth shrub. Branches terete, but compressed at the apex. Leaves obovate or oval, rather coriaceous. Stipulas solitary on both sides, ovate, bifid at the apex. Caryms terminal, many-flowered, with angular branches, which are branched at the base.—Very nearly allied to Lándia a section of Musscënda.

1 S. corymbosa (D. C. l. c.). ñ. S. Native of Madagascar, where it is called Tabamaracha by the natives.

Corymbose-flowered Spallanzania. Shrub.

Cult. For culture and propagation see Rondlelétia, p. 517.


Lin. syst. Tetra-Pentandría, Monogýnia. Calyx with a subglobose tube, and a 4-5-parted limb; lobes oblong-linear, acute, permanent. Corolla with a cylindrical tube, which is hardly ventricose at the apex, and a 4-5-lobed spreading limb; lobes roundish. Anthers 4-5, sessile at the top of the tube, inclosed. Stigma bifid. Capsule globose, crowned by the calyx, 2-celled, dehiscing from the apex into 2 valves, which
are usually cleft at the apex, whence it sometimes appears 4-valved; but usually dehiscing at the cells, rarely at the dissepiment. Placentas central. Seeds numerous, small, ovate, angular, usually only 2 in each cell at maturity. —Small trees or shrubs, mostly natives of America. Leaves almost sessile, or more or less petiolate. Stipulas deltoid, or linear-lanceolate, solitary on both sides, undivided, sometimes hairy inside. Peduncles axillary, usually trichotomous, sometimes disposed in a terminal corystose panicule, rarely 3 or 1-flowered. —All the Asiatic plants referred to this genus are species of Wendlandia.


* Tube of corolla hardly longer than the calyx.

1 R. laurifolii (Swartz, fl. ind. occ. p. 363.) leaves lanceolate-oblong, acute, glabrous on both surfaces; stipulas deltoid, glabrous on the outside, with ciliated margins, and villous at top; racemes compound, axillary, erect; tube of corolla very short, clothed with adpressed villi. ingleton S. Native of Jamaica and Guadeloupe, among bushes. Petesia, no. 2. P. Browne, jami. p. 143. t. 2. f. 2. Tube of calyx turbinated, clothed with adpressed down; limb 5-parted, smoothish; lobes acute, about equal in length to the tube of the corolla. Flowers small, dusky yellow. Capsules about the size of hemp-seed. Leaves 3-4 inches long, on petioles about an inch long.


2 R. racemosa (Swartz, fl. ind. occ. p. 360.) leaves lanceolate-ovate, acuminate, petiolate, glabrous on both surfaces; stipulas almost deltoid, with somewhat ciliated margins; racemes axillary, trichotomous, spreading. ingleton S. Native of Jamaica, in woods on the mountains. Petesia, P. Browne, jami. p. 143. t. 2. f. 3. Leaves opposite and 3 in a whorl. Tube of corolla short, clothed with silky hairy down on the outside, a little longer than the calycine teeth, which are very short. Very nearly allied to R. laurifolia, but the petioles are longer, the racemes shorter, the calycine teeth shorter, and probably the stigma is undivided, as mentioned by Swartz. Branches covered with hoary bark; branchlets tetragonal. Corolla hoary.


** Tube of corolla cylindricall, 2-3 or 4 times longer than the calycine lobes.

3 R. thyrsoides (Swartz, prod. p. 41. fl. ind. occ. 1. p. 358.) leaves oblong, acute, petiolate, membranous, glabrous on the upper surface as well as the branches, but downy beneath; stipulas broad ovate, acute, glabrous, stiff; thyrses axillary, shorter than the leaves. ingleton S. Native of Jamaica, on the driest hills in the western parts of the island. Branches bluntly tetragonal. Leaves 3 inches long. Calyx minute, 5-toothed. Flowers small, dull whitish yellow or rust-coloured, with an elongated tube, which swells below the limb, and clothed with silky pubescence on the outside. Capsules roundish, size of coriander seeds. Seeds 2 in each cell at maturity.


4 R. umbellulata (Swartz, prod. p. 41. fl. ind. occ. 1. p. 367.) leaves lanceolate-ovate, acute, rather hairy, petiolate; stipulas hairy, ending each in a bristly acum; peduncles axillary, trichotomous at the apex, somewhat umbelliferous, shorter than the leaves. ingleton S. Native of Jamaica, on rocks near streams. Petesia, no. 3. P. Browne, jami. p. 144. 7 and there-

fore Petesia villosa, Smith, in Rees’s cyc.l. no. 4. Calyx very villous, with linear teeth. Corolla larger than in the rest of the species, downy, of a dusky yellow colour; tube elongated. Capsule roundish: having 2 seeds in each cell at maturity.

Umbellate-flowered Rondeletia. Shrub 2 feet.

5 R. tomentosa (Swartz, prod. p. 41. fl. ind. occ. 1. p. 365.) leaves ovate, acuminate, petiolate, membranous, hairy above, but clothed with hoary villous tomentum beneath; peduncles axillary, tripartite, short. ingleton S. Native of Jamaica, near Spanish Town, on rocky hills. Petesia stipulata, Linn. spec. p. 360. 7 ex Swartz. Stipulas ovate, downy, with a short point. Branchlets villous at the ends. Flowers small, whitish, or dusky yellow, villous outside. Capsules roundish, size of coriander seeds, containing 1 seed in each cell at maturity.

Var. ingleton, Domingensis (D. C. prod. 4. p. 407.) leaves oval-oblong, cuneated at the base, downy or villous above, but clothed with soft hoary tomentum beneath. ingleton S. Native of St. Domingo, where it was collected by Bertero. R. tomentosa, ex Hispaniola, Spreng. syst. 1. p. 708. This plant is probably referrible to Petesia tomentosa.


Hoary Rondeletia. Shrub 2 to 3 feet.


Var. ingleton, Aitomipes (D. C. prod. 4. p. 408.) leaves ovate-oblong, acute, pilose; capsules many-seeded. ingleton S. Native of Jamaica. Rondeletia hirta, Ait. hort. kew. 1. p. 227. This differs from the plant of Swartz, in the leaves being shorter, broader, and less acuminate, and in the fruit being dehiscent, and containing a great number of small seeds.


8 R. Panamensis (D. C. prod. 4. p. 408.) leaves oval-oblong, acuminated at both ends, glabrous above, white beneath, and villous on the nerves and veins; stipulas triangular, acute, villous outside; peduncles axillary, opposite, shorter than the leaves, trifid and densely corymbose at the apex: ultimate ones collected into a short thyrs; calyx villous, with lanceolate segments. ingleton S. Native of Panama. R. hirta, Bartl. in herb. Huenke. Tube of corolla villous; limb of 5 roundish lobes. Capsules almost globose. Seeds numerous, and of 2 forms, appendiculate.

Panama Rondeletia. Shrub 5 to 6 feet.

9 R. hirsuta (Swartz, prod. p. 41. fl. ind. occ. 1. p. 371.) leaves oblong, acuminate, hairy on both surfaces, pale beneath, on short petioles; stipulas ovate-lanceolate, hairy; branchlets peduncles, and flowers hairy; peduncles axillary, trichotomous. Loose, about the length of the leaves. ingleton S. Native of the south of Jamaica, among bushes on the mountains near Bath.

3 v 2
Petioles clothed with rufescent villi. Calyx villos. Corolla yellowish, tomentose outside, with a narrow throat. Seeds girded by a wing, according to A. Rich: if this be the case, it is referable to the genus Bouvardia.


10. *R. trifoliata* (Jacq. amer. p. 60. t. 43. pict. t. 82.) leaves oblong-lanceolate, 3 in a whorl, on short petioles, glabrous above but tomentose beneath; petioles and branches hairy; panicles axillary, shorter than the leaves. ℃ S. Native of Jamaica, at the foot of the mountains. Flowers reddish, small. Leaves 3 inches long. Teeth of calyx acuminate. Corolla with a very long tube. Capsule many-seeded.

**Trifoliata** Rondeletia. Tree 12 to 14 feet.

11. *R. levinga* (Ait. hort. kew. ed. 2. vol. 1. p. 366.) leaves oblong or elliptic, acuminate at both ends, glabrous, paler beneath, petiolate; stipulas deltoid, glabrous on the outside, but bearded inside; peduncles axillary, trichotomous, rather panicled, 3 times longer than the petioles, but one half shorter than the leaves. ℃ S. Native of Cuba, about the Havana; and of Trinidad. Anonyma, Sieb. fl. trin. no. 574. Tube of calyx downy; limb of 3-5 linear lobes, which are 5-times shorter than the tube of the corolla. Capsule downy, smaller than a pea.


12. *R. Americana* (Lin. spec. 245.) leaves lanceolate or elliptic, acuminate at both ends, glabrous, hardly petiolate, paler beneath; stipulas deltoid, downy outside; peduncles opposite, axillary, a little longer than the leaves, dichotomously cymose at the apex. ℃ S. Native of Cuba, near the Havana; Jamaica, and many other West India islands, ex. Plum. ed. Burm. t. 242. f. 1. Flowers white, bibracteolate, with a little scent. Tube of calyx clothed with adpressed villi; lobes of limb oblong-linear, 4 times shorter than the tube of the corolla. Capsule many-seeded.


**Cumana** Rondeletia. Shrub 8 to 10 feet.

14. *R. richardii* (D. C. prod. 4. p. 408.) glabrous; leaves oval or oblong, acute at both ends, on very short petioles; stipulas bipartite, obtuse, permanent; corollas pedunculate, rising from the forks of the branches; calyx truncate, with 5 very short teeth. ℃ S. Native of Cuba, about the Havana, where it was collected by De la Osa. Flowers white in the dried state, form of those of the other pantropical species of *Rondeletia*, but the calyx is hardly 5-toothed.

**Small-toothed-calyx** Rondeletia. Shrub.

15. *R. odorata* (Jacq. amer. p. 59. t. 42. pict. t. 61.) leaves hardly petiolate, ovate, or subcordate, acutish, scabrous above, paler beneath and rather scabrous on the nerves; corollas terminal. ℃ S. Native of Cuba, on rocks by the sea-side, at the Havana; and of Mexico. Lin. spec. 1671. H. B. et Kunth, nov. gen. amer. 3. p. 394. R. coccinea, Moc. et Sesse, fl. mex. icon. ined. R. obovata, Lin. syst. veg. Branchlets villous. Stipulas wide, acute. Peduncles trichotomous. Flowers handsome scarlet, with the projecting ring of the tube orange-coloured, having the scent of violets, downy on the outside, either pentameres or hexameres. Lobes of calyx linear, erect, one half shorter than the tube of the corolla. Capsule containing many angular seeds.

**Sweet-scented** Rondeletia. Shrub 5 to 6 feet.

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16. *R. ferrifera* (Afo.) leaves oval coriaceous, deep green, glabrous, petiolate; corollas terminal. ℃ S. Native of Sierra Leone, in the low lands about Freetown. A branched spreading shrub, with the habit of *Laurustinus*. Flowers pale red. Stamens 5, a little longer than the tube of the corolla. Calyx 5-cleft.

**Ferrifera** Rondeletia. Shrub 4 to 5 feet.

17. *R. floribunda*; leaves ovate, acuminate, membranous, petiolate; corollas lateral and terminal, numerous; stamens 5, exerted. ℃ S. Native of Sierra Leone, in woods on the mountains. Corolla tubular, 5-cleft, white. Calyx 5-cleft.

**Bundle-flowered** Rondeletia. Shrub 5 to 6 feet.

18. *R. loniceroides*; leaves roundish, ovate, coriaceous, glabrous, petiolate; corollas campanulate; corolla with a long tube and a 5-cleft border; stamens 5, longer than the tube. ℃ S. Native of Sierra Leone, among bushes in the low lands. A branched twining shrub.

**Honeysuckle-like** Rondeletia. Shrub tw.

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* Unarmed. *Panicles terminal.*


**Twiggy** Rondeletia. Shrub 6 to 5 feet.


**Discoloured-leaved** Rondeletia. Shrub 6 to 6 feet.

21. *R. tuba-cantans* (H. B. et Kunth, nov. gen. amer. 3. p. 396. t. 291.) leaves oblong, acute, petiole, clothed with fine down above, and with canescent pubescence beneath, as well as on the branches; stipulas lanceolate-subulate; panicles terminal, sessile, tripartite. ℃ S. Native of New Granada, between Maracaiba and Honda. Lobes of calyx lanceolate, 5-times shorter than the tube of the corolla. Corolla tomentose, outside. Fruit unknown.

**Downy** Rondeletia. Shrub 4 to 6 feet.

22. *R. elongata* (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 409.) leaves elliptic-oblong, acuminate at both ends, pubescent above, but clothed with white tomentum beneath, but they at length become glabrous from the down being deciduous; stipulas lanceolate, equal in length to the petioles; panicles terminal, on long peduncles; flowers crowded; lobes of calyx linear, 3 times shorter than the tube of the corolla. ℃ S. Native of Mexico, about Acapulco. An intermediate species, between *R. tuba-cantans* and *R. leucophyllum*.

**Elongated** Rondeletia. Shrub.

23. *R. leucophyllum* (H. B. et Kunth, nov. gen. amer. 3.
24. **Rondeletia** (D. C. prod. 4. p. 409.) leaves oval, acute, somewhat cuneated at the base, petiolate, clothed with villous pubescence above, but hoary from soft villous tomentum beneath; branches clothed with velvety tomentum; stipulas lanceolate, acuminate, villous; racemes axillary, shorter than the leaves, many-flowered. " S. Native of St. Domingo, where it was collected by Bertero. R. hisrita, Spreng. in herb. Balb. but not of Swartz. Calyx villous; lobes linear, 3 times shorter than the tube of the corolla. Peduncles semi-orbicular, 3-seeded. Capsule glabrous, villous outside. " S. Native of the West India islands, in Santa Cruz, Montserrat, and Martinico. R. triflora, Vahl, symb. 3. p. 34. t. 54. Oldenlandia longiflora, Lam. dict. 4. p. 534. *Hedyotis* longiflora, Spreng. pug. 2. p. 27. Branches hairy towards the top, terete or tetragonal. Leaves 2-5 inches long. Lobes of calyx length of the tube of the corolla. Capsule many-seeded. Tube of corolla silky outside.

**Pilose Rondeletia.** Shrub 4 to 6 feet.


**Box-leaved Rondeletia.** Shrub 2 to 3 feet.

27. **R. bovyana** (D. C. prod. 4. p. 410.) leaves obovate-oblong, obtuse, on very short petioles, somewhat mucronate, hoary on both surfaces from short down; stipulas lanceolate, acute; pedicels axillary, very short, 1-flowered. " S. Native of St. Domingo, where it was collected by Bertero. R. incana, ex Hispaniola, Spreng. syst. 1. p. 707. ex herb. Balb. Allied to *R. buxifolia*, but quite distinct from *R. incana*.

**Rogena-leaved Rondeletia.** Shrub.

28. **R. leptaca** (D. C. prod. 4. p. 410.) spines opposite; leaves broad-oval, acutish, glabrous on both surfaces, but rather pilose when young as well as the branches; pedicelles slender, equal in length to the leaves, or longer than them, bearing 3-5 flowers at the apex. " S. Native of Cuba, about the Havana, where it was collected by De la Ossa. Branches slender, glabrous. Spines axillary, long, bearing rudiments of leaves on one side. Peduncles an inch long. Segments of the calyx subulate. Corolla 5 lines long.

**Slender-spined Rondeletia.** Shrub.

29. **Brachycarya** (D. C. l. c.) spines opposite; leaves elliptic-oblong, acute at the base, and acuminate at the apex, glabrous above, but villous beneath, as well as the branchlets, pedicelles, and flowers; pedicelles one half shorter than the leaves, 3-4-flowered at the apex. " S. Native of Brazil. Branches dotted by linear-oblong crowded warts. Spines conical, stiff, forming a straight angle, spreading, 4-5 lines long. Segments of the calyx subulate. Anthers inserted at the throat.

**Short-spined Rondeletia.** Shrub.

† **Species not sufficiently known.**


**Small-flowered Rondeletia.** Shrub.

31. **R. rhyhchospora** (H. B. et Kunth, nov. gen. amer. 3. p. 306.) leaves oblong-elliptic, acute, on short petioles, pubescent above and on the branches, but clothed with canescence tomentum beneath; panicles terminal; seeds beaked at both ends. " S. Native of New Granada, near Honda. The flowers are unknown.

**Beaked-seeded Rondeletia.** Shrub 4 to 6 feet.

32. **R. dispersa** (Jacq. amer. p. 59.) leaves oval, obtuse, petiolate, glabros; racemes axillary, compound, loose, trifid; fruit somewhat baccate, 2-seeded. " S. Native of South America, in the woods of Carthagena, in rocky places; very frequent in the islands of Baru and Tierra Bomba. This plant should probably be removed from the genus as well as from the present tribe. Flowers sweet-scented, purplish white. Perhaps a species of Caithium.

**Two-seeded Rondeletia.** Tree 15 feet.

33. **R. coriacea** (Spreng. syst. 1. p. 707. but not of Wall.) leaves oval-oblong, coriaceous, shining above, but clothed with very short velvety down beneath as well as on the branchlets; stipulas semi-oiricular, furnished with a pungent tooth in the middle; cymes terminal; calyxes and corollas 5-parted, rather hispid; stamens exerted. " S. Native of equinoical Brazil. Mussaenda coriacea, Spreng. neu. entr. 2. p. 145. It is probable that the plant is neither a *Mussaenda* nor a *Rondeletia*, according to Cham. et Schlecht. in Linnaea. vol. 4. p. 165., but the structure of the fruit is entirely unknown.

**Coriaceous-leaved Rondeletia.** Shrub.

**Cult.** The species thrive well in a mixture of sand, loam, and peat; and cuttings of them are easily rooted if planted in a pot of sand, plunged in heat under a hand-glass. All are shrubs of very little beauty or interest.

**LXV. WENDLANDIA** (Henry Ludov. Wendland, Curator of the botanical garden at Hanover, and author of Commentatio de Acaecis Aphyllis). Bartl. med. ex D. C. prod. 4. p. 111. but
not of Wild. Rondeletia, Roxb. and Wall. fl. ind. 2. p. 133.
but not of Plumier.

Lin. syst. Tetra-Pentandria, Monogynia. Calyx with an
almost globose tube, which is often striated, and a very short
permanent limb, which is 4-5-toothed to the base. Corolla
with a terete tube, which is longer than the calyx, and a spreading
4-5-lobed limb; lobes ovate, acutish. Stamens 4-5; filaments
rising from the top of the tube; anthers oblong, exserted.
Style exserted; stigma biform, with the lobes thickish. Capsule
ovate-globose, 2-celled, crowned by the calyx, dislocating at the
seeds into 2 valves at the apex. Seeds small, numerous in each
—Trees and shrubs, all natives of the East Indies. Leaves
opposite, coriaceous, oval, petiolate. Stipulas broad at the base,
acuminated. Panicles axillary and terminal, many-flowered.
Flowers small.—This genus differs from Rondeletia as Eros-
témma does from Cinchona.

§ 1. Pentàmera (from πέντε, pente, five, and μέγας, meris, a
part; in allusion to the flowers being pentameres). D. C.
prod. 4. p. 411. Calyx and corolla with 5-lobed limbs. Sta-
mens 5.

* Indian species.

1 W. panículata (D. C. prod. 4. p. 411.) arboreous; leaves
almost sessile, oval-oblong, acuminate, smooth; stipulas reni-
form, sometimes apiculate, at length recurved; panicles ter-
minal and sub-axillary. τ. S. Native of the Malay islands.
Rondeletia paniculata, Roxb. fl. ind. 2. p. 133. Flowers small,
white, very numerous. Bracteas of various forms and sizes, all
hair. Calyx villous. Corolla glabrous, with revolute segments.
Tetra-Pentámera (D. C. l. c.) arboreous; leaves petiolate,
oblanceolate, smooth above, pubescent on the nerves beneath,
as well as on the branches, pedicels, peduncles, and calyxes;
stipulas triangular, cuspidate; panicles terminal, dec-
cussate; flowers by threes. τ. S. Native of Bengal, about
Burdwan and Midnapoor. Rondeletia tinctóri, Roxb. fl. ind. 2.
p. 134. Leaves 4-6 inches long and 1-2 broad. Branches of
panicle 4-sided, hairy. Bracteas numerous, hairy, those of the
ultimate divisions of the panicle ensiform, with a hastate base.
Flowers numerous, small, white, almost sessile, fascicled. Seg-
ments of corolla spreading. The bark is employed as a mod-
dant by the natives in some of their dyes, and is called by them
Tula-loth.

Dyer's Wendlandia. Tree.

3 W. Notónia (Wall. cat. no. 2673.) shrub in every
part, except the corollas; leaves elliptic or obovate-ob-
long, acuminate, pale beneath; peduncles axillary and
terminal, disposed in terminal racemose thyrsoid panicles; corolla
with a slender tube, much longer than the calyx, which is woolly;
stipulas broad, rounded at the apex. τ. S. Native of the
East Indies, in the Nilgherry mountains, where it was collected
by Noton. 1xora congésa, Roxb. Flowers white, in clusters?
Leaves usually 3 in a whorl.

Norton's Wendlandia. Shrub or tree.

4 W. glabra (D. C. l. c.) arboreous; leaves petiolate,
oblong lanceolate, glabrous on both surfaces, as well as the peti-
oles, branchlets, peduncles, and calyxes; stipulas triangular,
cuspidate; panicles terminal, decussate; flowers by threes.
τ. S. Native of Java, on the mountains in woods. Ronde-
letia tinctória, Blum. bijdr. p. 974. but differs from the plant
under the same name by Roxburgh, in its smoothness, and by the
flowers being distinctly pedicellate.

Glabrous Wendlandia. Tree.

5 W. níz (Wall. cat. no. 6271.) branchlets downy; leaves
glabrous, elliptic lanceolate, tapering to both ends, pale beneath;
stipulas broad at the base, and cuspidate at the apex; panicles
terminal, downy; flowers almost sessile, in fascicles. τ. S.
Native of Martaban, on the banks of the Ayram. Flowers very
small.

Shining Wendlandia. Shrub or tree.

6 W. exserèta (D. C. prod. 4. p. 411.) arboreous; leaves
petiolate, broad lanceolate, glabrous or downy above, pubes-
cent, or tomentose beneath; stipulas semi-lunate, reflexed;
panicles terminal, with spreading downy branches; corolla sub-
campanulate. τ. S. Native of the interior parts of Bengal,
and particularly over the ruins of the ancient city of Gour; and
nyílófora, Roth. nov. spec. 141. Ronb. Hévény, Rem. et
Schultes, syst. 5. p. 234, and Ronb. Oryssén, Roth. nov. spec.
p. 142. ex Wall. fl. ind. 2. p. 135. Branchlets villous. Leaves
4-6 inches long. Bracteas somewhat ensiform, varying much in
size. Flowers numerous, small, pure white, fragrant. Calyx
hoary. Segments of corolla recurved.

Exserèted-stamened Wendlandia. Tree 20 to 30 feet.

7 W. próxima (D. C. l. c.) arboreous; leaves elliptic,
acuminated, clothed with tomentum beneath, as well as on the
branchlets; panicles very hairy; flowers very much crowded;
limb of corolla one half shorter than the tube; calycine teeth
obtuse, pilose. τ. S. Native of the east of Bengal, in Silhet.
Rondeletia próxima, D. Don, prod. fl. nep. p. 139. Nearly
related to W. exsérèta, but in that species the leaves are silky
beneath, and the branchlets are more crenate; the limb of the
corolla is about equal in length to the tube; the stigma is
bipartite, and the calycine teeth are ovate and acute.

Allied Wendlandia. Tree.

8 W. leuóstríka (Wall. cat. no. 6721.) shrub glabrous in
every part; leaves elliptic, tapering to both ends, shining above;
stipulas broad at the base, and cuspidate at the apex; teeth of
calyx subulate, much shorter than the tube, which is terete and
slender; bracteas to the flowers linear. τ. S. Native of the
Burmese empire, on Mount Taon-Dong. Flowers pedicellate,
white, dispersed in terminal racemose panicles; pedicels solitary.
Capsules hardly the size of coriander seeds.

Privet-like Wendlandia. Tree.

9 W. dentíflóra (D. C. prod. 4. p. 412.) arboreous; leaves
petiolate, obovate-oblong, acuminate, acutish at the base, cori-
ceous, pubescent on the veins beneath; panicle terminal, decus-
sate, densely clothed with tomentum; flowers much crowded.
τ. S. Native of Java, in the province of Cheribon, in woods
on the mountains of Tjeri, where it is called Kissamang-

Tooth-flowed Wendlandia. Tree.

10 W. cine’rea (D. C. prod. 4. p. 412.) arboreous; the
upper parts clothed with ash-coloured dense tomentum; leaves
lanceolate, petiolate, villous above and tomentose beneath;
stipulas recurved at the apex; panicles terminal, much branched,
tomentose; flowers in dense fascicles; corolla with a very short
tube. τ. S. Native of the valley of Nipal, at Bunipa, and
at Bheempedi; as also from Noakote and Shrengaur; and it
is called in the Newar language Gokhina. Rondeletia cine’
èra, Wall. in Roxb. fl. ind. 2. p. 141. Branches quadrangular,
with rounded corners. Leaves 4-6 inches long, smooth above,
glau
cous beneath. Stipulas reniform, emarginate. Bracteas oblong,
caducous, sometimes lobed or sub-hastate at the base. the
lowermost ones very long, linear. Flowers numerous, small,
white. Teeth of calyx small, triangular. Segments of corolla
spreading; throat furnished with 5 tubeckes. Capsule glo-
bulous, villous. The wood is brownish, close-grained, and seems
well adapted for furniture.

Grey Wendlandia. Tree. 12 to 14 feet.

11 W. luzónie’nsis (D. C. l. c.) branches, pedi
eto
nerves of leaves hairy; leaves oval-oblong, acuminate at both ends; stipulas semi-orbicular, obtuse, permanent, coriaceous; panicle much branched, many-flowered, rather villous; anthers hardly exerted; stigma bifid. S. Native of the island of Luzon. Wendlandîa multiflora, Bartl. in herb. Hænke. Allied to R. pubêrula. Fruit hardly larger than turnip seed. Flowers small, white.

Luzon Wendlandia. Tree.
12 W. coriaceâ (D. C. l. c.) arboreous, smooth in every part; leaves oblong-lanceolate, acuminate, tapering at the base, petiolar, coriaceous, shining; stipulas broad, short, rounded, ending each in a cuspitate point; panicles dense, terminal, many-flowered; flowers opposite, very numerous. S. Native of Nipaul, in the valley, very common in the forest of Thoka, and other places; and from Nombok. The tree is called Kōngéa in the Parbutteyan language, and Julū in that of Newar. Rondélâta coriaceà, Wall. in Roxb. fl. ind. 2. p. 142. C. Don, fl. nep. p. 138. Leaves 5-7 inches long. Flowers white, fragrant. Bracteas lanceolate, coriaceous, those of the flowers capillary. Corolla with a cylindrical tube, and a spreading border. The inhabitants of Nipaul use the wood of this tree for various purposes, such as rafters, tools, &c.: it is close-grained, and becomes of a brownish colour soon after being cut, not unlike mahogany. A red dye is likewise prepared from it. The leaves and flowers attain sometimes a bluish colour on being dried.

Coriaceous-leaved Wendlandia. Tree 10 to 12 feet.
13 W. purêrea (D. C. l. c.) branches, petioles, nerves of leaves underinch, and panicles hairy; leaves petiolar, oval-oblong, acute at both ends, glabrous above; stipulas adpressed, broad at the base, cuspitate at the apex; panicle terminal, branched, many-flowered; corollas glabrous; stigma clavate. S. Native of Nipaul. Allied to W. pändula, but differs in the stipules being 4 times shorter, in the corolla being glabrous, &c.

Puberulous Wendlandia. Tree.
14 W. pändula (D. C. l. c.) fruticos; branches pendulous; leaves lanceolate-ovate, acuminate, smooth above and rough underinch; stipulas lanceolate, adpressed, deciduous, rather shorter than the petioles; corysts terminal, oblong, pinnate; tube of corolla filiform, smooth, without and pubescent within; segments of corolla recurved. S. Native of Nipaul, between Hetaunra and Rheempe, also on Sheepope. Rondélâta pändula, Wall. in Roxb. fl. ind. 2. p. 140. A very elegant shrub. Branches obscurely quadrangular; new shoots downy. Leaves 3-5 inches long, and disposed 3 in a whorl on the robust shoots. Peduncles villous. Flowers fuscicled, green, fragrant. Stigma clavate.

Pendulous-branched Wendlandia. Shrub 5 to 6 feet.
15 W. malaya'na; branches somewhat tetragonal; leaves elliptic-lanceolate, acuminate, downy on the nerves, tapering to the base, membranous; stipulas broad; calyx with a roundish tube and a 5-cleft border; corolla with a very slender tube, and a spreading border; panicles terminal, coriaceous, hardly longer than the petioles. S. Native of the Malay islands. Anderósââmne Malayâna, Wall. cat. no. 6282.

Malay Wendlandia. Shrub or tree.
16 W. longi'otia (D. C. l. c.) fruticos; epidermis falling from the branches; leaves elliptic-oblong, acuminate, tapering at the base, villous underinch; stipulas lanceolate, erect, acute, often bidentate, furnished within their broad base with a series of subulate glands; panicle many times trichotomous, downy; calyx downy, with a yellow gland on each margin of the segments, and sometimes at the points; bracteas villous, glandular. S. Native of Silhet; and of Nipaul, on Chundagir, Nogurjoon, and at the foot of Sheepore near Thoka. The Bengalee name of the plant is Soopari. Rondéâlêta longifólia Wall. in Roxb. fl. ind. 2. p. 137. D. Don, prod. fl. nep. p. 138. Anderósââmne longifólia, Wall. cat. no. 6280. Leaves 6-14 inches long, dark green above. Bracteas with an entire or 3-lobed base, their margins marked with yellow subulate fleshy glands. Flowers large, fleshy, yellow, scentless, with a valvate aestivation. Segments of corolla spreading. Stamens inserted in the bottom of the tube. Capsules round, smooth. All the species of this genus vary considerably in the size of the leaves, the degree of their pubescence, and in their inftorescence, which renders their specific discrimination difficult.

Long-leaved Wendlandia. Shrub.

** ** African species, not sufficiently known.
17 W. sulca'na; leaves oblong-lanceolate, acuminate, glabrous, on short petioles; stipulas sheath-formed, supra-follicose; racemes panicked, terminal; capsule round, sulate. S. Native of Sierra Leone, in woods on the margins of rivers. Shrub branched.

Furrowed-fruited Wendlandia. Shrub 5 to 6 feet.
18 W. fiolo'sa; leaves broad, ovate-lanceolate, acuminate, coriaceous, of the base, almost sessile; stipulas large, sheath-formed, supra-follicose, and as are well as the leaves pilose; racemes panicked, terminal; capsules ovate. S. Native of Sierra Leone, in woods on the banks of rivulets.

Hairy Wendlandia. Shrub 5 to 6 feet.
19 W. racemo'ssa; glabrous in every part; leaves elliptic, very long, acuminate, coriaceous, on short petioles; stipulas large, sheath-formed, supra-follicose; racemes panicked, terminal; capsules ovate. S. Native of Sierra Leone, on the edges of woods. A branched twiggy shrub. Stamens 5, longer than the corolla. Capsule 1-celled, many-seeded. Corolla funnel-shaped.

Twiggey Wendlandia. Shrub.

§ 2. Tetramére (from tetra, tetras, by fours, and meris, a part; in reference to the flowers being tetramerous). D. C. prod. 4. p. 412. Limb of calyx and corolla 4-lobed. Stamens 4.—Doubtful species.

21 W. spica'na (D. C. prod. 4. p. 419.) leaves elliptic, tapering downwards, villous, as well as the panicle; stipulas oblong, acute, smooth, except the elevated rib, which is villous; panicle large, terminal, almost sessile, with opposite compressed peduncles: the secondary divisions of the peduncle dichotomous, terminating in cylindrical slender, twin, or ternate spikes, which are 2 inches long; flowers disposed in one row along one side of the rachis of the spike; corolla pubescent, with a slender tube, widening at the apex; stigma of 2 recurved lobes. S. Native of Pulo-Penang. Rondélâta spicà, Wall. in Roxb. fl. ind. 2. p. 139. Leaves 6-12 inches long. Bracteas lanceolate, sub-bastate, acute. Flowers small. Capsule small, round, villous. Seeds angular. Inflorescence like that of Tournefôrîé. Perhaps a proper genus.

Spicate-flowered Wendlandia. Shrub or tree.

Tetrandrous-flowered Wendlandia. Shrub.
Rubiaceae. LXV. Wendlandia. LXVI. Xanthophyllum. LXVII. Carphæa. LXVIII. Sipanea.

23 W. ? corymbosa (D. C. prod. 4, p. 413.) leaves obovate-lanceolate; peduncles for the most part terminal, dichotomously corymbose; flowers unilateral, tetrandrous. S. Native of Pulo-Penang. Rondelétia corymbosa, Jack, in mal. misc. 1. no. 1. p. 4. Corolla white, tinged with red. Perhaps a separate genus.

Corymbosa-flowered Wendlandia. Tree.

24 W. Wrightiana (Wall. cat. no. 6277.) young branches downy; leaves obovate-oblong, rather acuminate at the apex, tapering much to the base, glabrous; panicles trichotomous; flowers small, sessile, tetrandrous, disposed in a single row, on the upper side of the branches of the panicle. S. Native of the East Indies. Tournefortia, herb. Wight. Leaves 1 to 1½ foot long. Stipulas broad, membranous. Very like W. corymbosa.

Wright's Wendlandia. Shrub or tree.

25 W. ? Lawsoniæ (D. C. l. c.) sub-arborescent; branchlets quadrangular; leaves lanceolate, acuminate, glabrous; corymb terminal, trichotomous; fruit oblong. S. Native of Malabar. Poutelaetsje, Rhed. mal. 4. t. 57. Petèòsia species, ex Juss. Ligtstrum species, ex Comm. Lawsonis purpurea, Lam. dict. 3. p. 197. Barsoti, ancre encyl., where the fruit is said to be baccate, but in the figure the fruit is drawn capsular and many-seeded, it is therefore more likely to be a species of Wendlandia than Petèòsia.

Lawson's Wendlandia. Tree.

† A species hardly known.

26 W. ? scædens: shrubby, scandent, smooth; leaves opposite, petiolate, oblong, entire; panicles axillary, small, branched; capsules globular; seeds small, numerous. S. Native of the Mauritius. Rondelétia scædens, Roxb. fl. ind. 2. p. 187.


LXV. XANTHOPHYLLUM (from xanthos, xanthos, yellow, and phos, phytos, a plant; so called from the first species being clothed with rufous villi). Blum. bijdr. p. 989. A. Rich. mem. soc. hist. nat. par. 5. p. 275. D. C. prod. 4. p. 413.

Lin. syst. Tetra-Pentandria, Monegogia. Calyx with an ovate tube and a 4-5-cleft limb. Corolla funnel-shaped, with a short tube, a villous throat, and a 4-5-cleft limb. Stamens 4-5, exerted; filaments inserted in the throat, connivent. Style sub-clavate, perforating the disk of the ovarium; stigma thick, 2-lobed, in the throat. Drupe dideymous, crowned by the calyx, divisible into 2 many-seeded parts or cells. Placentae prominent, fixed to the middle dissepiment on both sides. Seeds minute, angular, wingless.—This genus is nearly allied to Wendlandia, but differs in the fruit not being dehiscence.

1 X. fruticulosem (Reinw. in Blum. bijdr. p. 989.) suffruticose, clothed with rufous villi; leaves oblong-lanceolate; stipules bifid; peduncles axillary, trichotomous, many-flowered. S. Native of the islands of Java and Nusa-Kambanga, on the mountains, among bushes. Branches, peduncles, calyces, and lower surfaces of leaves clothed with adpressed rufous silky villi. Stipulas large, deciduous.

Shrubby Xanthophyllum. Shrub.

2 X. spicatum (Blum. in litt ex D. C. prod. 4. p. 413.) suffruticose, glabrous, erect; leaves oblong, acuminated at both ends; spikes axillary and terminal, nutant; flowers in heaps. S. Native of Java, especially on calcareous mountains. Chicoceca spicata, Blum. bijdr. p. 958. Berries small, indehiscent, dry, didymous, striated. Seeds small, not winged. Stipulas twin on both sides, subulate at the apex, combined into a short sheath at the base. Spikes slender, elongated.

Spicate-flowered Xanthophyllum. Shrub.

Cult. For culture and propagation see Rondelétia, p. 517.


Lin. syst. Tetrandria, Monogynia. Calyx with a turbinate tube, and a 4-parted limb; lobes large, ovate-oblong, rather spatulate, scarious, permanent. Corolla with a long filiform tube, a ventricose throat, which is hairy inside, and a 4-parted limb; lobes oblong, acute. Anthers almost sessile, inclosed, oblong. Stigma 1 (ex Juss.), but slender and bifid according to Lamark's figure. Capsule crowned by the calyx, 2-celled, dehiscing at the cells: valves semi-septiferous. Seeds many in each cell.—A dry stiff shrub, with the habit of Serissa, and leaves like those of hyssop. Leaves sessile, linear, acute. Stipulas unknown. Flowers terminal (ex Lam.) capitate (ex Juss.); corymbose.—It is doubtful which place this genus should occupy in the order, both the seeds and stipulas being unknown.


Madagascar Carphæa. Shrub.

Cult. For culture and propagation see Rondelétia, p. 517.


Lin. syst. Pentandria, Monogynia. Calyx with a turbinate tube, and a 5-parted limb; lobes lanceolate-subulate, permanent. Corolla with a terete tube, about 3 times longer than the lobes of the calyx, a bearded throat, and a 5-parted limb; segments ovate. Anthers 5, sessile, inclosed. Stigma bifid, acute. Capsule almost glabrous, crowned by the calyx, 2-celled, dehiscing at the cells into 2 valves. Placentas central, rather fleshy. Seeds very numerous, wingless, very minutely tuberculated.—Annual green herbs. Leaves ovate. Stipulas linear, acuminate, solitary on both sides. Flowers axillary and terminal.—This genus is nearly allied to Rondelétia.

1 S. fraterennis (Aubl. guian. 1. p. 147. t. 56.) stems creeping at the base; leaves ovate-lanceolate, rather scabrous, ciliated at the base; flowers sessile, almost terminal, sub-corymbose. S. Native of Cayenne. Poir. dict. 7. p. 199. Cham. et Schlcht. ex Linn. 4. p. 166. with a good description. Viréta fraterennis, Vahl. elog. amer. 2. p. 11. Corolla rose-coloured, with a bearded throat. Stem rather villous. The plant is used in Guiana in astringent ptisans, and in the cure of gonorrhoea; and a decoction of it is used to wash ulcers and other sores.

Field Sipanea. Pl. creeping, 2 feet.

2 S. dichotomata (H. B. et Kunth, nov. gen. amer. 3. p. 397.) stem tetragonal; leaves lanceolate, clothed with silky villi on both surfaces; panicle terminal, dichotomous. S. Native of South America, in humid places near Atures, at the cataract of the Orinoco. Corolla rose coloured, pilose on the outside, with a bearded throat. Viréta dichotomata, Spreng. syst. 1. p. 702. Pycnochēa dichotomata. Wildl. harb. ex Cham. et Schlcht. in Linneæa. 4. p. 166. Stem villous, branched.

Dichotomous Sipanea. Pl. 2 to 3 feet.
LXIX. VirecTa (from viréctum, a green place; from the agreeable greenness of the leaves). D. C. prod. 4. p. 414.—VirecTa species, Smith, but not of Lin. fil.—Sipánea species, A. Rich.?—Phyteumoides, Smeathm., in herb. L’Her.

Lin. syst. Pentandria, Monogyúnia. Calyx with an ovate short tube, and 5 linear-setaceous lobes. Corolla funnel-shaped, with an obconical tube, about equal in length to the lobes of the calyx, a naked throat, and 5 linear-oblong ciliated lobes. Stamens 5: having the filaments much exserted beyond the throat; anthers linear, oscillatory, bifid at the base. Style filiform, equal in length to the stamens. Stigma hardly thickened, undivided. Capsule globose, crowned by the calyceal lobes in the young state, but almost naked in the adult state, 2-celled, and at length dehiscing at the cells. Seeds innumerable, 4-5-sided, and a little muricate.—Hairv hairs, with opposite branches. Leaflets opposite, ovate-oblong. Stipulas twin on each side, lanceolate. Flowers white or yellow, disposed in dense cymose corymb.—Branchlets of cyme elongated after flowering.—This genus is nearly allied to Sipánea, but differs in the genitals being exserted; it differs also from Hydrópis in the quinary number of the floral parts, and in the exserted stamens, &c.

1 V. múlsfíora (Smith, in Rees’s cycl. no. 4.) stem erect; leaves ovate-lanceolate, almost sessile.—Native of Sierra Leone, where it was collected by Smeathm. Phyteumoides hirsutum, Smeathm. in herb. L’Her. Perhaps Sipánea angustífolia, A. Rich. mem. soc. hist. nat. par. 5. p. 276. is the same as the present plant. Flowers white.

Many-flowered VirecTa. Pl. 2 to 3 feet.

2 V. procúmbens (Smith, 1. c. no. 2.) stem procumbent; leaves ovate, 3 times longer than the petioles. ¼ S. Native of Sierra Leone.

Procumbent VirecTa. Pl. procumbent.

3 V. lu’trea; leaves ovate-lanceolate, acuminate, hairy; pedicles aggregate, axillary; calyx-5-toothed; corolla tubular, 5-cleft, hairy. ½ S. Native of Sierra Leone, in cultivated places. Flowers yellow. Habit of Lithospermum. Perhaps the same as V. procúmbens.

Yellow-flowered VirecTa. Pl. rambling.

4 V. elátior (D. C. prod. 4. p. 415.) leaves oval-lanceolate, rounded at the base and abruptly petiolate, acute at the apex, smoothish; flowers terminal, almost aggregate; calyce segments very unequal, smoothish; tube of corolla very long. ¼ S. Native of Angola, in south-western Africa. Sipánea elátrí, A. Rich. mem. soc. hist. nat. par. 5. p. 276.

Taller VirecTa. Pl.

5 V. pánícula; suffrúticose, branched, clothed with brown or copper-coloured hairs; leaves ovate-lanceolate; corymb pinnate, axillary, and terminal. ½ S. Native of Sierra Leone, on the mountains. Flowers small, greenish. Pánicled-flowered VirecTa. Shrub.

Cult. For culture and propagation see Sipánea above.


Lin. syst. Pentandría, Monogyúnia. Calyx with a short turbinate tube, which is adnate to the ovary at the base, and a 5-cleft permanent limb. Corolla tubularly funnel-shaped, 3-times longer than the limb of the calyx, hairy inside; with 5 ovate segments. Stamens 5, inclosed. Style filiform, girded by an urceolus at the base; stigma 2-lobed, shorter than the corolla. Capsule broad, compressed, 2-lobed, almost mitre-formed, crowned by the calyceal teeth, internally divided into 2 cells by a transverse partition, opening between the remains of the 2 fleshly nectareal lips, or by a transverse chink round the apex. Seeds numerous, small, hexagonal. Embryo straight, slender, in fleshy or rather horny albumen.—Dwarf perennial herbs, natives of the East Indies. Leaves opposite, petiolate, membranous, those opposite each other often unequal in size. Stipulas twin on each side, small. Peduncles axillary and terminal, solitary, cymose at the apex, with sub-umbellate branches. Flowers disposed along the branches of the peduncles in a single unilateral row.

1 O. múnógos (Lin. amen. 2. p. 117. spec. 213. mat. med. 27. with a bad figure, but not of Burm.) suffrúticose; leaves elliptic-lanceolate, acuminate at both ends, glabrous, papery; stipulas small, truncate; cymes pedunculate, terminal, branched; tube of corolla short, funnel-shaped. 2 S. Native of Java, Ceylon, Sumatra, Pulo Penang, &c. Blum. bijdr. p. 976. Roxb. fl. ind. 2. p. 544. Gaertn. fr. 1. t. 55. A. Rich. l. c. t. 2. Radix. Mungo. Kempf. amen. 573 and 577. Stipulas a slight connecting membrane. Nectary a 2-lobed terminal body, surrounding the base of the style. Flowers white. The root is very bitter, and is celebrated as an alyxeteric, the trunk of which is horizontal, and the fibres perpendicular. The plant is called in Ceylon Ekanwerya and Naghavanáli, from nagha, the ribbon-snake, for the bite of which it is accounted a specific.


2 O. brácteolá (Wall. cat. no. 6228.) stem ascending, villous above, simple, or a little branched; leaves unequal in size in each pair, as is the case in most of the species; stipulas ensiform, pubescent; common peduncles slender, villous, from 3-5 inches long. ½ S. Native of the valley of Nipaí, in dark moist situations.

Brácteolate Snake-root. Pl. 1 foot.

3 O. oblóntifóllia (D. C. prod. 4. p. 415.) suffrúticose, downy at the apex as well as on the peduncles; leaves oblong, bluntish, attenuated at the base, glabrous above, pale and rather velvety beneath; stipulas small, triangular, acute; cymes pedunculate, branched; tube of corolla short. ½ ?. 2 ?. S.
Native of the Island of Luzon, one of the Philippines. O. Mungos, Barth. in herb. Häkne. Herb hardly a hand high, erect, suffruticose at the base, and throwing out a few roots from the lower part.

Oblong-leaved Snake-root. Shrub 1/2 foot.

4 O. villosa (Roxb. fl. ind. 2. p. 546.) stem suffruticose; erect, villous; leaves ovate-oblong or lanceolate, villous on the veins beneath; stipulas ensiform, villous; cymes or corylombs terminal, on long peduncles, villous; corolla funnel-shaped. 2. S. Native of Chittagong and Silhet, on the hills in shaded moist places. O. Mungos, Gaertn. fruc. 1. p. 264. t. 55.? ex Roxb. Corollas almost globular, with numerous white almost sessile flowers, and recurved branches. Urceolus bilabiate, surrounding the base of the style. Capsule opening round the apex.

Villos Snake-root. Pl. 3/4 foot.

5 O. argentea (Wall. cat. no. 6229.) suffruticose; stem hispid; leaves ovate, acuminate, tapering at the base, glabrous, green above and white beneath; peduncles axillary and terminal, trichomatous at the apex; tube of corolla longer than in O. villosa. 2. S. Native of Java, and Mount Tjerimai. Allied to O. Mungos, but differs in the flowers being larger and in the stipulas being subulate at the apex.

Marginate-leaved Snake-root. Pl. 1/2 to 1 foot.

6 O. marginita (Blum. bijdr. p. 976.) stem suffruticose, erect; leaves lanceolate, acuminate at both ends, glabrous, except the margins, which are scabrous; stipulas semi-lanceolate, small, acuminate; cymes or corylombs pedunculate, terminal, almost trifid; corolla funnel-shaped, with an angular tube. 2. S. Native of Java, on Mount Tjerimai. Allied to O. Mungos, but differs in the flowers being larger and in the stipulas being subulate at the apex.

Fasciculate-leaved Snake-root. Pl. 1/2 to 1 foot.

7 O. fasciculata (D. Don, prod. fl. nep. p. 136.) stem suffruticose, erect; leaves elliptic, acuminate, glabrous above and downy beneath; flowers in terminal fascicles; calyce segments ovate, acute. 2. S. Native of Nipal, in moist shaded places, near Suembo. Virécta fasciculata, and O. suffruticosa, Hamilt. mss. Differs from O. Mungos in the leaves being downy beneath, and in the flowers being in terminal fascicles.

Fasciculated-flowered Snake-root. Pl. 1/2 foot.

8 O. rugosa (Wall. in Roxb. fl. ind. 2. p. 547.) stems herbaceous, creeping at the base, and ascending at the apex, villous; leaves elliptic-lanceolate, attenuated at both ends, shining, rugose and rather scabrous above, paler beneath and rather downy along the veins; stipulas semi-lanceolate, acuminate; cymes or terminal corylombs pedunculate, bipid or trifid, equaling the uppermost pair of leaves. 2. S. Native of Nipal, in forests, on Shivaapoor and other high mountains near the valley; and of Java, on Mount Gede in woods. Blum. bijdr. p. 976. Root consisting of a number of long pink-coloured fibres. Petioles villous. Peduncles furnished with 2 subulate bracteas about the middle, villous. Flowers white, downy; twin, one sessile, and the other pedicellate. Urceolus 2-lobed.

Wrinkled-leaved Ophiorhiza. Pl. 1/2 to 2 feet.

9 O. discolor (R. Br. in Wall. cat. no. 6223.) leaves elliptic-oblong, much acuminate, tapering to the base, glabrous, green above, and reddish beneath; stems and peduncles downy; peduncles terminal, corylombose, trichomatously branched. 2. S. Native of Penang. O. Mungos, Wall. in Roxb. fl. ind. 2. p. 547. O. ourybiosa, Hamilt. herb.

Discoloured-leaved Snake-root. Shrub 1 to 2 feet.

10 O. canescens (Blum. bijdr. p. 977.) stems herbaceous; leaves orbicular-lanceolate, attenuated at both ends, whitish beneath, and rather downy along the veins; stipulas broad, short, subulate at the apex; cymes on short peduncles, terminal, and axillary, naked, usually quadridif; stamens about equal in length to the tube of the corolla. 2. S. Native of Java, on the mountains of Seribu, in shady places. Allied to O. rugosa, but is distinguished from it in the cymes being naked.

Canescens Snake-root. Pl. 1/2 to 1 foot.

11 O. trichocarpa (Blum. bijdr. p. 977.) stems herbaceous, tomentose; leaves on short petioles, ovate-lanceolate, acute, rather downy on the veins beneath; peduncles downy; stipulas subulate; cymes pedunculate, axillary, and terminal, dichotomous. 2. H. Native of the islands of Java and Nusa-Kambanga. Said to be nearly allied to O. villosa.

Hairy-fruited Snake-root. Pl. 3/4 to 1 foot.

12 O. longiflora (Blum. bijdr. p. 977.) stem suffruticose; leaves orbicular-lanceolate, acuminate at both ends, hairy beneath; stipulas semi-lanceolate, acuminate; cymes pedunculate, terminal, loose-flowered; tube of corolla very long, velvety. 2. S. Native of Java, on Mount Gede, in woods near the top.

Long-flowered Snake-root. Shrub 1/2 to 1 foot.

13 O. sanguinea (Blum. bijdr. p. 977.) stems herbaceous; leaves ovate or elliptic-lanceolate, acuminate, rather oblique at the base, glabrous; stipulas foliaceous, ovate-oblong, bifid; cymes pedunculate, terminal. 2. S. Native of Java, on the mountains in shady places. Leaves reticulately veined in the dry state; the veins blood-coloured.

Bilaceous leaved Snake-root. Pl. 1/2 to 1 foot.

14 O. neglecta (Blum. herb. ex D. C. prod. 4. p. 416.) stems herbaceous, erect, dark purple, glabrous; leaves orbicular-lanceolate, acuminate, pale beneath; peduncles axillary, clothed with rusty down; cymes bifid or quadridif, having the branches elongated. 2. S. Native of Java. Nerves of leaves puberulous beneath. Stipulas deciduous.

Neglected Snake-root. Pl. 1/2 to 1 foot.

15 O. quadrifida (Blum. bijdr. p. 977.) stems herbaceous; leaves ovate or oblong, acute at both ends, smooth, with simple veins; stipulas linear, obtuse; cymes pedunculate, axillary, and terminal, usually quadridif. 2. S. Native of Java, in shady mountain woods.

Quadridif-cymed Snake-root. Pl. 1/2 to 1 foot.

16 O. japonica (Blum. bijdr. p. 977.) stems herbaceous, radiate, leaves ovate or orbicular-lanceolate, roughish above, and downy on the veins beneath; cymes terminal, pedunculate, dichotomous; corolla funnel-shaped, with a very long tube, and having the segments hairy inside. 2. G. Native of Japan, where it was collected by Siebold.

Japan Snake-root. Pl. 3/4 foot.

17 O. prostrata (D. Don, prod. fl. nep. p. 136.) stems prostrate, radiate, downy; leaves ovate or elliptic, rough above, and downy beneath; calyce segments oblong. 2. G. Native of Nipal, at Narainhetty. Virécta prostrata, Hamilt. mss. Differs from O. Mungo in the plant being smaller, and more pubescent, and in the stems being radiant.

Prostrate Snake-root. Pl. prostrate.

18 O. tomentosa (Jack, in Roxb. fl. ind. 2. p. 546.) the whole plant is clothed with very soft villi; stem herbaceous, erect, branched; leaves lanceolate-oblong, finely acuminate, on longish petioles, villous and hoary underneath, with reddish veins; stipulas subulate; cymes pedunculate, terminal. 2. S. Native of the islands of Pulo-Penang and Sumatra, on the hills. Stem reddish. Petioles villous. Flowers almost sessile. Peduncles and cymes tomentose. Corollas white. Urceolus bilabiate, glandular. Very like O. bracteolata.

Tomentos Snake-root. Pl. 1 foot.

19 O. erubescens (Wall. cat. no. 6223.) stems clothed with rusty down at the top; leaves elliptic-lanceolate, acuminate, tapering at the base, glabrous above, and downy beneath; stipulas broad at the base, and cuspidate at the apex; flowers ter-
minal, coriodybose. ½ S. Native of the East Indies, at Cheppadong.

Reddish Snake-root. Shrub 1 foot.

20 O. hispidula (Wall. cat. no. 6234,) stem and pedioles downy; leaves elliptic, tapering to both ends; peduncles terminal, downy, coriodybose, dichotomously branched; capsules downy. ½ S. Native of the East Indies, at Tavoy.

Hispid Snake-root. Shrub ½ to ¾ foot.

21 O. heterophylla (Jack, mal. misc. 2. no. 7. p. 85. Wall. in Roxb. fl. ind. 2. p. 547.) stem erect, tomentose; leaves roundish-ovate, those opposite each other very unequal in size; cymes small, terminal. ½ S. Native of Sumatra, in the interior of the island. Leaves with a bluish acumen, smooth, pale, and whitish beneath. Capsules compressed, obcordate.

Variable-leaved Snake-root. Pl. ½ to 1 foot.

22 O. acuminata (D. C. prod. 4. p. 416.) stem suffruticose, clothed with rufulus velvety down above, as well as the pedioles; leaves lanceolate, acuminate, glabrous, velvety on the nerves beneath; stipulas broad at the base, and armed by a bristle at the apex; cymes pedunculate, of 5 velvety branches. ½ S. Native of the island of Luzon, at Sorzagon. O. subumbellata, Bartl. in herb. Haenke. Perhaps the same as O. subumbellata, Forst.

Aecinated-leaved Snake-root. Shrub.

23 O. Richardsonii (Gaud. in Freyc. voy. p. 473. t. 97.) plant suffruticose, quite glabrous; leaves oblong, much acuminate at both ends, petiolate, with smooth margins; cyme terminal, on short peduncles, trifid or quadridif; tube of corolla short; calyce teeth very short. ½ S. Native of the Moluccas.

Richard's Snake-root. Shrub ½ to 3 feet.

24 O. perpusilla (Blum. herb. ex D. C. prod. 4. p. 417.) stem erect, dwarf, simple; leaves elliptic, glabrous; flower terminal, solitary, nutant, on a short pedicel; corolla funnel-shaped, glabrous; calyce teeth obtuse. ½ S. Native of Java. Herb hardly an inch long. Fruit unknown.

Smallest Snake-root. Pl. 1 inch.

25 O. Harrisii (Heyne, ex Wall. cat. no. 6236.) stem, petioles, peduncles, and nerves of leaves on the under side downy; leaves ovate or roundish-ovate, acutish, glabrous and green above, and pale beneath; peduncles terminal, coriodybose, and dichotomously branched at the apex. ½ S. Native of the East Indies. Root creeping much.

Harrison's Snake-root. Pl. ½ to 1 foot.

26 O. ? geminata (Wall. cat. no. 6237.) stem, petioles, peduncles, and nerves of leaves on the under surface of the leaves, downy; leaves large, obovate-oblong, tapering much at the base, and running down the petioles, and acute at the apex, glabrous and green above, but pale or reddish beneath; peduncles long, terminal, racemose. ½ S. Native of the East Indies, in Silhet and Gualpara. Dentella geminata, Herb. Ham. Root creeping. Stem dwarf. Racemes numerous, crowded, secund, alternate, short, recurved on each peduncle. Perhaps a proper genus.

Twin Snake-root. Pl. ½ to 1 foot.

+ A doubtful species.

27 O. ? subumbellata (Forst. prod. no. 66.) stem shrubby; leaves lanceolate, acute; umbels axillary, trifid. ½ S. Native of the island of Otahibi.

Subumbellata-flowered Snake-root. Shrub.

Cult. The species of Snake-root will grow in a mixture of loam, sand, and peat; and they may either be increased by cuttings under a hand-glass in heat, or by seeds.

LXXI. ARGOSTEMMA (from argos, white, and στεμμα, stemma, a crown; in reference to the terminal racemes or umbels of snow white flowers). Wall. in Roxb. fl. ind. 2. p. 324. Blum. mss. ex D. C. prod. 4. p. 417. — Pomångium, Reinw. ex Blum.

Linc. syst. Tri-Pentándria, Monogónia. Calyx with a short obconical tube, and a 3-4-5-cleft limb: lobes acute, valvate in aestivation. Corolla rotate, spreading, with a 5-5, rarely with a 3-4-parted limb. Stamens alternating with the lobes of the corolla. Anthers large, exserted, cohering at the apex. Style perforating a flabby disk; stigma globosa. Capsule crowned by the calyx and an opercular disk, 2-celled, dehiscing in a radiant manner at the apex; receptacles convex, adnate to the dissepiment. Seeds numerous, angular. — Herbs, for the most part hairy from short down. Leaves quite entire, opposite, one usually smaller than the other, rarely verticillate. Stipulas foliaceous, ovate, solitary on both sides. Peduncles terminal, and almost axillary, bearing fascicled umbels of flowers at the apex, very rarely only one flower. Flowers white. The species of this genus have the habit of those of Ophiorhiza.

1 A. sarmentoso-sum (Wall. in Roxb. fl. ind. 2. p. 324.) plant rather villous, creeping at the base, and atolloniferous, the upper part of the stem erect; leaves ovate, obtuse, almost sessile, downy above, and villous on the nerves beneath, in two approximate pairs; flowers 3 or 4-parted, disposed in a terminal umbel or corymb-formed raceme. ½ S. Native of the East Indies, on rocks on the hills at Schukragiri, near Rujmahal; and of Nipal, on the mountains to the northward of the valley on the route to Gosaingstlan. Stem and leaves rather pubescent. Snow white flower. Corolla 5 times longer than the calyx. Leaves at end of stem.

Sarmentoso Argostemma. Pl. ½ foot.

2 A. verticillatum (Wall. l. c. p. 325.) plant erect, downy, and tufted; leaves 4 in a whorl, linear-lanceolate, rather falcate; peduncles 2-3, rarely solitary, bearing a few umbelate flowers each; flowers 4-5-parted. ½ S. Native of Nipal, on rocks at Moreko in the valley. Root fleshy, and almost tuberous. Stems furnished with a pair or two of lanceolate connate scales. Leaves ciliolate. Flowers snow white, rather smaller than those of the preceding species. The mouth of the corolla is marked with 10 minute tubercles, alternately receiving the basis of the filaments. Ovarium smooth. Wall. pl. rar. asiat. 2. p. 80. t. 185.

Whorled-leaved Argostemma. Pl. 4 inches.

3 A. rostratum (Wall. l. c. p. 326.) plant erect, smooth; leaves in 2-4 approximate pairs, narrow-lanceolate, acuminate, petiolate; stipulas ovate, recurved, permanent; umbels pedunculate, terminal, many flowered; segments of corolla and tube of the anthers acuminate. ½ S. Native of the East Indies, on the Pundua mountains near Silhet. Stem furnished with several remote pairs of lanceolate-ciliated stipulas: the upper ones becoming enlarged and foliaceous. Pedicles an inch long, clavate, a little ventricose above the middle. Corollas white, nearly an inch in diameter. Habit of Trientalis Europae'a.

Beaked-anthered Argostemma. Pl. ½ to ¾ foot.

4 A. frutetum (Wall. l. c. p. 327.) plant glabrous; stem short; leaves smooth, ovate, subcordate, painted with reticulated white nerves, on very short petioles; umbels terminal, pedunculate, many flowered; flowers pentandrous. ½ S. Native of Pulo-Penang, growing on rocks near the water-fall. Leaves only 2, or in 2 remote pairs, slightly ciliolate. Peduncle simple, or having 2 opposite branches, each bearing a round umbel of many small flowers. Unripe berry as large as a coriander seed, smooth.

Painted-leaved Argostemma. Pl. 1 to 2 inches.

5 A. borraginæum (Blum. mss. ex D. C. prod. 4. p. 417.) stem creeping at the base, but erect above, and sebaceous at the apex; leaves elliptic, acute at both ends, petiolate, with a few 3 x 2
scattered hairs above, but more crowded on the nerves beneath, and on the petioles; umbels pedunculate, terminal, subtrifid; flowers pentameric, at length secund. 0. S. Native of Java, in mountain woods in humid places. Stem 4-6 inches long. Leaves 4-6 long along each stem.

Borrago-like Argostemma. Pl. ½ foot.

6. A. mantaum (Blum. ms. ex D. C. prod. 4. p. 418.) stem torpently hairy, ascending; leaves ovate, acuminate, ciliated, petiolate, and with scattered hairs above, and with bristle-like hairs on the nerves beneath; umbel terminal, pedunculate, bracteate, 5-6-flowered.—Native of Java. Pomáigüion mantaum, Blum. ms. Stem branched a little, 3-4 inches long. Leaves 10-12 on each stem, disposed in nearly equal distant pairs. Peduncles hardly longer than the leaves.

Mountain Argostemma. Pl. ½ foot.

7. A. synfolium (Blum. ms. ex D. C. prod. 4. p. 418.) stem creeping at the bottom, but branched, and rather scabrous above; leaves petiolate, ovate, acute, tapering a little at the base, hairy; umbels pedunculate, shorter than the leaves, terminal, subtrifid, few-flowered. ½. S. Native of Java, on Mount Salak in shady places. Leaves 16-20 on each plant, membranous, pale beneath. Flowers white, smaller than those of the preceding species.

Few-flowered Argostemma. Pl. ½ foot.

8. A. unifolium (Blum. ms. ex D. C. prod. 4. p. 418.) stem creeping below, clothed with hairy pubescence; leaves opposite, very unequal, one of which in each pair hardly exceeds a stipula in size, the other is lanceolate, with an unequal base, rather pilose; peduncle terminal, 1-flowered. 0. S. Native of Java, in woods on the higher mountains.

One-flowered Argostemma. Pl. creeping.

Cult. For culture and propagation, see Ophiophora, p. 523.

The species are all remarkable in their appearance.

LXXII. SPIRADICLUS (from σπείρα, speira, a spire, and δυλικός, diclis, valves with folding doors; in allusion to the valves being divided into 2 parts, and also twisted at the apex). Blum. bijdr. p. 975. D. C. prod. 4. p. 418.

Lin. syst. Pentändria, Monogynia. Calyx with an oblong tubinate tube, and a 5-toothed limb. Corolla with a short tube, and a 5-parted spreading limb. Stamens 5, inclosed. Style girded by 4 glands; stigma 2 lobed in the throat. Capsule oblong, crowned by the calyx, 2-celled, 2-valved; valves bipartite, at length twisted. Seeds numerous, angular.—This genus is nearly allied to Tula, with the tufted habit of Nertèra. Leaves opposite, ovate, rather undulated, glabrous. Spikes terminal and lateral, 1-flowered. Flowers small, second, each furnished with one bracteate.

1. S. cespitosâ (Blum. 1. c.)—Native of Java, at the foot of Mount Salak in humid places.

Tufted Spiradclus. Pl. tufted.

Cult. For culture and propagation see Tula below.


—A small procumbent branched tufted herb. Leaves reniform, petiolate. Pedicels axillary, short, 1-flowered. This genus was alone known to Feuillé, and is therefore very doubtful. Habit of Nertèra, but differing in the flowers being pentameric, and in the cells of the fruit being many seeded; it is perhaps, however, only that genus badly described.

1 T. adansonii (Rom. et Schultes, syst. 4. p. 385.) 0. G. Native of Peru, on rocks by the sea-side. Soldanella facie, Feuill. obs. 3. pt. 2. p. 63. t. 44.

Adanson's Tula. Pl. tufted.

Cult. A mixture of loam, peat, and sand will be a good soil for this little plant; and it may either be increased by cuttings planted in sand under a hand-glass, or by seeds. The pot in which it is grown should be half filled with sherd.


1. D. repens (Forst. l. c.) 0. F. Native of the East Indies, as in Java, Coronadel, Timor, Luconia, New Caledonia, &c., in humid shady places along the banks of rivers, and on the margins of rice fields. Blum. bijdr. p. 990. Roth. nov. spec. 139. Roxb. fl. ind. 2. p. 159. Cham. et Schlecht. in Linn. 4. p. 150. Hedyotis repens, Lam. ill. no. 1424. Oldenlandia repens, Lam. m. t. 40. but O. repens of Bum. fl. ind. according to his herbarium is nothing but Pélipis Pörtula.—Rumph. amb. 6. t. 170. f. 4. Flowers small, in the divisions of the branchlets.


Cult. The seeds require to be sown on a gentle hot-bed in spring; and the plants when of sufficient size may be planted out into a moist shady situation in the open ground.

LXXV. DEPEEA (named after M. Deppe, who has collected and sent home many plants from México). Cham. et Schlecht. in Linn. 5. p. 167. D. C. prod. 4. p. 618.

Lin. syst. Tetrandria, Monogynia. Teeth of calyx 4, triangular. Corolla somewhat rotate, quite glabrous; lobes elliptic. Anthers 4, linear, exerted; filaments very short. Style longer than the stamens; stigma thicker than the style. Capsule membraneous, elliptic, crowned by the calyceine teeth beneath the vertex, 2-celled; cells 1-seeded, with a loculicidal dehiscence. Seeds fixed to the middle dissepiment.—A small shrubby plant, with a woody root, and reddish inner bark. Leaves petiolate, elliptic, acuminate at both ends, rather pilose above and on the margins. Stipulas triangular, deciduous. Gyms terminal and axillary, pedunculate, of 3 or 4 branches. Flowers yellow. Habit, fruit, and capsule of Hedyotis, but the cells are 1-seeded as in the tribe Spermacoceae.


Red-rooted Depeea. Shrubs 1 to 2 feet.

Cult. For culture and propagation see Dentella above.

SUBTRIBE II. HEDYOTEÆ (this tribe contains plants agreeing with Hedyotis in important characters). D. C. prod. 4. p. 419. Stipulas resembling a sheath on both sides, and ending in many bristles at the apex.

LXXVI. HEDYOTIS (from ἱέυς, hedy, sweet, and οὖς, ous, an ear; the leaves are oval, soft, and firm, from
which circumstance they have been compared to ears). Roxb. fl. ind. 1. p. 368. Cham. et Schlecht. in Linnaea. 4. p. 153. D. C. prod. 4. p. 419.—Hedyotis species of Lin. and all authors.

LIN. SYST. Tetrandria, Monogynia. Calyx with an ovate tube, and a 4-toothed limb: teeth erect, permanent, also separated on the fruit by acute narrow recesses. Corolla with a short tube, a bearded throat, and a 4-lobed limb. Stamens exerted a little; anthers ovate or roundish, small. Capsule ovate, somewhat attenuated at the apex, crowned by the calyceine teeth, which are connivent, but separate, 2-celled, and dehiscing in the middle of the cells. Seeds minute, angular, many in each cell.

—Herbs, sometimes suffruticosum at the base, with a habit like that of *Sperrmacese*. Stems tetragonal or nearly terete. Leaves opposite. Stipules adhering to the petioles on both sides, ending in many bristles. Flowers axillary, usually glomerate.—This genus differs from *Houtstoria*, to which St. Hil. pl. rem. bras. p. xxi. has joined it, in the calyx being adnate to the fruit the whole length. It differs from *Oldenlandia* in the teeth of the calyx being separated on the fruit by narrow recesses, not by broad ones.

*Pedicels axillary, 1-flowered, solitary, and sometimes twin.*

1 H. oqa'elis (D. C. prod. 4. p. 419.) plant decumbent and elongated, scabrous from hairs; leaves linear, acute; stipulas cleat into many bristles; pedicels axillary, 1-flowered, solitary, equal in length to the leaves; corolla hardly longer than the calyceine teeth.—Native of New Caledonia. Capsule downy, ovate, rather compressed: lobes of calyx lanceolate, separated by narrow recesses.

**Slender Hedyotis.** Pl. decumbent.

2 H. Asdce'snsionis (D. C. l. c.) stem suffruticosum, branched, glabrous; leaves linear, acute, with revolute margins, and are, as well as the calyces, the axillary bristles; pedicels axillary, solitary, 1-flowered, shorter than the flowers. ? S. Native of the island of Ascension, where it was collected by Lessen, G. Don, &c. Herb becoming black on drying. Capsule compressed. Seeds very minute. Corolla white. Lobes of calyx long, linear.

**Ascension Hedyotis.** Pl. ½ foot.

3 H. Paeceilbora (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 419.) plant suffruticosum, glabrous; branches tetragonal, smooth; leaves linear, very acute, with revolute margins; stipulas with many stiff erect bristles; flowers solitary, axillary, hardly pedicellate. ? S. Native of the island of Luzon, one of the Philippines. Leaves 1 or 1½ inch long, and a line broad. Fruit unknown, but the lobes of the calyx are separated by narrow recesses, indicating it to belong to this genus.

**Few-flowered Hedyotis.** Pl.

* * Flowers axillary, almost sessile, disposed in glomerose whorles.

4 H. Teneilfluora (Blum. bijdr. p. 971.) stems suffruticosum, kneeled, procumbent; leaves on short petioles, lanceolate, veinless beneath, with scabrous margins; bristles of stipulas long and setaceous; flowers usually twin, axillary, sessile. ? S. Native of the island of Nusa Kambanga, near Java.

**Slender-flowered Hedyotis.** Shrub procumbent.

5 H. Augustjolia (Cham. et Schlecht. in Linnaea. 4. p. 153.) stems branched a little, tetragonal, when young the angles are hairy; leaves linear, very narrow, acute, with revolute scabrous margins; stipulas hairy, membranaceous fringed; flowers 3-6-together, axillary, almost sessile, glomerate. ? F. Native of the island of Luzon, one of the Philippines.

**Narrow-leaved Hedyotis.** Pl. ½ foot.

6 H. Bocei (D. C. prod. 4. p. 420.) plant glabrous; stems herbaceous, ascending, branched, slender, tetragonal; leaves linear; bristles of stipulas shorter than the fruit; flowers few, axillary, somewhat verticillate; fruit ovate, crowned by the teeth of the calyx, which are acute. ? H. Native of Carolina, where it was collected by Bosc, and sent home under the name of *Didia*. Leaves almost an inch long, and a line broad. Seeds very minute.

**Bosc's Hedyotis.** Pl. ascending.

7 H. Auricula (Lin. spec. 147.) stem almost simple, tetragonal, rather hairy at the apex; leaves lanceolate-ovate, nervel; stipulas ciliated with bristles; flowers glomerate, axillary, somewhat verticillate. ? S. Native of Ceylon, Malabar, also of Silhet and Nipaul, ex Roxb. fl. ind. 1. p. 369. Rhed. mal. 10. t. 32.—Burn. fl. zeyl. t. 108. f. 1. H. nervosa, Lam. dict. 3. p. 79. ? Flowers white, sessile.

**Auricled Hedyotis.** Pl. ½ foot, procumbent.

8 H. genculata (Roxb. fl. ind. 1. p. 368.) plant weak, decumbent; stems nodose, terete, smooth; leaves almost sessile, lanceolate, smooth; flowers on short peduncles, disposed in whorles.—Native of the Malay Islands. The rest unknown.

**Kneed-stemmed Hedyotis.** Pl. decumbent.

9 H. Lapeyrrousii (D. C. prod. 4. p. 420.) stem erect, glabrous, terete, rather angular at the apex, and hardly branched; leaves oblong-lanceolate, acuminate at both ends, glabrous; stipulas of many bristles; flowers few, axillary, almost sessile, verticillate; capsules globose. ? F. Native of the island of Vanikoro, where it was collected by Lessen. Stem 1½ foot high. Leaves 4 inches long, and 8-10 lines broad, lined with 5-6 oblique nerves on each side.

**La Peyrous's Hedyotis.** Pl. 1½ foot.

10 H. crassifolia (Blum. bijdr. p. 971.) stems diffuse, rather hairy; leaves lanceolate, cuspidate, almost veinless, except the middle nerve, scabrous beneath and on the margins, on very short petioles; stipulas setigerous; flowers disposed in glomerate whorles.—Native of Ambayna, ex Rumph. amb. 6. p. 25. t. 10.; and of Java, ex Lin. not in Jamaica, as said by Rœm. et Schultes, syst. 3. p. 199. Oldenlandia verticillata, Lin. mant. 40.

**Thick-leaved Hedyotis.** Pl. 2 to 3 feet.

11 H. cratæganum (Spreng. pug. 2. p. 35.) stems terete, glabrous, articulated; leaves lanceolate, acuminate, veiny, scabrous; stipulas setaceous-jagged; flowers sessile, disposed in glomerate whorles.—Native of Amboyna, ex Rumph. amb. 6. p. 25. t. 10.; and of Java, ex Lin. not in Jamaica, as said by Rœm. et Schultes, syst. 3. p. 199. Oldenlandia verticillata, Lin. mant. 40.

**Strong-jointed Hedyotis.** Pl. 1 foot.

12 H. hispidula (Retz. obs. 4. p. 23. but not of Roth.) stems diffuse, branched, tetragonal, rooting at the nodi; leaves sessile, lanceolate, with hispid margins; stipulas with many bristles; flowers axillary, almost sessile, disposed in glomerate whorles; filaments inclosed.—Native of China, ex Retz; of the Moluccas, ex Roxb. fl. ind. 1. p. 368.; of Java, Blum. bijdr. p. 971. Oldenlandia hispida, Poir. dict. 4. p. 536. Stamens shorter than the style, which is clavate, ex Retz. Capsule hispid, ex Spreng. pug. 2. p. 32.

**Hispid Hedyotis.** Pl. ½ foot, decumbent.

13 H. uncælla (Hook. et Arn. in Beech. voy. pt. bot. p. 192.) plant suffruticosum, glabrous; branches simple; leaves petiolate, oblong-lanceolate, with almost simple longitudinal veins; flowers axillary and terminal, numerous, almost sessile, disposed in glomerate whorles; capsules turbinate, glabrous, crowned, bipartite at the dissepiment; tube of calyx contracted, and the lobes subulate and recurvedly uncinate, long, and ciliated. ? G. Native of China. This may be the type of a new genus, and is probably the H. cephalophora, R. Br. in Wall. cat. no. 842.

**Hooked-calycy Hedyotis.** Shrub.
Rubiaceæ. LXXVI. Hedyotis.

14 H. rotundifolia (Spreng. pug. 3. p. 197.) plant decumbent, branched a little; leaves petiolate, broad-ovate, somewhat 3-nerved; stipulas scarious, ciliate; flowers axillary, almost sessile, disposed in whorles; capsules hispid.—Native of the East Indies, in humid places. Oldenlandia trinervia, Reiz, obs. 4. p. 27.

Round-leaved Hedyotis. Pl. decumbent.

15 H. perpusilla (Hook. et Arn. in bot. misc. 3. p. 259.) glabrous; stems tufted, diffuse, branched, weak; leaves oblong; stipulas minute, not setigerous; pedicels terminal, and from the forks of the branches, 1-footed, about equal in length to the leaves; tube of calyx globose, hispid from bristles; teeth of calyx erect, ovate, obtuse.—Occasionally found in inundated places by the shores of La Plata, near Buenos Ayres. Stem 1 to 2 inches long, branched; the branches are furnished with several short lateral ramuli, from the axils of which springs a peduncle, which after flowering becomes reflexed. Very closely allied to H. umiflora, but seems to differ from the genus by the stipulas not being furnished with bristles.

Least Hedyotis. Pl. tufted.

16 H. nodiflora (Wall. cat. no. 855.) glabrous; stems quadrangular; petioles downy; leaves ovate-elliptic, acuminated, veined; flowers much crowded, axillary, subverticillate, sessile. 2. S. Native of the East Indies, in Tavoy.

Knot-flowered Hedyotis. Pl. 1 to 2 feet.

17 H. argentea (Wall. cat. no. 855.) glabrous; stems quadrangular; leaves broad-ovate, acuminated, whitish above, and rusty beneath; flowers in axillary heads. 2. S. Native of the Burmese Empire, on the banks of the Irrawaddy.

Silery Hedyotis. Pl. 2 to 3 feet.

18 H. costata (R. Br. in Wall. cat. no. 849.) stem downy, quadrangular; leaves lanceolate, tapering to both ends, glabrous, with many parallel veins; flowers disposed in crowded axillary heads, subverticillate; teeth of calyx separated by distant recesses. 2. S. Native of Pulo-Penang and Silhet.

Ribbed Hedyotis. Pl. 2 to 3 feet.

19 H. pinifolia (Wall. cat. no. 850.) plant much branched; branches quadrangular; leaves linear, with revolute edges; flowers disposed in axillary and terminal verticillate heads. 2. S. Native of Pulo-Penang, and of the Burmese Empire, at Prone and Amherst. Perhaps a species of Oldenlandia.

Fine-leaved Hedyotis. Pl. ½ to 1 foot.

20 H. congesta (R. Br. in Wall. cat. 844.) herboaceous, glabrous; stem and branches quadrangular; leaves ovate-lanceolate, acuminated, pale beneath; flowers crowded, axillary; stipulas somewhat pinna-tiulat; lobes of calyx rounded, separated by narrow blunt recesses. 2. F. Native of Pulo-Penang.

Crowded-flowered Hedyotis. Pl. 3 to 4 feet.

21 H. macrophylla (Wall. cat. no. 841.) stem and branches quadrangular; leaves large, roughish, veined, tapering to both ends; stipulas pinna-tiulat; flowers much crowded, axillary, forming glomerate whorls. 2. S. Native of Pulo-Penang. Calyx downy, with the lobes separated by narrow recesses.

Large-leaved Hedyotis. Pl. 2 to 3 feet.

** * Peduncles axillary, many-flowered: flowers crowded.

22 H. calvata (Lam. dict. 3. p. 80.) stem terete, almost simple, downy; leaves almost petiolate, ovate-lanceolate, acute, nervet, glabrous above, velvety on the nerves beneath; stipulas tetaceously jagged; peduncles axillary, solitary, much shorter than the leaves, bearing each a dense head of flowers.—Native of the East Indies, particularly in Java, in moist parts of mountains. Blum. biijdr, p. 973. Habit of euphorbia capitata.

Capitate-flowered Hedyotis. Pl. ½ foot.

23 H. lineata ( Roxb. fl. ind. 1. p. 369.) plant diffuse, plicate; leaves sessile, ovate-lanceolate, with longitudinal simple parallel veins; peduncles axillary, many flowered, rather long, 2-3-together; capsules round, pilose. 2. F. Native of the East Indies, in Chittagong. The rest unknown.

Linaced-leaved Hedyotis. Pl. diffuse.

24 H. umiflora (Wall. in Roxb. fl. ind. 1. p. 370.) plant ascending, clothed with soft hairs; leaves oval-lanceolate, acute, nerved, very villous on the nerves on both surfaces; stipulas cup-shaped, acuminated at both ends, joined to both sides of the petioles; peduncles axillary, much shorter than the leaves, bearing many subcorymbous flowers; flowers usually by threes; calyx villous, with acute lobes. 2. G. Native of Nipal. H. linata, D. Don, fl. nep. p. 134. but not of Roxb. Spermacoce lineata, Hamilt. miss. Stipulas coriaceous, acuminated in the middle. Stems many from the same root, woody, simple. Calycine segments lanceolate, spreading.

Elat-leaved Hedyotis. Pl. 1 to 2 feet.

25 H. vestita (R. Br. in Wall. cat. no. 847.) stems, peduncles, and petioles villous; stem quadrangular; leaves ovate-lanceolate, much acuminated, tapering at the base, downy, particularly on the veins beneath; stipulas villous, bearing 3 long bristles each; peduncles axillary, trichotomous, each division bearing a head of flowers. 2. S. Native of Pulo-Penang and Silhet. Leaves with parallel veins.

Clothed Hedyotis. Pl. 2 to 3 feet.

26 H. macrostemon (Hook. et Arn. in Beech. voy. pt. bot. p. 192.) plant suffruticose, branched; branches pubescent; leaves on short petioles, ovate-lanceolate, clothed with soft down beneath, rather scabrous and shining above, with longitudinal simple parallel veins; peduncles axillary, solitary, shorter than the leaves, many flowered; flowers capitate; stamens much exserted; capsules hairy, free at the apex. 2. G. Native of China. Closely allied to the two preceding species.

Long-stamened Hedyotis. Pl. ½ foot.

27 H. serpyllifolia (Poir. suppl. 3. p. 14.) stem herboaceous, branched, rather angular; leaves ovate, acuminately mucronate, somewhat ciliated; stipulas bipartite, acuminated; flowers 2-fé in each heap, axillary and terminal, on short peduncles; tube of calyx downy.—Native of the island of Bourbon, where it was collected by Bory de St. Vincent. Corolla white, shorter than the calyx. Seeds innumerable, very minute. Stem hispid.

Wild Thyme-leaved Hedyotis. Pl. ½ to 2 foot.

28 H. retenis; stem creeping, filiform, branched, rooting at every joint; leaves small, oval or obovate, linear-lanceolate, ex Lour, smooth; flowers axillary, solitary, on very short pedicles; capsule nearly globular, covered with hollow pellucid hairs. 2. S. Native of the East Indies and China. Oldenlandia repens, Burm. fl. ind. 38. t. 15. f. 2. Lour. coch. p. 78. Corolla bell-shaped, white.

Creeping Hedyotis. Pl. creeping.

29 H. uniflora (D. C. prod. 4. p. 421.) plant glabrous; stems creeping, branched, weak; leaves ovate-roundish, obtuse; stipulas small; pedicels terminal, 1-flowered, longer than the leaves; tube of calyx rather hispid. 2. F. Native of Chili, in sandy places along the banks of streams. Oldenlandia uniflora, Ruiz et Pav. fl. per. 1. p. 57. Corolla with a broad tube, which is bearded inside. Lobes of calyx ovate, acutish.

One-flowered Hedyotis. Pl. creeping.

uniflora, Lam. ill. p. 271. H. Virgínica and H. glomeráta, Spreng. syst. 1. p. 412, 413. Lobes of calyx 4, ovate, acuminate. Corolla subrotate, shorter than the calyx; with the lobes rather spinose. Stamens short, opposite the lobes of the corolla, ex Torrey. Style almost wanting; stigma thick, undivided. Seeds innumerable, very minute, as in the genus Oldénlandia.

Goree-flowered Hedyotis. Pl. 1/4 creeping.

31. H. Góreënsis (D. C. prod. 4. p. 421.) plant diffuse, many stemmed; stems rather angular, glabrous, except at the nodi, where they are downy; leaves lanceolate, acute, glabrous; peduncles axillary and on the tops of the branches, disposed in umbellate heaps, a little shorter than the fruit; fruit downy, crowned by the calycine teeth, which are subulate, and somewhat involucitely incinate at the apex. Gen. F. Native of the coast of Africa, in the island of Goree. Habit of Chickweed. Leaves oval-oblong or lanceolate. Capsule desiccating but slowly. Seeds very minute. Corolla not seen.

Var. β, erecta (D. C. l. c.) stems erect, much shorter than those of the species; heads of flowers solitary, terminal, umbelicate. Gen. S. Native in humid parts of woods.

Goree Hedyotis. Pl. diffuse.

**** Panicles or coryms terminal, loose, rarely axillary. The species are very different from each other, and from the rest of the genus.

32. H.? Láxa (D. Don, prod. fl. nep. p. 155.) stem herbaceous, weak, dichotomously branched, angular, glabrous; leaves ovate, acute, rather hairy on both surfaces, ciliated; stipules divided into bristles; peduncles axillary, dichotomous; flowers usually by threes. Gen. G. Native of Nipaul. Habit of a species of Ophiórihiza. Anthers in some specimens examined exserted, and in others almost inclosed. Teeth of calyx acutely mucronate, 3 times shorter than the corolla. Capsule somewhat didymous, free at top, and desiccating in the middle of the cells. Seeds ovate-roundish.

Loose-flowered Hedyotis. Pl. 1/4 foot.

33. H. Polyca'pa (Wall. cat. 838.) branches tetragonal; leaves elliptic-lanceolate, acuminate, tapering to the base; stipules joined to the petioles, and forming a sheath with them, furnished with a tooth on each side; panicle terminal, corollary, bracteose, trichotomous; lobes of calyx separated by broad recesses. Gen. S. Native of Sílhet. Perhaps a species of Oldénlandia.

Many-fruited Hedyotis. Pl. 2 to 3 feet.

34. H. Móliis (Wall. cat. no. 839.) plant clothed with soft white down in every part, but particularly so on the under side of the leaves; peduncles axillary and terminal, panicked; pedicels corymbose; stipulas with 3 bristles. Gen. S. Native of Pólo-Penang.

Soft Hedyotis. Pl. 1 to 2 feet.

35. H. Vaginátta (Blum. herb. and mss. ex D. C. prod. 4. p. 421.) plant suffruticose, glabrous; leaves lanceolate, much acuminate, nerved; stipulas long, sheathing, drawn out on both sides into one puberulous bristle; corollary terminal, trichotomous; throat of corolla bearded; stamens exerted. Gen. S. Native of the island of Ternate, one of the Moluccas.

Sheathed-stipuled Hedyotis. Shrub.

36. H. Elongáta (R. Br. in Wall. cat. no. 865.) plant puberulous; leaves lanceolate or linear; stipulas jagged; peduncles terminal, elongated, dichotomously branched; flowers distinct on the branches of the peduncle, usually by twos, and one in each fork, almost sessile. Gen. S. Native of the East Indies. Perhaps a species of Oldénlandia.

Elongated-stipuled Hedyotis. Pl. 1 to 2 feet.

37. H.? Scándens (Roxb. fl. ind. 1. p. 369.) stem terete, scendent, glabrous; leaves on short petioles, broad-lanceolate, acuminate, glabrous, shining; stipulas entire, joined to the pedioles, furnished with a short mucron on both sides; coryms panicked, axillary, and terminal, with the branchlets rather villous; lobes of corolla and throat hairy inside; style villous at the apex; stigma bilamellate. Gen. S. Native of Nipaul and Silhet, where it is called Gújéc. Petésia Hita, Hamilt. mss. ex D. Don, fl. nep. p. 134.

Climbing Hedyotis. Pl. cl.

38. H. Cape'telláta (Wall. cat. 837.) glabrous; leaves elliptic, acuminate, tapering at the base; stipulas joined to the pedioles, furnished with a tooth on both sides; panicle terminal, composed of round heads of flowers. Gen. S. Native of Pólo-Penang, and Távov.

Headed-flowered Hedyotis. Shrub cl.

39. H.? Leschenau'ltii (D. C. prod. 4. p. 422.) suffruticose; branches glabrous, tetragonal at the apex; leaves lanceolate, pilose beneath; stipulas combined with the petioles, forming a kind of cupula, and furnished with 3 bristles on both sides; panicle terminal, with glabrous branches; limb of calyx with 4 short teeth; lobes of corolla hairy above; style shorter than the corolla. Gen. S. Native of the East Indies, on the Nellígherry mountains, where it was collected by Leschenault. Allied to H. scándens, and with it will probably form a distinct genus.

Var. β, Wallíchii (D. C. prod. 4. p. 422.) branches compressedly angular; leaves acuminate; limb of calyx 4-cleft to the middle; lobes oblong-linear; limb of corolla very hairy above. Gen. G. Native of Nipaul, at Katmandu. Perhaps the same as H. scándens, Roxb. ex Wall. fl. ind. 1. p. 369, but it does not exactly agree with the description given of that plant by Roxburgh.

Leschenaultii's Hedyotis. Shrub cl.?

40. H. Articuláris (R. Br. in Wall. cat. no. 854.) plant dense and dwarf; leaves much crowded, lanceolate, veiny; stipulas jagged; peduncles terminal and axillary, forming panicles. Gen. G. Native of the Nellígherry mountains.

Jointed Hedyotis. Pl. 1/2 foot.

41. H.? Arbórea (Roxb. in Beuts. voy. append. p. 310.) arboreous; leaves on short petioles, oblong, acuminate, shining, recurved at the apex; stipular sheath cylindrical, furnished with 1-3 unequal teeth; coryms terminal, brachiate, almost globular; capsules globose. Gen. S. Native of the island of St. Helena, in woods towards the tops of the mountains, where it is called dogwood by the inhabitants. Lobes of calyx oval. Corolla short, glabrous. Perhaps a proper genus.

Tree Hedyotis. Shrub.

42. H. Stylosá (R. Br. in Wall. cat. no. 853.) stems quadrangular; leaves glabrous, elliptic-lanceolate, tapering to both ends, coriaceous; stipulas pilose; peduncles axillary and terminal, trichotomous, forming panicked coryms; corolla very hairy inside. Gen. G. Native of the Nellígherry mountains.

Long-styled Hedyotis. Shrub 1 to 2 feet.

† Doubtful species.

43. H. Crassifólia and H. Ro'sea, Rafin. fl. lud. 77. are very doubtful plants, and are probably species of Anótis.

Cult. None of the species of this genus are worth cultivating except in botanic gardens. Any light soil will suit them; and cuttings of the shrubby and herbaceous perennial species will root in the same kind of soil, with a hand-glass over them, in a little heat. The annual kinds require the same treatment as other tender annuals. All are easily increased by seeds.

LXXXVII. Oldénlandi'ndia (named by Plummer in memory of Henry Bernh. Oldenland, a Dane, who collected plants at the Cape of Good Hope in 1695. They came into the possession of Burmann, and there is an account of them in the 6th volume of Linnaeus'ss Aménitates Académicae). Lin. gen. no. 154.
—Hedyotis species, Spreng. Smith, and Blume.—Hedyotis and Oldenlandia, Gaertn. fr. 1. t. 30.—Oldenlandia and Lístèria, Neck. elem. no. 345 and 346.—Lístèria, Rafn. ann. gen. sc. phys. 6. p. 81. but not of R. Br.

Lin. syst. Tetrindria, Monogynia. Calyx with a sub-globose tube, and 4 sub-approximate teeth, which remain on the fruit and are separated by very wide recesses. Corolla with a short tube, a 4-cleft limb, and a villous or glabrous throat. Stamens a little exerted; anthers ovate or orbicular. Stigma undivided or bifid. Capsule almost globose, crowned by the small distant teeth of the calyx, 2-celled, dehiscing at top by a loculacidal chink. Seed small, innumerable, fixed to sub-globose placertas, and as if they were half immersed in them.—Small, herbaceous, or suffruticose plants, with the habit of chickweed. Leaves opposite, with the stipulas adhering to both sides of the petioles. Peduncles axillary and terminal, bearing 1-2 or many flowers, usually elongated and slender. Flowers usually white. This genus hardly differs from Hedyotis, except in the teeth of calyx being separated by wide recesses on the fruit instead of narrow ones, which character we think would scarcely constitute a sectional distinction. The species, however, have a different habit, and are more readily distinguished by it, than by any other character.

* Pedicels axillary, 1-flowered, usually solitary, rarely by twos or threes.

1 O. brachi'yjoda (D. C. prod. 4. p. 424.) plant glabrous and decumbent; leaves linear; stipulas furnished with 2 bristles on both sides; pedicels axillary, 1-flowered, shorter than the flowers, solitary or in tufts; corolla tubular; anthers exerted to the length of the lobes of the corolla. O. F. Native of Java, Philippine Islands, and Nipal. Hedyotis herbácea, var. a. Blum. bijdr. p. 970. H. radicans, Batl. in herb. Henkee. Allied to O. herbácea but distinct, and it is probably the same as O. ramóssissima or O. diffla.

Short-pedicelled Oldenlandia. Pl. ½ foot.

2 O. ramóssissima (Fisch. ms. in Spreng. mant. 1. p. 35.) stems herbaceous, diffus; leaves lanceolate, bluish; stipulas toothed; fruit almost solitary, axillary, sessile. Y. F. Native country unknown. Hedyotis ramosissima, Spreng. pug. 2. p. 31. Flowers white. Probably distinct from O. brachi'yjoda.


3 O. sabulōsa (D. C. prod. 4. p. 424.) an herbaceous, tufted, diffuse, much-branched plant, which is roughish from short scattered hairs in every part; leaves linear, acute; stipulas membranous, furnished with many bristles; pedicels 2-3 together, axillary, 1-flowered, much shorter than the leaves, deflexed in the fructiferous state; corolla length of the lobes of the calyx. O. F. Native of Senegal, in sandy places at Walo, where it was collected by Perrottet and Leprêtre. Flowers white. Perhaps only a luxuriant variety of O. ripátria.

Sand Oldenlandia. Pl. ½ foot.

4 O. ripátria (D. C. prod. 4. p. 424.) stem branched, erectish, tetragonal, smoothish; leaves linear, acute, rather scabrous; pedicels axillary, 1-flowered, 2-3 times shorter than the leaves; corolla tubular, about the length of the calyx. O. F. Native of Senegal, in humid sandy places, on the banks of the river, where it was collected by Perrottet and Leprêtre. Very nearly allied to O. scabrida, but is easily distinguished from it in the pedicels being much shorter, and the lobes of the calyx being longer.

River-side Oldenlandia. Pl. ½ foot.

5 O. Cape'nxsis (Thunb. prod. p. 29. fl. cap. 1. p. 537.) stem decumbent, branched, villous; leaves linear, acute, glabrous; pedicels numerous, 1-flowered, shorter than the leaves; lobes of calyx ciliated; throat of corolla villous. O. F. Native of the Cape of Good Hope, in sandy places by the margins of rivers. Hedyotis Capénìs, Lam. ill. no. 1425. Stigma clavate (ex Thunb.). Capsule ovate, didymous.

Cape Oldenlandia. Pl. decumbent.

6 O. linea'ris (D. C. prod. 4. p. 425.) plant glabrous, erect, branched; stem tetragonal; leaves linear, acute; stipulas ciliated, furnished with many bristles; pedicels axillary, twin, 1-flowered, about the length of the leaves; but the uppermost ones are longer than them; capsule globose; teeth of calyx acute, very short. O. F. Native of Senegal, in sandy places, at St. Louis, where it was collected by Leprieur and Perrottet.

Linear-leaved Oldenlandia. Pl. ½ foot.

7 O. lanci'fölia (D. C. l. c.) stem simple, weak, somewhat dichotomous, creeping, glabrous; leaves linear-lanceolate, glabrous, with rather scabrous margins; bristles of the stipules distant; peduncles axillary, solitary, rarely twin. O. F. Native of Guinea. Hedyotis lancifólia, Schum. pl. guin. p. 72.

Lance-leaved Oldenlandia. Pl. ½ foot.

8 O. herba'cea (D. C. l. c.) plant glabrous, decumbent; leaves linear or linear-lanceolate; stipulas of many bristles; pedicels axillary, 1-flowered, solitary or twin, shorter than the leaves, but 2-3 times longer than the flowers; tube of corolla cylindrical; anthers hardly exserted from the throat. O. F. Native of the East Indies, Madagascar, Senegal, St. Domingo, Mexico, &c. O. Madagascariensis, Desf. cat. hort. par. 1815. —Rheed. mal. 10. t. 23. and 55. Hedyotis herba'cea, Lin. fl. zeal. p. 65. H. herbácea, var. Œ. Blum. bijdr. p. 970. Flowers white.

Herbacium Oldenlandia. Pl. Ju. Aug. Cilt 1819. Pl. ½ fl. O. tenui'fölia (Forst. prod. no. 57, but not of Burm. ex D. C. prod. 4. p. 425.) stem erect, tetragonal, branched; leaves linear, attenuated at both ends; stipulas ciliated a little, rather scarios; peduncles axillary, 1-flowered, shorter than the leaves, reflexed while in flower, and erect while bearing the fruit. O. F. Native of the Island of Tanna. Hedyotis tenuifólia, Smith, in Rees's cyc. 17. no. 19. Spreng. pug. 2. p. 30, where it is confused with O. Capénìs and O. herba'cea. O. tenui'fölia, Burm. fl. ind. 38. t. 14. f. 1 is probably distinct from this but is not sufficiently known. Flowers white.

Fine-leaved Oldenlandia. Pl. ½ foot.

10 O. scabri'da (D. C. prod. 4. p. 425.) stem erect, branched; tetragonal, scabrous along the angles; leaves linear, acute; pedicels axillary, 1-flowered, a little shorter than the leaves; corolla tubular, hardly longer than the calyx. O. F. Native of Nipal. Oldenlandia tenuifólia, Burm. fl. ind. t. 14. f. 1 is referrible to this species, as the figure given agrees very well with it.

Scabrous Oldenlandia. Pl. ½ foot.

12 O. grami'nîfölia (D. C. l. c.) plant decumbent, much branched, smoothish; leaves linear; stipulas of 5-8 setaceous divisions; pedicels axillary, 1-flowered, about equal in length to the leaves, twin or crowded; corolla hardly longer than the calyx. O. F. Native of the East Indies and Arabia. Hedyotis graminifólia, Lin. fl. suppl. p. 110. Vahl. symb. 2. p. 27. Spreng. pug. 2. p. 29. exclusive of the syn. of Pluk. which is referrible to Mallugo Cervæna. Hedyotis herbácea, Forsk. cat. arab. no. 88. Old. stricta, Lin. mant. 200. ex Vahl. Corolla and anthers blue.

Grass-leaved Oldenlandia. Pl. decumbent.

12 O. vu'îlîa (D. C. l. c.) stems decumbent, tetragonal, scabrous; leaves almost sessile, elliptic, acute at both ends, with scabrous margins; stipulas having 3–5 setaceous divisions; peduncles axillary, solitary, 1-flowered, about equal in length
to the leaves. O. F. Native of Tranquebar and Java. Hedyotis pumila, Lin. fil. suppl. 119. Spreng. pag. 2. p. 34. bidr. p. 971. Flowers white.

Dwarf Oldenlandia. Pl. deciduous.

13 O. linifolia (D. C. l. c.) leaves linear, attenuated at both ends; peduncles 1-flowered, longer than the leaves. O. F. Native of the East Indies. Hedyotis linifolia, Willd. mas. in Rœm. et Schultes, syst. S. p. 596. The rest unknown.

Flax-leaved Oldenlandia. Pl. deciduous.

14 O. virgata (D. C. l. c.) plant very slender, glabrous; stems tetragonal; leaves linear; stipules furnished with very short bristles, at length truncate; peduncles twin, 1-flowered, elongated. the ultimate ones disposed into a kind of terminal panicle; pedicels opposite, from the axils of the bracteas, longer than them, and about equal in length to the internodes. O. F. Native of Guinea (ex Willd.), in the rice-fields of Casamancia and Gambia (ex Perrottet and Leprieur), and Sierra Leone (ex Smeathmann). Hedyotis virgata, Willd. spec. 1. p. 167. Scler. pl. guin. p. 69? Flowers and fruit very small. Leaves 8-9 inches long. Stmiss a little exerted.

Tiggy Oldenlandia. Pl. foot.

15 O. asperula (D. C. l. c.) plant glabrous; stem erect, branched, tetragonal; leaves distant, linear, ciliated at the base; stipules entire, cupular, truncate; pedicels straight, 1-flowered, rising from the axils of the upper leaves, which are almost abortive. O. F. Native of Ceylon, where it was collected by Leschenault. Habit almost of the species of Aspéraula. Corolla greenish in the dried state, also glabrous in the throat, 4-cleft. Antlers pedicellate, shorter than the lobes of the corolla. Stigmas 2, elongated. Capsule oblong. Seeds minute. Lobes of calyx short, distant. Perhaps this plant ought to be removed from the genus.

Woodroof-like Oldenlandia. Pl. foot.

16 O. diffusa (Roxb. fl. ind. 1. p. 444.) stem tetere, flaccid, spreading, scabrous; leaves linear-lanceolate, acute, smooth; stipules at length many bristles; pedicels axillary, 1-flowered, 4-times shorter than the leaves. O. F. Native of the East Indies, at Bandra. Corolla smooth, white. Stigma profusely bifid. Capsule roundish. Perhaps only a variety of O. bifora.


** Peduncles 2-3 or many-flowered.


18 O. alsinifolia; glabrous; leaves membranous, lanceolate, tapering to both ends; peduncles axillary, few-flowered; stipulas bristly at top; teeth of calyx distant. O. F. Native of Pulu-Penang. Hedyotis alsinifolia, R. Br. in Wall. cat. no. 873. Plant diffuse.

Chickweed-leaved Oldenlandia. Pl. 1/4. to 1 foot.

19 O. brachyoda; plant glabrous, diffusely branched; leaves linear, with revolute edges; pedicels short, axillary, bearing at the top an umbel of short pedicellate flowers, or the vol. III.
white and tasteless; it is the bark only that is possessed of the colouring principle; when fresh it is orange-coloured, tinged the spittle yellow, and leaves a slight degree of acrimony on the point of the tongue, for some hours after chewing; to appearance it loses its yellow colour on drying, but still retains the above property on being chewed. It impregnates cold water or spirits with a straw-colour, and to boiling water it gives a brownish porter colour. The watery infusions and spirituous tinctures are changed into a bright and deep red by alkaline substances, and are rendered paler or nearly destroyed by acids.

The colouring powers of this root are said to improve by keeping 3 or 4 years. When the wild sort can be had in any quantity, it is esteemed one-third or fourth stronger, and yields a better colour; and when these roots can be had of two years' growth they are reckoned still better. This plant is the *Tseri-lc\* of the Telingas; and the *Sayae-ver or Imurel* of the Tamul. The Telinga physicians do not give any part of the plant a place in their Materia Medica; but the Malabar physicians say that the roots cure poisonous bites, colds, and cutaneous disorders, and warm the constitution.

**Umbe1-flowered Oldenlandia or Indian Madder.** Fl. July, Aug. Cl. 1792. Pl. 3 to 1 foot.

26 *O. pure\*; downy in every part; leaves linear-lanceolate, mucronate; pedicules axillary or from the forks of the stems, bearing each a simple umbel of flowers, or 3 pedunculate umbels of flowers, rising from 2 leaves. © H. Native of the East Indies. O. puberula, R. Br. in Wall. cat. no. 884.

27 *O. capillaris* (D. C. prod. 4. p. 426.) stem ascending, teretely tetragonal, and rather seaborous along the angles, much branched; leaves linear-lanceolate, rather scabrous; stipules small, with setaceous bristles; pedicules axillary and terminal, loosely pilose, longer than the leaves, very slender, 2-4-flowered; flowers opposite, on long pedicels. © F. Native of Madras. Corolla small, tubular. Capsule globose, glabrous.

28 *O. paniculata* (Lin. spec. p. 1667.) plant glabrous, erectish, branched; branches tetragonal; leaves ovate-lanceolate; stipules small, undivided; racemes axillary and terminal, almost naked; pedicels longer than the leaves; corolla with a gibbous tube and a villous throat. © S. Native of the East Indies, Moluccas, and Philippines.—Burm. fl. ind. 38. t. 15. f. 1. Hedyotis racemosa, Lam. dict. 3. p. 76. ill. 62. f. 2. Leaves smooth. Flowers small. Hedyotis dichotoma, Cav. icon. 6. p. 573. f. 2 and H. media, Cav. icon. 6. p. 574. f. 1. According to Bartling is probably distinct from this. Flowers small, red, on long pedicels.


27 *O. pentandra* (D. C. prod. 4. p. 427.) plant procumbent, glabrous; leaves lanceolate, cordate at the base, or ovate-oblong, sessile, discoloured; racemes axillary, naked; flowers pentamers.—Native of Guinea. Hedyotis pentandra, Schum. pl. guin. p. 71.

30 *O. multiflora* (Cav. icon. 6. p. 58. t. 574. f. 2.) glabrous; stem branched, furrowed, ascending; leaves sessile, ovate-oblong; stipules small, undivided; panicles axillary, opposite and terminal, many-flowered; pedicules 3-flowered, elongated.—Native of the Philippine Islands, about Manila, not of the Friendly Islands, as said by Poiret and Roemer. Very nearly allied to *O. paniculata*.

**Many-flowered Oldenlandia.** Pl. 1/2 foot.

31 *O. crassifolia* (Bart. in herb. Haenke, under *Hedyotis*) plant glabrous, surfruticosus, diffuse; branches tetragonal; leaves ovate or oblong, obtuse, fleshy; pedicules axillary and terminal, 3-flowered, usually shorter than the leaves; pedicels shorter than the flowers; segments of calyx lanceolate, short.

—Native of the Island of Luzon, one of the Philippines.

**Thick-leaved Oldenlandia.** Pl. diffuse.

32 *O. strigulosa* (Bartl. in herb. Haenke, under *Hedyotis*, ex D. C. l. c.) plant herbaceous, branched, erectish; leaves ovate-oblong, beset with very minute callous dots above, and with adpressed stigie beneath; stipulas undivided, linear-subulate; pedicules axillary and terminal, longer than the leaves, 3-flowered; pedicels hardly any; calycine segments ovate-triangular.—Native of the Island of Mariane.

**Strigulosa Oldenlandia.** Pl. 1/2 foot.

33 *O. latiflora* (Linn. in Roxb. fl. ind. 1. p. 442.) plant glabrous, erect; stem tetragonal, branched; leaves almost sessile, elliptic-oblong, smooth, rather fleshy; stipulas broad, eerosely toothed, obtuse; panicle terminal, leafe; corolla ventricose, with the throat closed by vilis; capsule somewhat compressed, furnished with a somewhat winged nerve on both sides. ©. F. Native of the East Indies, Java, Timor, &c. on the edges of rice-fields. Old. alata, Wall. in herb. Puer. Hedyotis ramosissima, Blum. bijdr. p. 972. but not of Fisch. Perhaps Hedyotis paniculata, Lam. ill. 1412. but the figure in Burm. ind. t. 71. f. 2. cited for this plant has 5-clft flowers, and is consequently not it. From the capsules being furnished with a somewhat winged nerve on each side, it comes very near to the genus *Gonotheca*. Flowers small, white.

34 *O. alata* (Koen. in Roxb. fl. ind. 1. p. 442.) plant glabrous, erect; stem tetragonal, branched; leaves almost sessile, elliptic-oblong, smooth, rather fleshy; stipulas broad, eerosely toothed, obtuse; panicle terminal, leafe; corolla ventricose, with the throat closed by vilis; capsule somewhat compressed, furnished with a somewhat winged nerve on both sides. ©. F. Native of the East Indies, Java, Timor, &c. on the edges of rice-fields. Old. alata, Wall. in herb. Puer. Hedyotis ramosissima, Blum. bijdr. p. 972. but not of Fisch. Perhaps Hedyotis paniculata, Lam. ill. 1412. but the figure in Burm. ind. t. 71. f. 2. cited for this plant has 5-clft flowers, and is consequently not it. From the capsules being furnished with a somewhat winged nerve on each side, it comes very near to the genus *Gonotheca*. Flowers small, white.

35 *O. macrophylla* (Linn. et Perr. ms. under *Hedyotis*, ex D. C. prod. 4. p. 427.) plant glabrous, erect; stem tetragonal, branched; leaves sessile, lanceolate, acuminate; stipulas undivided; pedicules axillary, racemose, longer than the leaves; pedicels in 4-5 opposite pairs.—Native of the Gambia, in rice-fields at Abreda, where it was collected by Leprieur and Perrotte. Allied to *O. alata*. Capsule somewhat turbinate, and probably furnished with a nervous wing on each side.

36 *O. lactea* (Cham. et Schlecht. in Linnaea. 4. p. 159. under Gerontoea) stem terete, pubescent; leaves linear-lanceolate, acute at both ends, flat; stipulas bidentate, scarious; pedicules terminal; corollas villous inside; anthers oblong, exserted. ©. F. Native of the East Indies. Hedyotis lactea, Will. enum. hort. berol. 1. p. 149. H. cymosa, Spreng. syst. 1. p. 413. © Flowers cream-coloured.


38 *O. microtheca* (Cham. et Schlecht. in Linnaea. 4. p. 169. under Gerontoea) plant herbaceous, erect, much branched;
leaves petiolate, ovate-lanceolate, acuminated, scabrous above; stipulas small, downy, dentately ciliated; flowers disposed in loose cymose terminal panicles. O. F. Native of Mexico, at Baranca de Tioselos, in shady places, where it was collected by Deppe and Schiede.—Chichia-tzonpatonic de Ocopetlayec. Hern. mex. p. 366. Corolla funnel-shaped, a line or more long. Capsules small. A larger variety of this is found about Tampico, ex Cham. et Schlecht. in Linnaea. 6. p. 414.

Small-sheathed Oldenlandia. Pl. 1 to ½ foot. 39. O. Deppeana (Cham. et Schlecht. in Linnaea. 5. p. 169. under Gerontogéa) plant shrubby, much branched, erect, glabrous; leaves petiolate, ovate-lanceolate, tapering into the petioles, firm, much acuminate, rather revolute, and scabrous on the margins; stipulas white, beset with glandular down, setosely jagged; the bristles thickened and glandular at the apex; flowers disposed in loose panicles at the ends of the branches. O. F. Native of Mexico, at San Andres, where it was collected by Schiede and Deppe. Gerontogéa Deppeana, Link and Otto, new abdibt. t. 86. Leaves large, but hardly an inch long. Corolla about 3 lines long. Anthers blueish. Flowers sometimes only 3-petalled.

Deppe's Oldenlandia. Shrub 1 foot. 40. O. Spergula Céa (D. C. prod. 4. p. 428.) plant erect, almost simple, hairy; leaves oval-oblong; stipulas cupulate, mucronate; peduncles almost terminal, elongated, many-flowered, naked; calyx glabrous; corolla tubular; anthers sessile; style at length bipartite to the base. O. H. Native of Nipal. Herb a finger in height, with the habit of Spérgula. Upper leaves usually 4 in a whorl. Peduncles glabrous. From the disbelieving of the capsule it agrees with O. conóstyla; but is very different in habit.

Spurrey-like Oldenlandia. Pl. ½ foot. 41. O. Rotundifolia (Ham. ex Wall. cat. no. 6190. under Hedyotis) leaves elliptic-ovate, rounded at the apex, downy, but most particularly so on the veins beneath, close together; peduncles long, axillary, and terminal, panicled. O. H. Native of the East Indies, at Goalpara. Hedyotis Scapigera, R. Br. in Wall. cat. no. 881.

Round-leaved Oldenlandia. Pl. ½ to ½ foot. 42. O. Marímta; plant glabrous; stems erect; leaves linear or lanceolate, acute, with revolute edges; panicles terminal; erect; peduncles swelling toward the top, angular, erect; teeth of calyx distant. 2. S. Native of the East Indies, by the sea-side. Hedyotis Marímta, Wall. cat. no. 6192. Old grammoníphila, Vahl. Old. stricta, herb. Russ.

Sea-side Oldenlandia. Pl. 1 foot. 43. O. Oxyphylílla; glabrous; leaves linear-lanceolate, tapering to both ends; peduncles terminal and axillary, dichotomous, panicked; pedicels short, bracteate; teeth of calyx distant. 2. S. Native of the mountains of Silhet. Hedyotis Oxyphylíllla, Wall. cat. no. 6193. Leaves like those of the weeping willow. Stipulas broad at the base, ending in 2 subulate points at the apex, and a small tooth on each side.

Sharp-leaved Oldenlandia. Pl. 2 to 3 feet. 44. O. Héyni; glabrous; leaves linear; stems diffusely branched, panicked; pedicels slender, 2-6 together; stipulas bident, short; teeth of calyx distant. O. F. Native of the East Indies. Hedyotis Héyni, R. Br. in Wall. cat. no. 867. Oldenlandia herbacea, Heyne and Roxb. but not of Lin. Flowers white.

Heyne's Oldenlandia. Pl. 1 foot, diffuse. 45. O. Tubulos;a; glabrous, erect; leaves ovate, acute; peduncles terminal and axillary, umbrallate or capitate; flowers crowded, almost sessile; tube of corolla long, slender. O. F. Native of the East Indies. Hedyotis Tubuláris, R. Br. in Wall. cat. no. 876. Hedyotis mínima, Heyne, in Wall. cat. no. 837.

Tubular-flowed Oldenlandia. Pl. ½ to ½ foot. 46. O. Mypseesis; downy; stems quadruangular; leaves ovate, acute, clothed with rusty down on the nerve and veins beneath, and on the petioles, ciliated on the margins; peduncles terminal and axillary, racemose, branched; flowers almost sessile. O. F. Native of Mysore. Hedyotis Mypséris, Heyne ex Wall. cat. no. 882.

Mysore Oldenlandia. Pl. 1 foot.

† Species not sufficiently known.

47. O. ? hispida (Roth. nov. spec. p. 95. under Hedyotis) the whole plant is hispid from bristles; stem ascending, dichotomous, terete; leaves petiolate, ovate-lanceolate; stipulas acutely toothed; peduncles axillary, bearing few-flowered umbels; corolla twice the length of the calyceal lobes.—Native of the East Indies. Anthers linear, length of corolla. Hedyotis Indica. Rom. et Schultes, syst. 3. p. 195.

Hispida Oldenlandia. Pl. ½ foot, procumbent. 48. O. Aspera (Roth, nov. spec. p. 94. under Hedyotis) the whole plant is rough from papillae; stem straight, filiform, terete; leaves linear-subulate; stipulas linear-subulate, a little toothed; raceme terminal, pedunculate, sub-fasciculate, naked; teeth of calyx linear, 4-times shorter than the tube of the corolla.—Native of the East Indies. Hedyotis hispida, Spreng. syst. 1. p. 415. The stamens being inclosed, it is very doubtful whether it belongs to this genus.

Rough Oldenlandia. Pl. ½ foot. 49. O. Affinis (Roem. et Schultes. syst. 3. p. 194. under Hedyotis) plant erect, much branched; branches rather tetragonal, scabrous at the angles; leaves linear, acuminate, finely ciliated; stipulas tridentate; peduncles disposed in a loose, divaricate, dichotomous panicle; corolla twice the length of the calyx.—Native of the East Indies. Hedyotis dichotoma, Roth. nov. spec. p. 93. but the Oldenlandia dichótoma of Spreng, now called Válhia dichótoma, is a very distinct plant. Corolla blue. Anthers inclosed, and therefore it ought to be excluded from the present genus, but it is said to be nearly allied to O. hispína and O. herbácea.

Allied Oldenlandia. Pl. ½ foot. 50. O. Hírúta (Lin. fil. suppl. p. 127.) stem herbaceous, diffuse, and are as well the calyces hispid; leaves ovate, acute, petiolate, vein; peduncles axillary, bearing few-flowered umbels.—Native of Java. Hedyotis hírúta, Spreng. pag. 2. p. 55.

Hairy Oldenlandia. Pl. diffuse. 51. O. Púllila (Roth, in Willd. act. amem. nat. cur. berol. 4. p. 216.) stem branched, tetragonal, rough; leaves linear, acuminate; racemes axillary, simple, few-flowered.—Native of the East Indies. Hedyotis attenuátá, Willd. l. c. Said to be allied to O. grámnófílla.

Small Oldenlandia. Pl. ½ foot. 52. O. DeBílis (Forst. prod. no. 56.) leaves ovate, sessile; umbels axillary, pedunculate, few-flowered.—Native of the Island of Tongatabu. The rest unknown.


Zanquebar Oldenlandia. Pl. ½ foot. 54. O. Depressá (Willd. spec. 1. p. 675.) stem diffuse; leaves elliptic, petiolate, glabrous; peduncles axillary, twin, 1-flowered.—Native of the East Indies. Hedyotis depressá,
RUBIACEÆ. LXXVIII. GONOTHECA. LXXIX. KOBAUTIA.

Roe. et Schultes, syst. 3. p. 200. A very obscure species, and syn. in Rheed. mal. 10. t. 31. cited for this species is referrible to Portulaca Meridiana.

Depressed Oldenlandia. Pl. prostrate.

N. B. Oldenlandia nudicaulis, Roth, nov. spec. p. 96. and Old. maritima, exclusive perhaps of the synonym of Lin., differs from this genus in the flowers being of 4 distinct petals, and in the want of stipulas; they therefore even do not belong to Rubiaceae, but are probably Caryophyllaceous plants.

Cult. The species are not worth cultivating, unless in botanic gardens. A very sandy soil suits them best, and in both cases of the shrubby kinds will root in sand, under a hand-glass, or by seeds. The annual kinds should be treated like other tender annuals, by being raised on a hot-bed, and afterwards planted out. All the species require a considerable degree of moisture.

LXXVIII. GONOTHECA (from γονή, genus, an angle, and θηκή, theke, a sheath; in reference to the capsule, which is furnished with a double wing on each side). Blum. mes. ex D. C. prod. 4. p. 429. but not of Rafin.—Hedyotia species, Blum. bijdr.

Lin. syst. Tetrádria, Monogynia. Calyx with a somewhat compressed tube, and a short truncate somewhat 4-toothed limb. Corolla having the tube inflated at the base, the throat villous, and the lobes keeled. Stamens inclosed. Style wanting: stigma 2, obtuse. Capsule compressed, margined by a double wing on both sides, which runs down the pedicel, crowned by the tube and short limb of the calyx, and dehiscing through the stigmas, membranous, 2-celled. Seeds numerous, ovate, small, scrobiculate.—A glabrous, erect herb, with the habit of Oldenlandia. Stem divaricate, quadrangular. Leaves lanceolate, almost sessile. Stipulas toothed. Gynes pedunculate, axillary, and terminal, few-flowered.


Blume's Gonotheca. Pl. ½ foot.

Cult. See Kâdus, p. 538. for culture and propagation.

LXXIX. KOBAUTIA (in memory of Francis Kohaut, who collected many plants and other objects of natural history in Senegal). Cham. et Schlecht. in Linnaea. 4. p. 156. D. C. prod. 4. p. 429.—Knóxia and Hedyotis species of authors.

Lin. syst. Tetrándria, Monogynia. Calyx with an obovate tube; teeth acute, separated by acute recesses while in flower, but at last by very broad ones. Corolla with a long terete tube, and oval-lanceolate lobes, which are usually cuspidate by a mucrone. Anthers sessile, within the tube, inclosed under the throat. Style shorter than the anthers, bifid at the apex. Capsule globose, membranous, crowned by the teeth of the calyx, 2-celled, dehiscing at the cells. Seeds innumerable, small, half immersed in pits on the placenta, which are globose and stand on short pedicels.—Erect, twiggly, glabrous, branched herbs, with the habit of Aspérula. Leaves opposite, linear, or linear-lanceolate. Stipulas joined to the petals, furnished with one or few bristles. Gynes terminal, corymbose, or loosely spicate.

1 K. grandiflóra (D. C. prod. 4. p. 430.) leaves linear, lower ones the broadest, and nearly lanceolate: uppermost ones very slender and subulate; stipulas membranous, connecting the petals: lower ones cuspidate in the middle, the rest furnished with 2 bristles on both sides; flowers trichotomously corymbose; lobes of corolla oval, mucronate. F. S. Native of Senegal, from which place it was sent by Becla, under the name of Hedyotis herbacea; and in sandy places at Kounnour, where it was collected by Perrottet and Leprieur. Tube of corolla 6 lines long, and the lobes 3 lines long and ¼ broad.

Great-flowered Kobautia. Shrub ½ to 1 foot.

2 K. senégálensis (Cham. et Schlecht. in Linnaea. 4. p. 156.) leaves linear; floral ones subulate; stipulas with very narrow margins, joining the petals, furnished with 2 bristles; flowers on short pedicels along the branches and at their tops, distant; lobes of corolla lanceolate. F. S. Native of Senegal. Knóxia Senegalensis, Reichb. in Sieb. fl. seneg. exsic. no. 9. Tube of corolla 4½ lines long; and the lobes 2½ lines long.

Senegal Kobautia. Shrub ½ to 1 foot.

3 K. stricta (D. C. prod. 4. p. 430.) leaves linear, with sub-revolute margins; stipulas joined to the petals by a very narrow margin, furnished each with 2 short bristles; flowers trichotomously corymbose; lobes of corolla oblong-linear. O. S. Native of Senegal at Walo and Lampsar, where it was collected by Leprieur and Perrottet; and at Sierra Leone by Azelius. Hedyotis stricta, Smith, in Rees's cyc. vol. 17. no. 21. but not of Wall. Root simple, perpendicular, white. Tube of corolla 3 lines long; and the lobes 2½ lines long and hardly a line broad.

Straight Kobautia. Pl. ½ foot.

4 K. longiflóra (D. C. prod. 4. p. 430.) leaves linear, hardly acute; stipulas short, with many bristles; bristles spreading little a length of membrane; flowers pedicellate along the branches on one side; corolla with a very long tube, and linear, hardly acute lobes. G. S. Native of the south of Africa, where it was collected by Burchell, ex cat. geogr. no. 1987. Tube of corolla 7 lines long; and the lobes 3 lines long, and scarcely a line in breadth. Teeth of calyx short. Pedicels 2½ lines long.

Long-flowered Kobautia. Pl. ½ foot.

5 K. cynàchica (D. C. prod. 4. p. 430.) leaves linear, acute; stipulas membranous, joining the petals; bristles reflexed, twin on both sides, at last deciduous; corymbs few-flowered; lobes of corolla linear, hardly acute. F. G. Native of the south of Africa, where it was collected by Burchell, ex cat. geogr. no. 772. Capsule turbinate. Teeth of calyx short. Tube of corolla 3 lines long with the lobes a little shorter than the tube.

Cynanchica-like Kobautia. Shrub ½ to 1 foot.

7 K. setósá (D. C. prod. 4. p. 430.) leaves linear, cespitate, mucronate, with somewhat revolute edges; stipulas membranous, joining the petals, cleft into 4 spreading bristles on both sides, which are longer than the membrane; corymbs few-flowered; lobes of corolla short, oval. F. G. Native of the south of Africa, where it was collected by Burchell, ex cat. geogr. no. 2322. Plant hardly a hard hand. Bracteas stipulaceous, membranous, multifoil. Tube of corolla hardly 2 lines long.

Bristle-bearing Kobautia. Pl. ½ foot.

7 K. grácilis (D. C. l. c.) leaves linear; branches and peduncles compressed; stipulas truncate, fringed, at length naked; flowers on long pedicules, rising from the forks and from the tops of the branches; lobes of corolla linear-lanceolate, bluntish, a little shorter than the tube. O. F. Native of Nipaü. Hedyotis stricta, Wall. act. soc. asiat. 13. p. 369. but not of Smith. Hedyotis grácilis, Wall. in Roxb. fl. ind. 1. p. 577. Helenium fusca, Hamilt. ex D. Don, prod. fl. nep. p. 134. Tube of corolla 4 lines long; and the lobes 3 lines long, and hardly a line broad.

Slender Kobautia. Pl. ½ to 1 foot.

Cult. For culture and propagation see Oldenlandia above.

Lin. syst. Tetrandria, Monogynia. Calyx with a hemispherical tube, and a 4-cleft or 4-toothed limb. Corolla coriaceous, glabrous inside, salver-shaped: with a long tube and a 4-cleft limb. Genitalia inclosed. Anthers linear or oblong, almost sessile within the tube. Style filiform, thickest at the apex and bifid: lobes bearing papillae inside. Capsule globose or elliptic, 2-celled, half adnate to the calyx, which is sometimes dry and sometimes fleshy, usually crowned by the segments of the calyx, dehiscing at the cells at the apex. Seeds innumerable, small, angular, inserted in the placentas, which are spongy, and fixed to the middle dissepiment.—Smooth Australian subshrubs. Leaves opposite. Stipulas solitary on each side, acute, entire. Flowers in terminal cymes or solitary and axillary, pedunculate.

1 K. Cookiana (Cham. et Schlecht. in Linnaea. 4. p. 158.) branches opposite, terete; leaves linear, acute, with revolute margins; flowers few, terminal; capsule beaked at the apex. K. G. Native of the Island of O-Wahu. The beak of the capsule having both a loculecidal and septiclidal dehiscence at the same time, hence the capsule is at length apparently 4-beaked.

Cook's Kadua. Shrub ½ to 1 foot.


Cordate-leaved Kadua. Shrub ½ to 1 foot.

3 K. Glomerata (Hook. et Arn. in Beech. voy. pt. bot. p. 85.) lower parts of branches almost terete, upper part compressed; leaves oblong-lanceolate, suddenly contracted at the base into a very short petiole; panicle terminal, with elongated opposite branches, bearing each 2 foliose bracteas at the apex, and glomerate flowers; calyx and corolla downy. K. G. Native of the Sandwich Islands. The flowers may be said to be axillary, pedunculate, capitulate, if the axes of the panicle may be considered as a continuation of the branch. Teeth of calyx linear, stiff.

Glomerated-flowered Kadua. Shrub ½ to 1 foot.

4 K. Anserina; plant erect, glabrous, branched; leaves oblong or ovate, short petioles; stipulas undivided, triangular; flowers disposed in fascicles in the axils of the superior leaves, the whole forming interrupted racemes; calyxes downy; tube of corolla very long, terete: lobes obtuse, revolute; style bipartite to the base. K. G. Native of the Sandwich Islands, where it is called by the natives Kioire. Hedyotis conostyla, Gaud. in Freyc. voy. pt. bot. p. 471. t. 91. Oldenlandia conostyla, D. C. prod. 4. p. 428. Nearly allied to the preceding species, according to Arnott.

Arnott's Kadua. Shrub ½ to 1 foot.

5 K. Menziesiana (Cham. et Schlecht. l. c. p. 160.) branches tetragonal; leaves elliptic, petiolate, bluntly acuminate, downy beneath at the base; stipulas glandular, truncate; cymes terminal, few-flowered; peduncles compressed, downy; drupe rather convex at the apex. K. G. Native of the Island of O-Wahu.

Menz's Kadua. Shrub ½ to 1 foot.

6 K. Smithii (Hook. et Arn. in Beech. voy. pt. bot. p. 86.) branches terete, but compressed towards the tops; leaves coriaceous, ovate-elliptic, glabrous, petiolate; stipulas triangular, bluntly apiculate; panicle terminal, trichotomous, dense; calyxes and corollas downy. K. G. Native of the Sandwich Islands. Hedyotis coriacea, Smith, in Rees's cycl. vol. 17. no. 11. The tube of the corolla is long, and the segments of the limb are deflexed, with long-acuminate recurved points.

Smith's Kadua. Shrub ½ to 1 foot.

7 K. Centranthoides (Hook. et Arn. in Beech. voy. pt. bot. p. 85.) branches terete at the base, and compressed at the apex; leaves coriaceous-lanceolate, almost sessile; panicle terminal, with short opposite branches, bearing naked heaps of flowers at their tops; calyx and corolla glabrous. K. G. Native of the Sandwich Islands.

Centranthus-like Kadua. Shrub ½ to 1 foot.

8 K. Romanzoffii (Cham. et Schlecht. in Linnaea. 4. p. 163.) branches tetragonal, densely leafy; leaves obovate, obtuse, or somewhat acuminate, on short petioles, rather coriaceous; stipulas furnished with a sub-glandular mucrone; flowers terminal, 1-3 together, pedicellate; drupe obovate. K. G. Native on the coral island, called Romanzoff's Island.

Romanzoff-island Kadua. Shrub ½ to 1 foot.

9 K. Acuminata (Cham. et Schlecht. l. c. p. 163.) branches terete, compressed towards the tops; leaves lanceolate, long-acuminate, distinctly petiolate, rather coriaceous; stipulas triangular, acuminate; flowers axillary, usually thin, pedicellate; teeth of calyx narrow-lanceolate, equal in length to the tube of the corolla; capsule globose. K. G. Native of the Sandwich islands, particularly of O-Wahu.

Acuminated-leaved Kadua. Shrub ½ to 1 foot.

10 K.? affinis (Cham. et Schlecht. l. c. p. 164.) branches tetragonal, wrinkled transversely; leaves elliptic-lanceolate, acute, obtuse at the base, on short petioles; stipulas membranous, deciduous, toothed a little on both sides; cyme thyrsoid, terminal; drupe nearly globose, crowned by the remaining part of the calyx, indehiscent. K. G. Native of the Island of O-Wahu. Flowers unknown.

Allied Kadua. Shrub ½ to 1 foot.

Cult. None of the species are worth cultivating, except in botanic gardens. They will grow in any light soil; and will be easily increased by cuttings planted under a hand-glass, or by seed, which latter mode will be preferable.

LXXXI. ANOTIS (from a priv. ovae wroc, ens otos, an ear; there are no accessory teeth to the calyx). D. C. prod. 4. p. 431.

—Hedyotis species, Ruiz et Pav. and Cav.—Houstonia species, Lin. and others.

Lin. syst. Tetrandria, Monogynia. Calyx with an obovate tube, and a 4-toothed limb (f. 96. a.); teeth acute, separated by acute recesses, with no accessory ones. Corolla salver-shaped (f. 96. b.), having the tube a little longer than the lobes; limb 4-cleft; throat almost glabrous. Anthers inclosed or a little exerted (f. 96. c). Stigma somewhat 2-lobed (f. 96. c.). Capsule ovate, crowned by the calyx, 2-celled, with a loculecidal dehiscence at the apex. Seeds 4-8 in each cell, ovate, and rather angular.—Subshrubs and herbs, natives of America. Leaves opposite, linear, mucronate or oval. Stipulas undivided or toothed. Flowers terminal, solitary or corymbose. This genus is nearly allied to Rischardtis, but differs from that genus in the want of accessory teeth to the calyx, whence the generic name. The genus probably contains the types of 3 different genera, which it may hereafter be necessary to separate.

Sect. I. Enicottis (this name has been given to this section on account of the plants contained in it having the habit of heaths). D. C. prod. 4. p. 431. Heath-like small shrubs, rarely herbs. Leaves linear, mucronate. Corolla salver-shaped, having the tube longer than the lobes (f. 96. d.) Tube of calyx almost adnate with the ovary to the apex.
1 A. filifórmis D. C. prod. 4. p. 431.) stems herbaceous, creeping, much branched, tetrahedral, glabrous; leaves sessile, linear, acutipetioled, rather ciliolate; stipules small, ciliate; flowers solitary, terminal, almost sessile; anthers exerted. 2. F. Native of Peru, on the Andes, in frigid places. Hedýyótis filiformis, Ruiz et Pavl. fl. per. 1. p. 67. t. 87. f. b. Habit of a species of Gálium. Corolla white; limb spreading at first, but reflexed at last. Lobes of calyx lanceolate, acute. Capsule ovate. (f. 96.)

Filiform Anotis. Pl. proc. 2 A. confértà (D. C. prod. 4. p. 431.) stem creeping, much branched; branches ascending, tetrahedral; leaves linear, acupetioled, flat, glabrous; stipulas subulate; flowers solitary, terminal; anthers at the throat. 3. F. Native of the province of Quito, in very cold places of the Andes, about Assayza. Houstónia bryoidea, Willd. herb. ex Kunth. Hedýyótis hypnoides, H. B. et Kunth, nov. gen. amer. 3. p. 389. Leaves hastily a line long. Corollas white. Capsule glabrous, emarginate.

Crowded Anotis. Pl. creeping. 3 A. hypnóides (D. C. prod. 4. p. 432.) stems suffruticose, creeping, tufted; branches tetrahedral; leaves sessile, linear-lanceolate, glabrous, piliferous at the apex; stipulas subulate at the apex; flowers terminal, sessile, anthers exerted. 4. F. Native of the province of Quito, in very cold places of the Andes, of Tarma and Cantua. Hedýyótis conferta, Ruiz et Pavl. fl. per. 1. p. 57. t. 87. f. a. Leaves 2-3 lines long. Corolla white.

Hypnum-like Anotis. Pl. creeping. 4 A. juniperifólia (D. C. prod. 4. p. 432.) plant suffruticosum, procumbent, much branched; branches tetrahedral; leaves linear, acupetioled, sessile, with revolute edges; stipulas ovate, acute; flowers terminal, tern, pedicellate. 5. F. Native of Peru, in high frigid places of the Andes, of Tarma, and Cantua. Hedýyótis juniperifolia, Ruiz et Pav. fl. per. 1. p. 57. t. 87. f. c. Corollas unknown.

Juniper-leaved Anotis. Pl. proc. 5 A. microphyllá (D. C. l. c.) stems suffruticosum, creeping; branchlets nearly terete; leaves oblong, glabrous on short petioles, piliferous at the apex; stipulas tridentate at the apex; flowers solitary, sessile, terminal, but at length lateral; anthers exerted; cells of capsule 4-5-seeded. 6. F. Native of Peru, near the mines of Guayacó, and the city of Mipecampa. Hedýyótis microphylla, H. B. et Kunth, nov. gen. amer. 3. p. 589. Willd. in Schultes, syst. 3. p. 526.


Cervantes's Anotis. Shrub diffusely tufted. 7 A. thyrsóide (D. C. l. c.) plant shrubby, erect, much branched; branchlets hairy; leaves sessile, linear, glabrous, with revolute margins; stipulas acutely bifid; corymbs terminal, trichotonous; cells of capsule 8-seeded. 8. F. Native of Peru, on high hills in the provinces of Tarma and Caxatambo. Hedýyótis thyrsóidea, Ruiz et Pav. 1. p. 56. t. 88. f. a. Leaves 5-6 lines long. Corollas white. Capsule obcordate. Branchlets subtergalional.


Var. γ, hyssopifólia (D. C. l. c.) plant suffruticosum; leaves an inch long; corymbs terminal, trichotonous. 10. F. Native of Chili, near Coquimbo; and of Peru, at Guamantagua and St. Bonaventura. Hedýyótis hyssopifólia, Cav. icon. 6. p. 54. t. 575. f. 2. Corolla as in var. β. Branchlets bluntly tetragonal. Seeds larger than in any of its congeners, and is perhaps a proper species.

Thyme-leaved Anotis. Shrub 1 to 2 feet. 8 A. lariçifólia (D. C. l. c.) plant suffruticosum, erect, branched, glabrous; leaves sessile, linear, acute, with hardly revolute margins; stipulas acute; peduncles 3-5-flowered, rising from the forks of the branch; anthers exerted. 11. F. Native of the Cordillera of Chili, on the highest mountains. Hedr. lariçifólia, Cav. icon. 6. p. 54. t. 575. f. 1. Corolla of a reddish brown colour, funnel-shaped. Capsule ovate, truncate.

Larch-leaved Anotis. Shrub ½ to 1 foot. 9 A. setósa (D. C. l. c.) plant shrubby, erect, much branched; leaves on short petioles, ovate, acute, ciliately serrulate, glabrous; stipulas conuate, ovate, furnished with many bristles at the apex; flowers terminal, usually by threes. 12. F. Native of Peru, on the Andes at Chupurallana and Huassa-Huassi. Hedr. setósa, Ruiz et Pav. fl. per. 1. p. 56. t. 88. f. a. Corolla large, purple, with a broad terete tube, and having the lobes almost one-half shorter than the tube. Habit of Ráchálitá nítida, but differs from it in the calyx being 4-lobed, without any accessory teeth. Anthers inclosed.


Health-like Anotis. Shrub ½ to ¾ foot. 11 A. lanceoláta (D. C. l. c.) plant shrubby, erect, tetragonal, with the angles a little winged; leaves sessile, lanceolate, acute, glabrous; stipulas lanceolate, membranous; corymbs trichotonous, terminal; corolla funnel-shaped; anthers exerted; capsule globose, half-adnate to the calyx. 14. F. Native of the south of Carolina, where it was detected by Bosc. Hed. lanceoláta, Poir. suppl. 3. p. 14. Genus novum, Fraser, ms. in herb. L'Her. Seeds nearly globose, 4-5 in each cell. Lobes of calyx linear, permanent, exceeding the capsule a little. Corolla purplish.
Lanceolate-leaved Anotis. Pl. ½ to ¾ foot.  
12 A. longifolia; stems erect, branched, tetragonal, very 
downy at the joints; leaves linear-oblong; radical ones 
attenuated at the base; stipulas broad, ovate, entire, bidentate or 
tristate, membranous, white; corolla funnel-shaped. 2. H. 
Native of Florida, in exposed places by the sea side; of Canada, 
about Lake Huron, and abundant about Lake Winecup and the 
49. f. 8. Hook. in bot. mag. 3099. Houstonia angustifolia, 
amer. bor. 1. p. 286. Flowers scarlet, terminal, almost sessile, 
5 in a fascicle. Capsules subterbinate.  

Long-leaved Anotis. Fl. May, July. Pl. ½ foot.  
13 A. ciliolosa; radical leaves ovate, obtuse, attenuated at the 
base, with ciliated edges; cauline ones ovate-spatulate, sessile; 
flowers corymbose, terminal, pedicellate; peduncles trichomes; 
calyx segments linear-lanceolate; stem glabrous, 
borne at the top. 2. H. Native of North America, in 
Goat Island, and at the Falls of Niagara. Houstonia ciliolosa, 
bor. 1. p. 286.  

Ciliated-leaved Anotis. Pl. 1 foot?  
14 A. purpurea; stems erect, branched at the top, and 
downy at the joints; leaves ovate-lanceolate or linear-lanceolate, 
sessile; corymbs terminal. 2. H. Native from Pennsylvania to 
Houstonia purpurea, Lam. ill. 251. Hedyotis umbellata, Walt. 
fl. car. 85. Hed. várians, Michx. fl. amer. bor. 1. p. 80. Flowers 
purple.  


Sect. III. PANETOS (the plants flower all the year round). Raffn. in ann. gen. sc. phys. 5. p. 227. D. C. prod. 4. p. 433. 
Prostrate or creeping plants, with the habit of Anagallis. Leaves 
ovate-roundish. Flowers axillary and terminal, solitary. Calyx 
not adnate to the ovary at the apex, and therefore the capsule 
is naked at the top.  

15 A. rotundifolia (D. C. prod. 4. p. 433.) stems herbaceous, 
prostrate, branched; branches tetragonal; leaves nearly 
orbicular, on short petioles, glabrous, hardly ciliated; stipulas 
small; flowers axillary, solitary, on short pedicels; corolla 
salver-shaped, having the tube 3 times longer than the calyx; 
capsule half-adnate to the calyx. 3. F. Native of Carolina and 
Florida, in dry exposed places by the sea side. Houstonia 
Anábynos procumbens, Walt. car. p. 86. Poiretia procumbens, 
Gmel. syst. 263. Habit of Verónica nummularifolia. Flowers 
white.  

Round-leaved Anotis. Pl. prostrate.  
16 A. salzmanni (D. C. l. c.) stems herbaceous, prostrate, 
branched; leaves nearly orbicular, on short petioles, glabrous, 
hardly ciliated; stipulas hardly any; flowers axillary, solitary, 
having the pedicels exceeding the leaves; corolla campanulate, 
twice the length of the lobes of the calyx, which are oval. 3. S. 
Native of Brazil, about Bahia frequent. Intermediate between 
the preceding and following species. Corollas pale red.  

Salzmann's Anotis. Pl. prostrate.  
17 A. seepens (D. C. prod. 4. p. 433.) stems suffruticose, 
creeping, much branched; branches tetragonal; leaves roundish-
ovate or elliptic, petiolar, acutish, glabrous, with spinulose 
ciliated edges; stipulas dentately ciliated; flowers axillary, soli-
tary, pedunculate; corolla subrotate, ciliated a little; anthers a 
little exerted. 3. F. Native of Quito, on the burning 
Mount Antisana. Hedyotis seepens, H. B. et Kunth, nov. gen. 
amer. 3. p. 390. t. 289. Hed. microphylla, Wildl. herb. in 
Rœm. et Schultes, syst. 3. p. 527. Houstonia microphylla, 
Wildl. herb.? Corolla white, with a very short tube, and the 
lobes of the calyx distant as in Oldenlandia. Seeds usually 
in each cell.  

Creeping Anotis. Pl. creeping.  
18 A. coriacea; plant tufted; stems erect, dichotomous; 
leaves ovate-lanceolate, attenuated at the base; radical ones 
spatulate, and a little hairy; peduncles elongated, 1-flowered; 
corollas salver-shaped, with acute lobes. 2. H. Native of 
Virginia; and of Canada, about Quebec. Houstonia coriacea, 
84. Hedyotis coriacea, Hook. fl. bor. amer. 1. p. 286. A 
small tufted plant, with the habit of Anagallis tenella, with 
light blue flowers. The first peduncles are 2-flowered. There 
is also a variety of this with white flowers.  

1/2 foot.  
19 A. serpyllifolia; plant tufted; stems very short; leaves 
oval, attenuated at the base; peduncles terminal, very long, 
solitary, divaricate; corolla salver-shaped, with acute lobes. 2. H. 
Native of Carolina, on the banks of rivulets in the mountains; 
and of Canada, about Lake William and Lake Superior. Houstonia 
sept. 1. p. 106. Graham, in bot. mag. 2822. Houstonia coriacea 
minor, Pursh, fl. amer. sept. 1. p. 106. Houstonia Linnaei 
286. Flowers white. A small tufted plant, very like the last.  

20 A. tentella; stems creeping, filiform; leaves orbicular, 
aeute, nervated; peduncles terminal, one-flowered, very long. 
3. F. Native of North Carolina, on high mountains. Houstonia 
Very like A. serpyllifolia.  

Slender Anotis. Pl. creeping.  
Cult. This is a genus of pretty little plants. All the species 
require to be grown in small pots, well drained with sherds, in 
a mixture of peat and sand. They are increased by dividing at 
the root. Those natives of warm climates require protection in 
winter, by placing them in a frame or green-house.  

LXXXII. RACHICALLIS (from ραχία, rachia, a crag by 
the sea side, and καλλós, kallos, beauty; because the plants 
ornament the rocks by the sea side). D. C. prod. 4. p. 433. 
Hedyotis species, Swartz, Kunth, &c.  
Lin. syst. Tetrándria, Monogynia. Calyx with a hemis-
pherical tube, and a 4-lobed limb, furnished with from 1-3 acces-
sory teeth between each of the lobes. Corolla with a long terete 
tube, a short spreading bluntly 4-lobed limb, and a beardless 
throat. Anthers at the throat, inclosed. Stigma 2-lobed. Capsule 
rather didymous, dehiscing by 2 valves at the cells, and 
crowned by the teeth of the calyx. Seeds 8-20 in each cell. 
—Small shrubby South American plants, inhabitants of rocks 
by the sea side, with the habit of Passerina. Leaves oblong, 
fleshy, with revolute edges, sessile. Stipulas connate, undivided 
or tridentate. Flowers solitary, sessile.  
1 R. nitida (D. C. prod. 4. p. 433.) plant shrubby, much 
branched; branches crowded, densely leafy; leaves linear, acute, 
fleshy, with revolute margins, glabrous, and shining on both 
surfaces; stipulas connate, short, trifid at the apex; flowers 
solitary, terminal, sessile; corolla glabrous. 3. S. Native near 
Santa Fe de Bogota. Hedyotis nitida, H. B. et Kunth, nov. 
gen. amer. 3. p. 392. Lobes of calyx 4, linear-lanceolate, fur-
nished with 2-3 linear accessory teeth between each. Anthers exerted. Capsule globose, turbinate at the base. Seeds ovate, angular, 8-9 in each cell.

Shining Rchiadalis. Shrubs 2 to 3 feet.

2 R. rupestris (D. C. prod. 4. p. 434.) plant shrubby, with branches branched; branches twisted, corky; leaves crowded in stellate fascicles, oblong, fleshy, with revolute edges, shining above; stipulas connate, pubescent inside; flowers axillary, solitary, sessile; corollas villous, with a curved tube. P. S. Native of the Caribbean Islands, on rocks by the sea side; as of Cuba, Jamaica, &c. Hedýotis rupestris, Swartz, prod. p. 29. H. B. et Kunth, nov. gen. amer. 3. p. 391. Hed. Americana, Jacq. amer. p. 20. Oldenándia rupestris, Lam. dict. p. 4. 535.

—Sloane, jam. t. 292. f. 1. Habit of Passerina. Corolla yellow. Calyx 4-cleft; lobes woolly inside, with 4 accessory teeth between each. Seeds ovate, angular, about 20 in each cell. This plant has been inadequately referred to the genus Buchéna by Smith in Rees's cycl. vol. 17.

Rock Rchiadalis. Shrubs 2 to 3 feet.

3 R. Caracasana (D. C. l. c.) plant suffruticose, much branched; branches leafy at top; leaves oblong, acute, fleshy, with revolute margins, spreading, glabrous, and shining; flowers terminal and axillary, solitary, sessile. P. S. Native of South America, on the southern declivities of the mountains called Silla de Caracas. Hedýotis Caracasana, H. B. et Kunth, nov. gen. amer. 3. p. 393. Corolla violaceous.

Caracas Rchiadalis. Shrubs 1 foot.

Cult. Elegant shrubby plants of difficult culture. A mixture of peat and sand will probably be the best soil for them, and they should be grown in pots half filled with pot-shorns. They may either be increased by seeds or by cuttings planted in sand, with a bell-glass over them. They should be placed on shelves in a greenhouse.

LXXXIII. LuCya (named by De Candolle after the late Lucy Dunal, who made many observations upon the Rubiaceous plants growing in the neighbourhood of Montpellier, as may be seen by comparing the fl. fr. ed. 3. vol. 5. p. 499., sister to Michel Félix Dunal, professor of botany at Montpellier). D. C. prod. 4. p. 434.—Dunália, Spreng. but not of Kunth.—Hedýotis species, Swartz and A. Rich.—Pépis species, Lin.

Lin. syst. Tetrahdria, Monogyinia. Calyx with a hemispherical tube, and the limb of 8 twin teeth or of 4 bifid ones, permanent. Corolla with a very short tube, and a 4-lobed limb; lobes obtuse. Stamens shorter than the corolla. Style short, bifid. Capsule globose, dished, 2-celled, with a loculicidal and half septicidal delusion; hence the capsule appears 8-valved at the apex. Seed 2 in each cell, ex Spreng, 5-6, ex Rich.—A small herb, with the habit of Pépis. Roots fibrous and tuberous. Stems short, glabrous. Leaves almost sessile, cordate-ovate, downy beneath; upper ones usually by fours. Flowers axillary, and nearly terminal, solitary on very short pedicels, small, white.


Tuberous-rooted Lucia. Herb small.

Cult. This plant should be treated like other tender annuals. It is not worth growing except in botanic gardens.


Lin. syst. Tetrahdria, Monogyinia. Calyx with a very short tube, adnate to the bottom of the ovary, and a 4-parted limb; lobes subulate. Corolla with a very short tube, a bearded throat, and a 4-parted limb; lobes or segments oval. Stamens 4, with very short filaments, and inclosed anthers. Style 1, undivided. Capsule ovate, compressed, 2-celled, with a loculicidal delusion. Placentas oblong, ascending, adnate to the bottom of the dissipated. Seeds numerous, very minute, angular, diaphanous. Embryo straight, slender, in fleshy albumen.—A glabrous herb, with the habit of Gálúm or Buffiónia. Leaves opposite, linear-subulate, having their bases connate from the almost entire stipular sheaths. Coryms terminal, dichotomous, cymose, with small sessile flowers in the forks and tops of the branches, each flower propelled by 2-4 bracteae. Corollas white.


Procumbent Polypremum. Pl. procumbent.

Cult. This plant should be treated as other tender annuals.

Tribe IV.


LXXXV. METABOLOS (from μεταβόλος, metaboles, changeable; but the application is not evident). Blum. biijdr. p. 990. D. C. prod. 4. p. 435.—Sclerococcus, Bartl. in herb. Hænke.

Lin. syst. Tetra-Pentándria, Monogyinia. Calyx with an obovate roundish tube, and a 4, rarely 5-parted limb. Corolla funnel-shaped, with a 4, rarely 5-cleft or parted limb. Stamens 4-5, inserted in the throat of the corolla. Style filiform; stamina thickened, 2-4-parted. Berry dry, crowned by the calyx, divisible into 2-4 many-seeded pyrene or nuts. Seeds angular, fixed to prominent placentae.—Suffruticose herbs. Stems tetragonal. Leaves opposite, with parallel veins. Stipulas twin on both sides, cut. Flowers disposed in whorles or axillary heads. This genus is evidently very distinct from Hedýotis in the fruit being indehiscent (ex Blum), and in the cells being usually 4 or 5.

1 M. venüs (Blum. biijdr. p. 991.) stem suffruticose, prostrate; leaves on short petioles, ovate-lanceolate, acuminate, lined with veins, rather scabrous; whorles of flowers glomerate, axillary. P. S. Native of Java, in the province of Buitenzorg, in shady places.

Véiny-leaved Metabolos. Shrub prostrate.

2 M. latifolius (Blum. I. c.) stem suffruticose, divaricate; leaves on longish petioles, elliptic-lanceolate, acuminate at both ends, rather scabrous; flowers disposed in dense axillary glomerate whorles. P. S. Native of Java, on the mountains.

Broad-leaved Metabolos. Shrub diffuse.

3 M. rugosus (Blum. I. c.) stem shrubby, decumbent; leaves
oblong-lanceolate, acuminated, wrinkled, a little ciliated, downy beneath; flowers in dense axillary heaps; fruit containing 4 pyrenees. \( \gamma \), S. Native of Java, on the top of Mount Gede. Stigma exserted, 4-cleft.

**Wrinkled** Metabolos. Shrub procumbent.

4 **M. prostratus** (Blum. l. c.) stem suffruticoso, prostrate; leaves oblong-lanceolate, glabrous; heads of flowers axillary, sessile or pedunculate. \( \gamma \), S. Native of Java, in woods on the mountains.

**Prostrate** Metabolos. Shrub prostrate.

5 **M. nidus** (Blum. l. c.) stem suffruticoso, erect; leaves elliptic-oblong, acuminated at both ends, stiff, glabrous; heads of flowers axillary, bibracteate; calyx campanulate, quadrifid. \( \gamma \), S. Native of Java, on Mount Seribu, and on Mount Bonok, in the province of Bantam. Leaves 6 long.

**Stiff** Metabolos. Shrub.

6 **M. lineatus** (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 435. under the name of **Sclerococcus**) stem herbaceous, erectish, and are, as well as the branches, beset with hairs; leaves on short petioles, ovate-lanceolate, acuminated, downy, lined with veins; heads of flowers somewhat corymbose, axillary, on short peduncules. \( \gamma \), S. Native of Mexico, according to Hænke, herb; but probably of the Philippine Islands. Very like the following species, and probably only a variety of it. Stipulas membranous, and connate at the base, ending in long subulate bristles, as in **M. cerulea**. Flowers small. Stamens a little exserted.

**Lined-leaved** Metabolos. Pl. erect.

7 **M. cerulea** (Blum. bijdr. p. 991.) stem suffruticoso, procumbent, and is, as well as the branches, beset with soft hairs; leaves lanceolate, on short petioles, acuminated, downy, lined with veins; heads of flowers subcorymbose, axillary. \( \gamma \), S. Native of Java, about Buitenzorg, in humid shady places.

**Blue-flowered** Metabolos. Shrub procumbent.

8 **M. radians** (Bartl. in herb. Hænke, under the name of **Sclerococcus**.) stem herbaceous, radicant at the base, glabrous, having 2 downy lines at the apex; leaves lanceolate, petiolate, glabrous, pale beneath; teeth of stipulas setaceous; pedicels axillary, very short, disposed in a kind of half whorls, very short.—Native of the island of Luzon, one of the Philippines.

**Rustling** Metabolos. Pl. creeping.

9 **M. anthophilius** (Bartl. in herb. Hænke, under the generic name of **Sclerococcus**) stems shrubby; leaves linear-lanceolate, almost sessile, lined with veins, downy on the nerves beneath, as well as the branches; stipulas ovate-lanceolate, cuspidate, downy, a little toothed at the apex; flowers on short pedicels, disposed in axillary and terminal heads. \( \gamma \), S. Native of the island of Manilla, near Sorzogon.

**Narrow-leaved** Metabolos. Shrub.

10 **M. ferrugineus** (Bartl. in herb. Hænke, under the generic name **Sclerococcus**, ex D. C. prod. 4. p. 436.) plant shrubby; leaves linear-oblong, attenuated at the base, glabrous above in the adult state, and clothed with rusty wool beneath, particularly on the nerves, as well as the branches; stipulas ovate, acute, quite entire; flowers axillary, glomerate, almost sessile. \( \gamma \), S. Native of Luzon, one of the Philippines, at Sorzogon. Some of the fruit examined have 3 cells only.

**Rusty** Metabolos. Shrub.

11 **M. leyvigtii** (Bartl. in herb. Hænke, under the generic name **Sclerococcus**, ex D. C. l. c.) plant shrubby, smoothish; leaves ovate-lanceolate, petiolate, glabrous above, rather scabrous on the nerves beneath, as well as on the petioles and branches; stipulas lanceolate, pectinately ciliated; flowers axillary, glomerate, almost sessile. \( \gamma \), S. Native of the island of Luzon, one of the Philippines.

**Smooth** Metabolos. Shrub.

**Cult.** For culture and propagation see **Hamélia**, p. 542.


**Lin. syst.** **Tetradria, Monograhy.** Calyx with a subglobose tube, and a 4-lobed limb. Corolla funnel-shaped or salver-shaped, villose outside: with a long cylindrical tube, ovate lobes or segments, and a downy or hairy throat. Stamens 4, inclosed. Style filiform; stigma usually 4, somewhat pressed together into a head. Berry containing 4 pyrenees, rarely 3-2-celled; cells or pyrene many seeded. Seeds minute, angular, dotted.—South American shrubs, with terete villous branches. Leaves oval-lanceolate, acuminated. Spikes terminal, or from the axils of the upper leaves, very long. Flowers disposed in fascicles on one side of the spikes, and sessile along its axis.—This genus is possibly divisible into two or three.


1 **G. fimbriata** (Pers. ench. l. c. p. 132.) leaves ovate, acute, bullately crenated; flowering branches pendulous; teeth of calyx bluntish; stipulas twin on both sides, subulate. \( \gamma \), S. Native of Peru, in groves in the province of Chinchao. Gonzaleziania dependens, Ruiz et Pav. fl. per. l. c. p. 56. t. 86. quinol. suppl. p. 84. t. 1. f. a. Corolla of a purplish rose-colour, woolly, with a bearded throat and acutish lobes. Berries black, woolly.

**Pendulous-branched** Gonzalezia. Shrub 10 to 12 feet. 2 **G. parviflora**; young parts of plant and inflorescence canescence from down, but the older parts are smoothish; leaves elliptic-lanceolate, acuminated at both ends; stipulas triangular, acute, kedeed; cymes 3-7-flowered, on short peduncles, the whole disposed in a terminal, elongated raceme. \( \gamma \), S. Native of Mexico, at Cuesta Grande de Jalacingo. Gonzaleziania? parviflora, Cham. et Schlecht. in Linnaea. 6. p. 415. Leaves half a foot long, feather-nerved, and reticulately veined. Tube of calyx tomentose outside. Corolla smoothish outside, and segments downy, and tube hairy inside. Stigma 2-lobed.

**Small-flowered** Gonzalezia. Shrub.

**Sect. II. Ly gist oides** (from lygistum and idea, similar; the plants contained in this section resemble species of **Ly gistum**). D. C. prod. 4. p. 436.—Buena. Cav. icon. 6. p. 50. t. 571. anal. hist. nat. hisp. 2. p. 279. but not of Polh.—Ly gistum spec. **Lunu** Knt.,—**procycopseum** species, Knt. Berry almost dry, containing 4, rarely 3 or 2 chartaceous pyrenees. Stipulas solitary on each side.

3 **G. tomentosa** (Humb. et Bonpl. pl. equin. 1. p. 225. t. 64.) leaves oblong, petiolate, acuminated, glabrous and bullate above, and clothed with white tomentum beneath, and on the branchlets; stipulas short, ovate, acute. \( \gamma \), S. Native of Peru, in hot places between **Luna** and Ganzanama. H. B. et Knt, nov. gen. amer. 3. p. 416. Corolla white, tomentose on the outside, with a hairy throat, and obtuse lobes.

**Tomentose** Gonzalezia. Shrub 8 to 9 feet. 4 **G. nivea** (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 436.) leaves oval-oblong, cuneated at the base, and acuminated at the apex, smoothish and flat above, and clothed with white tomentum beneath, as well as the branchlets and racemes; stipulas subulate. \( \gamma \), S. Native of Mexico. Very nearly allied to **G. tomentosa**.

**Snowy** Gonzalezia. Shrub 6 to 8 feet. 5 **G. pulv erulesta** (Humb. et Bonpl. pl. equin. 1. p. 228.) leaves lanceolate, obtuse at the base, clothed with powdery pubescence beneath, as well as the branchlets; stipulas subulate. \( \gamma \), S. Native of Peru, in hot places near Ganzanama. Corolla white. The rest unknown. 9
Powdery Gonzalea. Shrub 8 to 9 feet.
6 G. Paname'n's (Pers. ench. 1. p. 132.) leaves oblong, acuminate, acute at the base, petiolate, hairy from very short down above, and whitish from short tumescent beneath; stipulas broad at the base, and subulate at the apex, length of the petioles. F. S. Native of Panama and Mexico. Buena Panamén's, Cav. ikon. 6. p. 571. Branches sub-tetragonal. Corolla reddish yellow.

Panama Gonzalea. Shrub 5 to 7 feet.
7 G. cornicul'à (H. B. et Kunth, nov. gen. amer. 3. p. 416.) leaves oblong or ovate-oblong, acuminate, acute at the base, petiolate, glabrous above, and downy on the nerves and veins beneath, as well as the branchlets; stipulas ovate-subulate, length of the petioles. F. S. Native of New Granada, in rocky places near Honda. Perhaps only a variety of G. Panamén's.

Doggwood-leaved Gonzalea. Shrub.
8 G. spicat'à (D. C. prod. 4. p. 437.) leaves oblong, acuminate, downy on both surfaces; stipulas subulate at the apex; spikes terminal, elongated; calyce lobes linear; fruit almost always 2-celled. F. S. Native of Cuba, near Havana, Porto-Rico, and Guadaloupe. Lygistiun spicatùm, Lam. ill. no. 1477. Gonzalea Panamén's, ex Guadalupa, Spreng. syst. 1. p. 417. ex herb. Balb. Barlèria hirsuta, Jacq. obs. with a good figure.


Spike-flowered Gonzalea. Shrub 8 to 10 feet.
9 G. tincanà'sens (D. C. prod. 4. p. 437.) leaves pubescent above, and canescent from adpressed silky villi beneath; lobes of calyx oblong. F. S. Native of Tobago?

Hoary Gonzalea. Shrub.

Cult. For culture and propagation see Hamélia, p. 542.


Lín. syst. Hezán'dria, Monogynia. Calyx with a subglobose tube, and a short permanent 4-6-toothed limb (f. 97. a.), ex Rich. Corolla with a long tube (f. 97. b.), which is more slender in the middle than any where else (f. 97. b.); and with 6 or short obtuse erect lobes at the apex (f. 97. c.), which appear a little twisted before expansion, densely clothed with yellow down inside, having the recesses or sinuses between the lobes drawn out into little crests. Stamens 6, inclosed (f. 97. d.). Stigmas linear, erectly stellate (f. 97. e.). Berries globose (f. 97. g.), crowned by the calyx (f. 97. h.), containing 6 brittle many seeded triquetrous pyrenes (f. 97. c.), which are furrowed inside. Seeds subglobose, truncate at the base. Albumen fleshy. — South American trees or shrubs, with striated or quadrangular branches. Leaves oval, acuminate at both ends, on short petioles, clothed with short down beneath. Stipulas on both sides, lanceolate-subulate. Thyrses terminal, many-flowered, spike-formed or panicle-formed; peduncles opposite. Flowers scarlet.

1 I. spicéiformis (D. C. prod. 4. p. 437.) leaves oval-oblong, acuminate, acute at the base; thyrses spike-formed; flowers on long pedicels along the axis. F. S. Native of Guiana or Cayenne, where it was collected by Patris. Leaves and flowers like those of I. coccinea, but differing in the inflorescence. Spike cylindrical, having the flowers on the lower part remote and opposite, and those at the top crowded. Corollas scarlet.

Spike-formed Isertia. Shrub 10 to 12 feet.

3 I. hamè'm (Vahl, ecol. amer. 2. p. 27.) leaves oval, acuminate, acute at the base; thyrses oblong, panicled. F. S. Native of Guiana, Cayenne, and Maranham, as also on the banks of the Madeleine, among bushes. Guettàrdia coccinea, Audl. guian. 1. p. 317. t. 125. Lam. ill. t. 259. Corolla an inch long, velvety on the outside, scarlet. Berries red. There is a variety of this plant, according to Kunth, having the leaves disposed 3 in a whorl. The wood is bitter. A decoction of the leaves is used by the Creoles in fomentations. (fig. 97.


1 I. hamè'm (D. C. prod. 4. p. 437.) leaves oval, acuminate at both ends; thyrses ovate, panicle-formed, with verticillate branches. F. S. Native of Mexico. Isertia coccinea, Barl. in herb. Hænke, ex D. C. 1. c. Calyces as in I. parviflora. Corolla scarlet, a little smaller than those of the preceding, but one-half larger than those of the following, clothed with fine velvety down on the outside. (Hænke's Isertia. Shrub 8 to 10 feet.

4 I. parviflora (Vahl, ecol. amer. 2. p. 28. t. 15.) upper leaves oblong; lower ones cordate at the base; thyrses ovate, panicle-formed, with opposite branches. F. S. Native of Trinidad. Leaves almost glabrous, except on the nerves. Teeth of calyx 4, and 2 of these are larger than the rest, and are probably formed of 2 combined ones each. Corolla scarlet, unguicular, glabrous on the outside. Fruit unknown. Small-flowered Isertia. Shrub 8 to 10 feet.

Cult. The species are worth cultivating in every collection of stove plants, for the sake of their leaves and panicles of showy scarlet blossoms; their culture and propagation are the same as that recommended for Hamélia, p. 542.

Tribe V.


Lín. syst. Pentàndria, Monogynia. Calyx with an oblong tube, and a 5-toothed limb, 2 of the teeth opposite each other, larger than the rest, outer ones erect, incurved, the 2 smaller teeth connivent. Corolla and stamens unknown. Berry oblong, crowned by the limb of the calyx, 4-celled. Seeds many, nestling in the pulp. Albumen fleshy.—Perhaps this genus is distinct from Gonzalea or Evós-mià, but it is hardly known.

1 T. d'ub'lla (Gært. 1. c.) F. S. Native of Chili. Nothing is known of this plant except the fruit.

Doubtful Tepesia. Shrub.

Cult. For culture and propagation see Hamélia, p. 542.

LXXXIX. EVO'SMIÀ (from ēv, ev, well, and òmē,

**Lin. syst.** Tetra-Pentândria, Monogynía. Calyx with an ovate tube, and a very short 4-toothed limb (f. 98. a.). Corolla subrotate, 4-cleft beyond the middle (f. 98. e. b.), Stamens 4, inserted in the throat (f. 98. b.), a little exserted or inclosed; anthers ovate. Style filiform; stigma thick or 4-lobed. Fruit ovate (f. 98. f.), crowned by the calyx (f. 98. g.), 4-celled (f. 98. h.); cells many seeded.—Glabrous shrubs or small trees, with terete branches, natives of South America. Leaves petiolar, oval, acute at both ends, membranous. Stipulas ovate, acute, short, deciduous. Racemes short, by twos or threes from the axils of the lower leaves; pedicels elongated, capillary. Flowers red. The young fruit in *E. Caripensis* is sweet-scented; hence the generic name.

**E. Caripensis** (Humb. et Bonpl. l. c.) leaves oval, acuminate at both ends; racemes loose, a little longer than the petioles; pedicels slender, elongated, h. S. Native of South America, in the province of Cumana, near Caripe. Flowers red (f. 98.).

**Caripe Evosmia.** Tree 30 ft.

**2 E. aggregata** (Spreng. syl. 1. p. 417.) leaves lanceolate, acuminate; flowers in fascicles; pedicels shorter than the calyx. h. S. Native of Peru, in groves on the Andes at Cuchero, Chinchao, and Muna.

O-Higginsia aggregata, Ruiz et Pav. fl. per. 1. p. 55. t. 83. f. b. Higginsia aggregata, Pers. ench. 1. p. 133. According to Jussieu, this plant is referrible to *Sabicea*, but according to Kunth to *Gonzalezia*. But it certainly differs from all the other species of *O-Higginsia* of the fl. per. in the fruit being 4-celled and many-seeded. Flowers red.

**Aggregate-flowered Evosmia.** Shrub.

**Cult.** For culture and propagation see *Hamelia*, p. 542.


**Lin. syst.** Tetra-Pentándria, Monogynía. Calyx with an oblong or turbinate tube, and a 4.5-parted permanent limb. Corolla salver-shaped, with a long slender tube, a hairy throat, and a 4.5-parted limb: with the lobes acute. Stamens 4.5, inclosed or hardly exserted. Style filiform, clavate at the apex, 4.5-lobed. Berry almost globose, crowned by the calyx, 4.5-celled; cells many seeded. Seeds minute, angular. Climbing shrubs or subshrubs. Leaves oval, acute, on short petioles. Stipulas solitary on both sides. Flowers white, axillary, in sessile fascicles, or corymbose and pedunculate. Corollas pilose.

**§ 1. Parts of flowers quinary.**


**Grey Sabicea.** Shrub cl.

2 *S. hi'ra* (Swartz, prod. 1. p. 46.) leaves ovate-lanceolate, acuminate, hairy on both surfaces; stipulas cordate-ovate, large, membranous; umbels 3-flowered, on short peduncles, involucrum of 4 leaves. h. S. Native of Jamaica, and probably of Trinidad, if the specimen in Sieb. Fl. trin. no. 327. be the same; of Porto-Rico, according to specimens from Bertero; and of Mexico, ex icon. fl. mex. ined. Flowers white. Berries snow white when ripe, ex Swartz; but in the figure in fl. mex. they are painted reddish, and is therefore probably a distinct species. Branches striated, hairy.

**Hairy Sabicea.** Shrub cl.

3 *S. hirsuta* (H. B. et Kunth, nov. gen. amer. 3. p. 417.) leaves elliptic-oblong, acuminate, pilose above, and hairy beneath; stipulas roundish-ovate, acute, reflexed; flowers disposed in verticillate fascicles, sessile. h. S. Native of South America, on the banks of the Orinoco; of Mexico, ex Hænke, and probably of Peru. S. villosa, Röm. et Schultes, syst. 5. p. 265. Schwenkfeldia villosa, Willd. rel. mss. Schwenkfeldia hirsuta, Spreng. syst. 1. p. 765. Flowers white.

**Hirsute Sabicea.** Shrub cl.

4 *S. eriantha* (D. C. prod. 4. p. 439.) leaves elliptic-oblong, acuminate, pilose above, and clothed with hairy tomentum beneath; branches very hairy; stipulas ovate, acute, glabrous inside; flowers numerous, axillary, sessile; lobes of calyx linear; tube of corolla very pilose on the outside. h. S. Native of Brazil, at Bahia, in hedges, where it was collected by Salzmann, G. Don, &c.

**Woolly-flowered Sabicea.** Shrub cl.

5 *S. triflora* (D. C. prod. 4. p. 439.) stems twiggly, velvety; leaves on short petioles, oblong-lanceolate, acuminate, pale and villous beneath; stipulas lanceolate-subulate, undivided; flowers axillary, 1-3-together, rising from a short peduncle; bracteoles ciliated; ovary long, glabrous, crowned by the elongated linear-subulate calycine teeth. h. S. Native of Madagascar. Triosteum triflorum, Vahl, symb. 3. p. 37.

**Three-flowered Sabicea.** Shrub cl.?

6 *S. diversifolia* (Pers. ench. 1. p. 203.) under side of leaves and branchlets hairy: the opposite leaves very unequal among themselves, the larger one broad, elliptic or ovate, obtuse, glabrous above, and hoary beneath; the smaller one bracteae-formed; flowers almost sessile, glomerate in the axils of the smaller leaves. h. S. Native of Madagascar and the Mauritius. Stamens half exserted. Berry pea-formed, 5-celled, crowned by 5 bristles, ex A. Rich. Schwenkfeldia diversifolia, Spreng. syst. 1. p. 765. The rest unknown. Perhaps this plant is properly referred to the present genus.

**Diverse-leaved Sabicea.** Shrub cl.

**§ 2. Parts of flowers usually or always quaternary.**

7 *S. aspera* (Aubl. guian. 1. p. 194. t. 76.) leaves elliptic, acuminate, rough above, and villous beneath; stipulas oval-oblong, acute; flowers sessile, disposed in subverticillate fascicles. h. S. Native of Guiana, on the banks of the river Sinemari. Lam. ill. t. 165. Schwenkfeldia aspera, Wild. spec. 1. p. 982. Flowers white. Berries red. Parts of flowers and fruit varying from quaternary to quinary, ex Aubl.

**Rough Sabicea.** Shrub cl.

8 *S. umbella* (Pers. ench. 1. p. 203.) leaves oval, acuminate, acute at the base, sebrosus on both surfaces from adpressed down, pale beneath; stipulas ovate, spreading; coryisms many-flowered, pedunculate. h. S. Native of Peru, in groves on the Andes at Cuchero, Macora, and Chinchao.

Umbellate-flowered Sabicea. Shrub cl.

9 S. pu'mila (Bartl. in herb. Hämke, ex D. C. prod. 4. p. 440.) stem herbaceous, glabrous; leaves oblong-lanceolate, glabrous, ciliated with silky down; stipulas subulate; heads pedunculate, axillary, few-flowered, glabrous.—Native of Peru, on the mountains about the Guanoco.

Dwarf Sabicea. Pl. cl.?

Cult. For culture and propagation see Olóstyla below.

XCI. OLOSTYLA (from ὕλος, holos, entire, and στυλός, stylós, a style; the style is undivided). D. C. prod. 4. p. 440.—Stylocorina, Labill. sert. cale. p. 47. but not of Cav.

Lin. syst. Pentándria, Monogynía. Calyx with an ovate tube, and a very short 5-toothed limb. Corolla sub-rotate, with a short tube, which is pilose inside, and a 5-lobed limb; lobes valvate in aestivation, linear-lanceolate, with inflexed edges. Stamens 5, inserted in the throat of the corolla; anthers linear, exserted. Style clavate, undivided. Berry glabrous, crowned by the teeth of the calyx and urceolus, 4-celled; cells many-seeded. Seeds minute, elliptic, nestling in the pulp.—A glabrous unarmed shrub. Leaves opposite, obovate-oblong, coriaceous, on short petioles. Stipulas broad, short, apiculate. Flowers disposed in a terminal somewhat thyrsoid corymb.—This genus differs from Stylocorina in the fruit being 4-celled, not 2-celled as in that genus.


Corymbose-flowered Olóstyla. Shrub 5 to 6 feet.

Cult. A mixture of loam, peat, and sand will suit this shrub; and cuttings will root in sand under a hand-glass. It is a very pretty shrub, and therefore worth cultivating.

XCl. AXANTHES (from αξών, axon, an axle-tree, and ἀυξο-, anthos, a flower; the flowers are disposed in axillary heads or corymbos). Blum. bijdr. p. 1002. D. C. prod. 4. p. 440.—Wallichia, Reinw. cat. hort. buit. ex flora. 1825. p. 107. but not of Roxb. nor D. C.—Maschalálnte, Blum. herb. ex D. C. l. c.

Lin. syst. Pentándria, Monogynía. Flowers hermaphroditic, or dioecious by abortion. Calyx with an urceolate tube and almost entire limb. Corolla rotate, with a short cylindrical tube, which is furnished with 5 fascicles of hairs in the throat, and spreading lobes. Stamens 5 in the hermaphroditic flowers, inserted in the throat of the corolla, hardly exserted. Ovary and style wanting in the male flowers, but the ovary in the female flowers is covered by a sulate disk. Style short; stigma 5-lobed; lobes at first connivent. Berry globose, crowned by the permanent calyx, 5-celled, many-seeded; placenta fleshy. Seeds minute, shrunken with depressed dots.—Shrubs or trees. Leaves opposite. Flowers disposed in axillary heads or cymes, rarely in corymbos.

* Flowers dioecious by abortion.

1 A. macróphyllá (Blum. bijdr. p. 1002.) stem shrubby; ultimate branches rather tetragonal; leaves oblong, much acuminate, acutish at the base, shining above, but clothed with adpressed silky down beneath; heads of flowers axillary, sessile, involucrated. h. S. Native of Java, in mountain woods.

Long-leaved Axanthes. Shrub.

2 A. tomentósa (Blum. herb. and mss. ex D. C. prod. 4. p. 440.) stem unknown; branches geniculated, clothed with velvety tomentum; leaves oblong, much acuminate, glabrous above, but clothed with velvety tomentum on the nerves beneath as well as on the petioles; cymes pedunculate, axillary. h. S. Native of Pulo Penang.

Tomentose Axanthes. Shrub.

3 A. strióga (Blum. bijdr. p. 1002.) stem arborescent; ultimate branches geniculated, striose; leaves oblong, attenuated at both ends, glabrous above, but rather striose on the veins beneath; flowers on short peduncles, crowded, axillary. h. S. Native of Java, on the higher mountains, in woods. Wallichia arborea, Reinw. cat. hort. buit. p. 11. ex Blume.

Arboaceous Axanthes. Tree.

5 A. timórie'nsis (D. C. prod. 4. p. 441.) stem unknown; branchlets terete, glabrous; leaves oblong-lanceolate, acuminated at both ends, glabrous; cymes pedunculate, axillary. h. S. Native of Java, on the top of Mount Burangrang.

Corymbose-flowered Axanthes. Tree.

Cult. See Hamélia, p. 542. for culture and propagation.

XCl. UROPHYLLUM (from όυρο, oura, a tail, and φύλλον, phyllon, a leaf; the leaves terminate in very long taper points). Jack and Wall. in Roxb. fl. ind. 2. p. 184. D. C. prod. 4. p. 441.—Wallichia, Roxb. ined. but not of others.


1 U. vili'árum (Jack and Wall. l. c.) shrub villous; branchlets terete; calyx 5-lobed. h. S. Native of Pulo Penang. Branches as well as the veins of the leaves densely clothed with soft hairs. Leaves shining above and villous beneath, 10 inches long.


2 U. glábrum (Jack and Wall. l. c.) shrub glabrous; branches tetragonal; calyx almost entire. h. S. Native of Pulo Penang, where it is called Loda Utan by the Malays. Leaves about 6 inches long.

Glabrous Urophyllum. Shrub.

Cult. See Hamélia, p. 542. for culture and propagation.

XCIV. HAMELIA (so named in honour of Henry Louis du Hamel du Monceau, the celebrated author of several valuable

**Leaves verticillate.**

1 H. pâtens (Jaq. amer. p. 72. t. 50. pict. t. 72.) leaves 3 in a whorl, oval-oblong, acuminate at both ends, clothed with villous pubescence; cymes di-trichotomous, coloured, disposed in a terminal pedunculate umbel; corollas cylindrical. Ψ. S. Native of St. Domingo, Cuba, Mexico. Brazil, Peru, &c. in hedges on the mountains. Lam. spec. 246. Smith, exot. bot. t. 24. Geert. fil. carp. 3. p. 196. f. 3. H. cocinea, Swartz, prod. p. 46. Duhamélia pâtens, Pers. ench. 1. p. 203. H. pâtens, Ruiz et Pav. fl. per. 2. p. 221. f. 7. Flowers almost scarlet. Berries black. Branches villous at top. There are varieties of this species with velvety, villous, or downy leaves, always most so on the under surface.

Var. β. crêcet (Lam. dict. 3. p. 68.) racemes erect. Ψ. S. Native of Carthagena, in woods; and of Mango Island, H. crêcet, Jaq. amer. p. 71.


**Spreading** Hamelia. Fl. Jul. Aug. Clt. 1759. Sh. 5 to 10 ft. 2 H. xerülēnnes (H. B. et Kunth, nov. gen. amer. 3. p. 414) leaves 3 in a whorl, elliptic-oblong, acuminate, acute at the base, glabrous above and downy beneath; cymes composed of 5-6 spikes, terminal; corollas campanulate ventricose. Ψ. S. Native of Mexico on the burning Mount Xorullo. Flowers of a yellowish red colour.

**Xorullo** Hamelia. Shrub 4 to 5 feet.

3 H. spîcnæera (Ruiz et Pav. fl. per. 2. p. 69. t. 221. f. b.) leaves 3 in a whorl, oblong, hairy on both surfaces; cymes coloured, disposed in a terminal panicle; corollas cylindrically pentagonal. Ψ. S. Native of Peru, in groves. Duhamelia sphenocarpa, Pers. Petoide and peduncles red. Flowers viscid, petalate, pedicellate. Corollas of a reddish coppery colour. Berry dark purple, globose, hispid.


4 H. latîpōlia (Rich. in Sieb. fl. trin. no. 32.) leaves 3 in a whorl, ovate-lanceolate, acuminate, acute at the base, glabrous on both surfaces; cymes dichotomous, few-flowered, disposed in a terminal pedunculate umbel; corollas cylindrical. Ψ. S. Native of Trinidad. Flowers smaller than those of H. pâtens, but similar in colour.


5 H. ventricōsa (Swartz, prod. p. 46. fl. ind. occ. 1. p. 445). leaves 3 in a whorl, quite glabrous, oval-oblong, acuminate; racemes terminal (rarely axillary); flowers on long pedicels; corollas tubularly campanulate, ventricose. Ψ. S. Native of Jamaica, on hills, and among bushes in arid places, where we have seen it in great abundance from Kingston to the bottom of the Port Royal mountains, by the road side, and about Spanish Town; and of Mexico, about Real del Monte. Lindl. bot. reg. t. 1195. Sims, bot. mag. t. 1894. H. grandiflōra, L’Her. sert. angl. 4. t. 7. Salish, par. t. 55. Duhamélia ventricōsa, Pers. ench. 1. p. 203.—Sloane, hist. jam. 2. no. 63. t. 183. f. 2. Margins of leaves at length becoming reddish. Flowers yellow, almost an inch long. Berries oblong, scarlet. This species grows to a considerable sized tree, affording boards for tables and cabinets, of the softness and grain of elm, whence its name Spanish elm. The cabinet makers, who use it much, call it Prince-wood. Perhaps H. pauciflōra, Willd. rel. in Rœm. et Schultes, syst. 5. p. 207. Stigmas linear-subulate, not pinnatifid, as said by Willdenow. Corollas glabrous, purple. There is a variety of this species having a 6-cleft corolla and 6 stamens.


6 H. suaveōlers (H. B. et Kunth, nov. gen. amer. 3. p. 414.) leaves 3-4 in a whorl, oblong, acuminate, glabrous; cymes branched, of 5-6 rays; flowers almost sessile; corollas tubular, ventricose at the base. Ψ. S. Native of New Granada, on the banks of the Magdalena, near Carapata and Badilla. Duhamélia odorāta, Rœm. et Schultes, syst. 5. p. 207. Stigmas linear-subulate, not pinnatifid, as said by Willdenow. Corollas glabrous, purple. There is a variety of this species having a 6-cleft corolla and 6 stamens.


7 H. chrysaštā (Swartz. prod. p. 46. fl. ind. occ. 1. p. 444.) leaves opposite, oval-oblong, cuneated, acuminate, quite glabrous; racemes terminal; flowers pedicellate; corollas cylindrical. Ψ. S. Native of Jamaica, on the mountains among bushes; and according to Hanke, herb. of Mexico; and at Caracas, according to Vargas.—Browne, jam. 166. t. 14. f. 1.—Plum. amer. ed. Burm. t. 218. f. 1.—Duhamélia chrysaštā, Pers. ench. 1. p. 203. exclusive of the syn. of Jaq. H. pâtens, West. St. Croix. p. 200. Flowers yellow, almost an inch long, inflated in the middle.


8 H. lu'teà (Roht, ex Smith, in Rees’s cyc. vol. 17. no. 4.) leaves opposite, oval, acuminate, acute at the base, glabrous; cymes terminal; flowers almost sessile; corollas short, with a ventricose throat. Ψ. S. Native of Santa Cruz, and at Caracas. H. chrysaštā, Jaq. coll. 3. p. 204. icon. rar. 2. t. 335. but not of Swartz. Hamélia species, no. 2 without a name. West. St. Cr. p. 273. Corollas yellow, 4-5 lines long.

**Yellow-flowered** Hamelia. Shrub 4 to 5 feet.

9 H. axilērīs (Swartz, prod. p. 46. fl. ind. occ. 1. p. 443.) leaves opposite, ovate-lanceolate, glabrous; stem suffrutescent; cymes bifid or trifid, pedunculate, rising from the forks of the branches; flowers secund, sessile; corollas tubular, pentagonal; berry oval-oblong, crowned by the 5 distant subulate teeth of the calyx. Ψ. S. Native of Jamaica, in rocky places among...
bushes; and of St. Domingo near rivers. Branches sub-herbaceous. Flowers pale yellow. Berries small.

Var. β, appendiculata (D. C. prod. 4. p. 442.) leaves on longer pedioles, and more distinctly acuminate.  

H. S. Native of Porto Rico. H. appendiculata, Gaertn. fil. carp. 3. p. 64. t. 91. f. 4. H. lócida. Desf.


10 H. Rostrata (Bartl. in herb. Henke, ex D. C. prod. 4. p. 442.) leaves usually opposite, rarely 3 in a whorl, ovate, acuminate, downy beneath, as well as the pedioles and branchlets; cymes terminal, 3-4-parted, downy; corollas glabrous; berries ovate-globose, glabrous, beaked.  

H. S. Native of Mexico, at Acapulco. Branches terete or trigonal.

Beaked-berried Hamelia. Shrub 4 to 5 feet.

Cult. All the species of this genus are very ornamental while in blossom. They are free flowerers and of easy culture. A mixture of loam and peat is the best soil for them; cuttings strike root freely in the same kind of soil, under a hand-glass, in a moist heat.


Lin. syst. Pentandria, Monogynia. Flowers incompletely unisexual by abortion. Limb of calyx tubular, 5-toothed. Corolla tubular, longer than the calyx; limb spreading, 5-parted: segments ovate, acute. Stamens 5, almost sessile, inserted in the tube; anthers linear, incised. Style simple, in the male flower it is clavate, striated, and terminated by an acute simple stigma; in the female and hermaphrodite flowers the anthers are shorter than in the males, and the stigmas are 5 and linear. Berry somewhat corticate, globose, depressed, crowned by the tubular limb of the calyx, 5-celled; cells many-seeded. Seeds wrapped in thin pulp.—A small tree. Leaves opposite, coriaceous, oblong, acuminate. Stipulas rather connate, entire, acute. Flowers solitary or in fascicles, terminating the branches, cream-coloured, almost sessile.—Habit of Génipôa.

1 A. edulis (A. Rich. l. c.).  


Cult. See Hamelia above for culture and propagation.


Lin. syst. Pentáctandra, Monogynia. Calyx with an ovate tube, and a short truncate or sub-dentilicate limb. Corolla funnel-shaped, with a terete tube, and a rather dilated pilose throat; lobes or segments 5-8, spreading, thickened inside, and sometimes furnished with a retrograde callous toothlet. Anthers 5-8, sessile, linear, inserted in the throat of the corolla, hardly exserted. Style short; stigma bifid (ex Vahl and Rich), quadrifid (ex Swartz). Berries pea-formed, 3-4-sided, crowned by the limb of the calyx, 2-4-celled; cells many-seeded. Seeds very minute, nestling in the pulp.—Glabrous radicant shrubs, growing on trees. Leaves petiolate, oval or lanceolate, coriaceous. Stipulas oval-oblong, falling off at length, but those at the base of the peduncles are more permanent, and may be called bracteas. Peduncles solitary or numerous, longer than the pedioles. Flowers 4-12 together, sessile, capitulate, girded by an orbicular, entire, or rather lobed involucrum, which is formed from two or more bracteas.

1 S. capitâta (Vahl, cl. 1. p. 35. t. 5, exclusive of the syn. of Swartz) leaves elliptic, bluntish, but more acute at the base; peduncles solitary, terminal; head of flowers girded by a sublobe involucrum; limb of calyx truncate, quite entire; corolla 5-6-lobed.  


Capitate-flowered Schraderia. Shrub cl.

2 S. Brasileíssis (Mart. in Schultes, syst. 7. p. 164.) leaves elliptic, obtuse; peduncle terminal, solitary; head of flowers surrounded by an entire involucrum; limb of calyx quite entire; corolla 5-6-lobed: the segments reflexed.  

H. S. Native of Brazil, in woods at Lake d’Almada, in the province of Bahia.

Brazilian Schraderia. Shrub cl.

3 S. cephalôtes (Willd. spec. 2. p. 238.) leaves oblong, acuminate; peduncle terminal, solitary, short; head of flowers surrounded by an entire involucrum; limb of calyx somewhat denticulated; corolla 7-8-lobed.  


4 S. polyce’phala (D. C. prod. 4. p. 444.) leaves ovate, acute; peduncles numerous, terminal; heads surrounded by an entire involucrum; limb of calyx quite entire; corolla 5-lobed.  

H. S. Native of French Guiana, where it was collected by Patris. Berries ovate, crowned by the entire limb of the calyx, 2-3-celled; cells many-seeded.

Many-headed Schraderia. Shrub cl.

Cult. The species of this genus are elegant when in flower. Vegetable mould is the best soil for them; and they will be easily increased by separating the rooted branches.

XCVII. BRIGNOLIA (in honour of J. L. Brignoli, a professor of Verona, author of Fasciculus rarioorum plantarum Forajuliensium, 4to. Urbina, 1810). D. C. diss. ined. with a figure, prod. 4. p. 444. but not of Bertol.

Lin. syst. Hexántandra, Monogynia. Calyx with a short roundish tube, and a 4-toothed limb; 2 of the teeth larger than the other 2, and probably made up of 2 combined ones. Corolla with a short tube, and a 6-lobed limb; lobes linear-oblong, bluntish, longer than the tube, very hairy inside as well as the throat. Stamens 6, inserted in the tube, alternating with the lobes; filaments very short; anthers linear. Style filiform; stigma capitate, undivided. Fruit globose, fleshy, many-seeded, crowned by the calyx. The rest not sufficiently known. A shrub or tree. Branches terete, villous. Leaves opposite, petiolate, oval-oblong, obtuse at the base, acuminate at the apex, downy on the pedioles and nerves, the rest glabrous. Stipulas twin on both sides, lanceolate, acuminate, but when young combined into an inter-petiolar stipula, but at length separating from the base to the apex into 2 parts each. Corymbs terminal, pedunculate, with a short hairy rachis, and downy crowded, trichotomous branches. Bracteas ciliato. Flowers sessile in the forks of the corymb, and at the tops of the pedioles.—This genus is nearly allied to Iserita, but from the fruit not being sufficiently known, its place in the order is very doubtful.

1 B. acuminâta (D. C. prod. 4. p. 444.).  

H. S. Native of Trinidad, where it was collected by Lockhart. Leaves almost
a foot long and 3 inches broad, pale beneath. Petioles 8-12 lines long, a little longer than the stipulas. Corymbs much shorter than the leaves.

_Acuminate-leaved Brignolia_. Shrub. 

_Cult._ For culture and propagation see _Hamelia_, p. 542.


_Lin. syst._ **Pentádria**, _Monogyniá_. Calyx with an ovate tube, and a short, entire, urceolate, tubular, somewhat pentagonal limb, with a very short 5-toothed sinuate border. Corolla tubular, hardly dilated towards the apex, with a 5-parted limb: having the segments long-acuminate, and the inner surfaces clothed with dense silky down. Stamens 5, inserted in the tube; filaments short; anthers cordate-oblong, inclosed. Style simple. Berry roundish, crowned by the limb of the calyx, 4-6 but usually 5-celled; cells many-seeded. Seed very minute, fixed to a rather fleshy, 2-lobed, prominent trophosperm.—Small perennial, glabrous shrubs. Leaves opposite, petioled, ovate-oblong, acute at both ends. Stipulas solitary, short, broad, acute, permanent. Peduncles axillary, short, 1 or few-flowered.

1 P. _Guianénis_ (Aubl. guian. 1. p. 196. t. 77.) leaves on long petioles; pedicels numerous, 1-flowered, shorter than the petioles. _h._ S. Native of Guiana, in marshes. Leaves a foot long and 4 inches broad. Berries green.

_Guiana Patima_. Shrub 2 to 3 feet.

2 P. _Forsythii_ (D. C. prod. 4. p. 444.) leaves hardly petiolate; racemes few-flowered, longer than the petioles. _h._ S. Native country as well as the flowers known. This plant was received from Mr. Forsyth under the name of _Patima Guianénis_ of Aubl. but differs from the plant of Aubl. in the characters indicated.

_Forsythi's Patima_. Shrub 2 to 3 feet.

_Cult._ For culture and propagation see _Hamelia_, p. 542.

**XCIX. POLYPHYRÁGMON (from _poly_, _poly_, many, and _phyragmos_, _phragmas_, a dissepiment; there is a small transverse sepals separating each seed).** Desf. mem. mus. 6. p. 5. t. 2. Juss. mem. mus. 6. p. 399. D. C. prod. 4. p. 445.

_Lin. syst._ **Decándria**, _Monogyniá_. Calyx with an ovate tube, and a short, permanent, entire, or 5-toothed limb. Corolla salver-shaped, bristly, with a terete tube, and a 10-parted limb; lobes elliptic-oblong. Stamens 10, inserted in the middle of the tube of the corolla; anthers linear, inclosed. Style 1, thickened, furrowed lengthwise; stigmas 6-7 or more. Berry globose, 10-20-celled. Seeds oblong, disposed in 1 row in each cell, and as if they were imbricated, separated by small transverse dissepiments.—Shrubs. Leaves opposite, oval, lanceolate, acuminate at both ends, clothed with adpressed silky down beneath. Stipulas deciduous. Peduncles short, axillary, 1-flowered.

1 P. _seáneum_ (Desf. mem. mus. 6. p. 6. t. 2.) calyx quite entire. _h._ S. Native of the Island of Timor. _Silky Polyphyragmon_. Shrub.

2 P. _mixtus_ (A. Rich. diss. ex D. C. prod. 4. p. 445.) calyx 5-toothed. _h._ S. Native country unknown. _Erfthisál uniflóra_, Gaertn. fil. carp. 3. p. 93. t. 196. f. 4. Perhaps this plant is referred to _Timóneá_.

_Smaller Polyphyragmon_. Shrub. 

_Cult._ For culture and propagation see _Hamelia_, p. 542.

**C. MORELIA (evidently called after some person of the name of Morel, of whom we know nothing)._** A. Rich. mem. soc. hist. nat. par. 5. p. 23. D. C. prod. 4. p. 617.

_Lin. syst._ **Pentádria**, _Monogyniá_. Limb of calyx marginal, erect, nearly entire. Corolla short, tubular, with a 5-parted limb; segments lanceolate, spreading, imbricate in aestivation. Stamens 5, inserted in the throat, exserted; anthers linear. Style simple, thickened and fusiform towards the apex; stigma bifid: lobes approximate. Ovarium 4-5-celled; cells 3-5-ovulate; ovula fixed to the inner angle of the cell. Fruit rather fleshy, 4-5-celled; cells 2-3-seeded, crowned by the short neck of calyx.—A small glabrous tree, native of Senegal, with the habit of _Bacónia_. Branches terete, cinnereous, glabrous. Leaves opposite, elliptic, coriaceous, glabrous. Stipulas inserted, deciduous. Flowers axillary, racemose; racemes somewhat trichotomous.

1 M. _Senegálensís_ (A. Rich. l. c.). _h._ S. Native of Senegal, where it was collected by Leprieur and Perrottet. _Senegál Morelia_. Shrub. 

_Cult._ For culture and propagation see _Hamelia_, p. 542.

**Tribe VI.**

**CORONÍREÆ** (this tribe contains plants agreeing with the genus _Cordiera_ in having bacate many-celled fruit, and in the cells being 1-seeded). A. Rich. mem. soc. hist. nat. par. 5. p. 107 and 222. D. C. prod. 4. p. 445. Fruit bacate, of many seeds. This differs from _Tribe Guettardaceae_ in the fruit not containing pyrenes, but true cells; and from _Tribe Ha-melíaceae_ in the cells being 1-seeded, not many-seeded.


_Lin. syst._ **Penta-Hexándria**, _Monogyniá_. Limb of calyx 5-6-toothed, wide. Corolla with a shortish tube, a naked throat, and a 5-6-parted limb; segments narrow, spreading. Stamens 5-6, inserted in the throat of the corolla, exserted; filaments short; anthers linear. Stigmas 2, linear, shorter, somewhat recurved, exserted. Ovarium 2-celled; cells biovulate; ovula collateral.—Shrubs. Leaves opposite, linear-lanceolate, gradually tapering at the base, and joined by the broad, acuminate, entire stipulas. Flowers downy, almost sessile, crowded in the axils of the leaves.

1 T. _Angolésis_ (A. Rich. l. c.). _h._ S. Native of Angola. _Angola Tricalýsiá_. Shrub. 

_Cult._ For culture and propagation see _Hamelia_, p. 542.


_Lin. syst._ **Monóecia**, _Pentádria_. Flowers unisexual, with the sexes on different branches. Male flower. Calyx cup-shaped, solid, with an entire limb. Corolla salver-shaped, with a long tube, which gradually tapers to the apex, and is a little incurved, coriaceous, shining, and as if it were horny; with a 5-parted limb: having oblong acute lobes, and a very narrow naked throat. Stamens 4-5, inclosed, inserted in the middle of the tube; anthers rising from the bottom of the calyx. Styles only vestiges.—Female flower. Calyx sub-globose, adnate to the ovary, with an entire marginal limb. Corolla straight, less attenuated at the apex than in the male flowers, with a 4-5-parted limb. Stamens small, abortive. Disk depressed in the middle. Stigmas 4-5, subulate. Berry globose, depressed, umbilicate, fleshy, 4-8-celled; cells 1-seeded. Seeds black, smooth. Albumen fleshy. Embryo parallel with the hynum, having a terete radicle, and subcordate cotyledons, which are the length of the radicle.—Bushy shrubs, 4-5 feet high. Leaves opposite, elliptic, acuminate, glabrous; stipulas very acute, combined at the base. Flowers white, occupying the tops of the branches: male ones by threes, sessile, girded by 4 scale-formed brac-
teas: the female ones solitary, and furnished with 4 bracteas each.

1 C. triflora (D. C. prod. 4. p. 445.).  h. S. Native of Guiana, on the banks of the river Kourou.

Three-flowered Cordyera. Shrub 4 to 5 feet.

Cult. For culture and propagation see Heliamia, p. 542.

Tribe VII.


Sub-tribe I. Morindæ (this sub-tribe only contains the genus Morinda). D. C. prod. 4. p. 446. Flowers and fruit collected into heads and combined.


LIN. SYST. Pentândria, Monogynia. Tube of calyx obvolute, usually combined with those nearest it: limb short, hardly toothed. Corolla funnel-shaped, with a nearly terete tube, and a spreading, 5-lobed, rarely 4-lobed limb. Stamens 5, rarely 4; filaments short; anthers inclosed, except in one species. Style filiform, usually exserted; stigma bifid, except in one or two species, in which it is entire. Berries containing 2-4 1-seeded pyrenes each, usually combined, compressed or angular from being so close together, areolate from the vestiges of the calyx. Embryo terete, in fleshy albumen.—Shrubs or small trees, natives within the tropics. Leaves opposite, rarely 3-4 in a whorl. Stipulas intrapetiolar, usually obtuse and membranous. Peduncles solitary or numerous, axillary or terminal, sometimes combined at the base, when this is the case they are said to be branched. Flowers aggregate, sessile, upon a sub-globose naked receptacle, forming dense, globose, or ovate heads: having the berries at length combined into a spurious fruit or compound berry. The bark of the roots is styptic, and is used by dyers.

SECT. I. Roöc (Roöc is the American name of M. Royoc). Plum. gen. 11. t. 26. D. C. prod. 4. p. 446.—Morinda of most authors. Flowers pentamous, pentandrous. Stigma bifid. Berries containing 2-4 1-seeded pyrenes each.

* Peduncles terminal, twin, or lateral and opposite the leaves, in the latter case one of the opposite leaves is deficient or half abortive.

1 C. citrifolia (Lin. spec. 250.) plant glabrous, almost arboreous; branchlets tetragonal; leaves oblong, attenuated at both ends, shining; stipulas semi-lunar, membranous, obtuse; heads on short peduncles, opposite the leaves, bracteless; berries combined into an ovate mass.  h. S. Native of the East Indies, as in Malabar and Pegu, &c. as well as of the Society Islands. Gaertn. fruct. 1. p. 144. t. 29. Roxb. fl. ind. 2. p. 196. Ham. in Lin. trans. 15. p. 533. Lour. coch. p. 140.—Rheed. mal. 1. p. 97. t. 52.—Rumph. amb. 3. p. 158. t. 99. Peduncles opposite to a solitary leaf, on the upper side of the branchlets, each supporting a small head of small white flowers. Anthers half hid in the tube of the corolla. Berries combined in the head, white and polished. The root of this species is employed by the natives of India to dye red.

Var. β. papyracea (D. C. prod. 4. p. 446.) leaves oblong, acuminate at both ends, on long petioles, papery; stipulas triangular.  h. S. Native of the East Indies, where it was collected by Labillardiere.

Var. γ. latifolia (D. C. l. c.) leaves ovate, blunt at the base, hardly acute; stipulas broad, membranous, very blunt.  h. G. Native of the Islands of O-Wahu and Radak, where it was collected by Chamissus. M. citrifolia, Cham. et Schlecht. in Linnaea. 4. p. 149.

Citrin-leaved Indian-mulberry. C1t. 1793. Tree small.

2 M. tinctoria (Roxb. fl. ind. 2. p. 197.) glabrous and somewhat arboreous; leaves oblong, almost sessile, smooth, but not shining; peduncles opposite the leaves, solitary, much longer than the petioles; heads ovate; stamens inclosed.  h. S. Native of the East Indies, almost everywhere. M. citrifolia, Hunt. in asiat res. 4. p. 35. Trunk seldom above a few feet in height, but supporting a pretty large shady head of branches. Leaves pale beneath, from 6-10 inches long. Peduncles supporting an oval head of pure white jasmine-like sweet-scented flowers. Fruit like that of M. citrifolia. The bark of the root is used to dye red; the colour is fixed with alum, but it is neither bright nor durable. In some parts of India it is cultivated for the sake of its roots. In the Cirears the dyers use the bark of the fresh roots bruised and gently boiled in water for a short time. The cloth or yarn is prepared in a cold infusion of the powdered galls of Terminâlia Chebula, in milk and water; it is then dried and moistened with alum water, and again dried, and receives from the above decoction a pretty bright but fugitive red. The green fruit are picked by the Hindoos, and eaten with their curries. The wood is hard and very durable, variegated with red and white, and is employed for gun-stocks in preference to all other kinds.

Dyers' Indian-mulberry. Tree small.

3 M. bracteata (Roxb. fl. ind. 2. p. 198.) glabrous and sub-arborescent, stiff; leaves oblong, shining, on short petioles; stipulas large, semi-circular at the apex; peduncles solitary, opposite the leaves, bracteate.  h. S. Native of the East Indies, in the Gamjam district; also of the Moluccas and Philippines. Cham. et Schlecht. in Linnaea. 4. p. 149. Ham. in Lin. trans. 15. p. 534. Blum. bijdr. p. 1006.—Rumph. amb. 3. p. 157. t. 98. Leaves deep green and polished on both sides. The crown of the gern has frequently a small portion of it growing to be a long linear-lanceolate leaf. The anthers are inclosed, and the stigma exerted, as in most of the other species of the genus. Peduncles supporting each a small head of small pure white flowers. Berries combined, 4-seeded. Corolla with a very villos throat.

Bracteate Indian-mulberry. Tree small.

4 M. exserta (Roxb. fl. ind. 2. p. 199.) arboreous; branches somewhat tetragonal, sometimes villous; leaves on short petioles, oval, acute, smooth, or downy beneath; stipulas emarginate; peduncles opposite the leaves, generally solitary, but sometimes rising by twos or threes; heads roundish; stigma inclosed; stamens exerted.  h. S. Native of Bengal. Branches spreading in every direction. Peduncles supporting each a head of many pure white jasmine-like flowers. Berries 4-seeded, combined.

Exserted-stamened Indian-mulberry. Shrub 6 to 12 feet.

5 M. geminata (D. C. prod. 4. p. 447.) branches tetragonal, puberulous; leaves obvolute or oval, inclosed at the base, hardly petiolate, rather downy beneath; peduncles twin, opposite the leaves; stigma and anthers at the throat.  h. S. Native of
Gambia and Casamancan, among bushes, where it was collected by Leprieur and Perrottet. Flowers white.

**Twin-peduncled Indian-mulberry.** Shrub.

6 M. *multiflora* (Roxb. fl. ind. 2. p. 200.) sub-arborescent; leaves oval-oblong, acute, with undulated margins, downy on both sides, but particularly so beneath; peduncles terminal and opposite the leaves, solitary or twin or tern, villous, usually compound; heads nearly globose, many-flowered. *f. S. Native of the East Indies, in Berr. Stamens inclosed, Style exerted. Berries combined in a head, about the size of a mulberry, each containing 4 seeds. This plant is cultivated about Nagpore for the sake of its roots, as the other species are in various other parts of India, and for the same purpose.

**Many-flowered Indian Mulberry.** Tree small.

7 M. *pure-scens* (Smith, in Rees’s cyc. vol. 24. no. 3.) young branches tomentose; leaves elliptic-lanceolate, acuminate at both ends, scabrous, but with villous veins; peduncles hairy, opposite the leaves, and terminal; heads globose, few-flowered; corollas elongated, almost glabrous. *f. S. Native of the Mauritius.

**Downy Indian-mulberry.** Tree or shrub.

8 M. *serrata* (Ham. in Lin. trans. 13. p. 535.) shrubby, erect, glabrous; leaves elliptic or lanceolate, undulated; peduncles naked, opposite the leaves, solitary, twice the length of the petioles; heads ovate, nodose in the fructiferous state from the berries being prominent. *f. S. Native of the East Indies, among bushes at Campurra. Berries of a livid whitish colour: having the pulp white and diaphanous, each containing 4 seeds never combined or conformed, many of them abortive.

**Squarrose Indian-mulberry.** Shrub.

9 M. *angustifolia* (Roxb. fl. ind. 2. p. 201. but not of Roth.) shrubby, erect, glabrous; leaves elliptic or lanceolate, blistered, almost sessile; stipulas somewhat coriaceous, united into a ring; peduncles short, solitary, almost terminal, but usually opposite the leaves; heads globose, many-flowered; berries distinct in the head. *f. S. Native of the East Indies, at Chittagong. Roxb. cor. 3. t. 237. Peduncles seemingly terminal when they begin to blossom, but soon afterwards a branch shoots out from between each peduncle and its respective opposite leaf, which marks their proper situation to be opposite the leaves, supporting each a head of pure white jasmine-like flowers. Anthers hid in the middle of the tube. Berries succulent, of a deep shining black, with very dark-coloured pulp, containing 4 seeds each. The root of this species is used by the natives of India for dyeing, where the plant is in plenty.

**Narrow-leaved Indian-mulberry.** Fl. April, July. Clt. 1816. Shrub 4 to 5 feet.

10 M. *ferrugineola* (Ham. in Lin. trans. 13. p. 533.) suffruticose, diffuse, glabrous; branches tetragonal; leaves elliptic, acute, on short petioles; stipulas subulate, longer than the petioles; heads sessile, solitary, opposite the leaves, usually containing about 10 flowers, and sometimes binate by a leaf. *f. S. Native of Pegu and Ava, in woods. Corolla incurved, much longer than the head.

**Peach-leaved Indian-mulberry.** Shrub 1 to 2 feet.

11 M. *turbae’ensis* (H. B. et Kuth, nov. gen. amer. 3. p. 380.) shrubby downy, twining; leaves oboviate-oblong, acute; stipulas connate at the base, acute, downy; heads terminal and opposite the leaves, on very short peduncles; corollas villous on the outside. *f. S. Native of New Granada, between Turbaco and Cartagena. Flowers white.

**Turbaco Indian-mulberry.** Shrub cl.

**Terminal peduncles twin, but the lateral and axillary ones are solitary.**

12 M. *Routo* (Lin. spec. 250.) glabrous, procumbent at the vol. iii.

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13 M. *longiflora*; a branched rather climbing shrub; leaves elliptic-lanceolate, acuminate; peduncles short, axillary, bearing each a head of 6-7 flowers. *f. S. Native of Sierra Leone, among bushes. Corolla white, with a very long tube.

**Long-flowered Morinda.** Shrub cl.

14 M. *multipulchra*; shrubby; branches rather quadrangular; leaves broad, oblong, acute, membranous, veiny; peduncles axillary, bearing each a head of 9-10 flowers. *f. S. Native of Sierra Leone, among bushes on the mountains, and in the lowlands. (V. S. in herb. Lamb.)

**Quadrangular-branched Indian-mulberry.** Shrub 8 to 4 ft.

15 M. *pedunculata* (H. B. et Kuth, nov. gen. amer. 3. p. 380.) glabrous, erect; leaves elliptic-oblong, acuminate, shining; stipulas short, connate, acuminate; heads axillary, on long peduncles; bacteas ovate, acuminate. *f. S. Native of South America, in woods on the banks of the Orinoco, near San Borja. Branchlets tetragonal. Corolla white, glabrous. Tube of calyx downy.

**Peduncular-flowed Indian-mulberry.** Shrub 4 to 5 feet.

16 M. *retusa* (Lam. and Poir. dict. 4. p. 316.) arboreous, glabrous; leaves obolate, obtuse, attenuated at the base, on short petioles, shining above; stipulas connate, membranous, obtuse; heads globose, on short peduncles, terminal? *f. S. Native of Madagascar, where it is called Lingo. Poiré says, in his diagnosis of this species, that the heads are lateral, but in his description he says they are exactly terminal.

**Retuse-leaved Indian-mulberry.** Tree.

17 M. *palmetorux* (D. C. prod. 4. p. 448.) shrubby, glabrous; leaves oval-lanceolate, acuminate, on short petioles; stipulas broad-ovate, cupulate, membranous, foliaceous; heads almost terminal, solitary, globose, on peduncles, which are shorter than the leaves. *f. S. Native of Africa, in Cayor and Gambia at the roots of palm-trees, where it was collected by Leprieur and Perrottet. Peduncles variable in length, from 1/2 to 3 inches long. Limb of calyx campanulate, hardly 5-toothed. Corolla villos on the outside. Style short. Anthers almost exerted.

**Palu Indian-mulberry.** Shrub.

18 M. *stenophylla* (Spreng. syst. 1. p. 748.) branches nearly terete, glabrous, but when young rather tetragonal, and clothed with grey tomentum; leaves elliptic-lanceolate, acuminate at both ends, on short petioles, grey from very short tomentum; stipulas lanceolate, at length reflexed; peduncles axillary, solitary, tomentose. *f. S. Native of the East Indies, near Beddir, where it is cultivated for its roots, which are used for dyeing. M. angustifolia, Roth, nov. spec. p. 147. but not of Roxb. The figure in Rumph. amb. 3. t. 98. is sometimes referred to for this species, but is probably distinct.

**Narrow-leaved Indian-mulberry.** Shrub or tree.

19 M. *tomentosa* (Heyn. in Roth, nov. spec. 147.) branchlets angular, glabrous; leaves sub-cordate, ovate, acuminate, clothed with grey tomentum beneath, and on the veins above; petioles long, channelled; peduncles axillary, solitary. *f. S. Native of the East Indies. Perhaps the same as the following, but it differs in the glabrous branches and long petioles.

4 A
Tomentose Indian-mulberry. Shrub.
20 M. Mudia (Ham. in Lin. trans. 13. p. 536.) sub-arborescent; branchlets tetragonal, tomentose; leaves cordate-elliptic, acuminate, tomentose on both surfaces, on very short petioles; stipulas usually bifid; peduncles axillary, solitary, bractless, shorter than the petioles.  ʃ. S. Native of the coast of Coromandel, in the woods of Carnata, where it is called Mudia. Each head contains 5-6 flowers.

Mudi Indian-mulberry. Tree small.
21 M. Chalc'ea (Ham. l. c.) sub-arborescent; branches hexagonal; leaves elliptic, acute, often 3 in a whorl, scabrous above, pubescent beneath, and bearded at the axils of the ribs; stipules semi-circular, often 2-lobed; peduncles axillary, solitary, naked, a little longer than the petioles. ʃ. S. Native of Bengal, in woods at Matsia and Magadha, where it is called Chakhuca, i. e. six eyes, from the heads containing only 6 flowers. The bark of the root is used in dyeing red, like others of the species.

Chakhuca Indian-mulberry. Shrub.
22 M. Nov.dia (Ham. l. c.) sub-arborescent; branches obtuse-angled; leaves opposite, or 3-4 in a whorl, glabrous, elliptic, acute, on very short petioles; stipulas marcescent; heads axillary and terminal, pedunculate, egg-shaped, nodose from many of the berries being abortive. ʃ. S. Native of the East Indies, in the woods of Mithila, where it is called by the natives Koria. Flowers white, large, sweet-scented, 10-12 in each head.

Koria Indian-mulberry. Tree.
23 M. Cor'ia (Ham. l. c.) arboreous; branches with obtuse angles, glabrous; leaves elliptic, acute, undulated, glabrous, on very short petioles; stipulas marcescent; peduncles axillary, and terminal, much longer than the petioles, glabrous, bracteate at the apex; heads roundish. ʃ. S. Native of the East Indies, in the woods of Mithila, where it is called by the natives Koria. Flowers white, large, sweet-scented, 10-12 in each head.

Koria Indian-mulberry. Tree.

** Peduncles crowded, umbellate.**

24 M. Umbell'a (Lin. spec. 250.) arboreous, erect; leaves petiolate, lanceolate-ovate; peduncles crowded, terminating the branches. ʃ. S. Native of Ceylon. This plant is unknown at the present day, and probably the same as M. microcephala. Umbellate-flowered Indian-mulberry. Clt. 1809. Tr. or sh.

25 M. Microce'phala (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 449.) shrub glabrous, climbing a little; branches terete; leaves ovate-oblong, acute; stipulas ovate-triangular, acuminate, 3 times shorter than the petioles; heads pedunculate, 4 together, forming umbels at the tops of the branches. ʃ. S. Native of the Island of Luzon. Flowers white.

Small-headed Indian-mulberry. Shrub cl.


Cochin-china Indian-mulberry. Tree.

27 M. Sc'andens (Roxb. fl. ind. 2. p. 202.) shrubby, climbing; leaves oblong-lanceolate, acuminate at both ends, on short petioles; stipulas membranous, obtuse; peduncles numerous, umbellate, terminal. ʃ. S. Native of the East Indies, on the east side of Point de Galle Bay. Leaves 3 inches long, and an inch broad. Petioles hardly longer than the stipulas. Peduncles 7-8, short. Fruit-bearing heads globose, about the size of a pea. Flowers white, few in each head.

Scandent Indian-mulberry. Shrub cl.

28 M. Sarment'osa (Blum. bijdr. p. 1006.) climbing; leaves oblong-lanceolate, acuminate, glabrous; peduncles terminal by two or three, and twin and axillary, concrete at the base, or they may be said to be solitary and bifid; heads usually containing only 4 flowers. ʃ. S. Native of Java, on Mount Buran-grang in the province of Krawang. Allied to M. scandens.

Twiggy Indian-mulberry. Shrub cl.

29 M. La'xa (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 449.) leaves oblong, acuminate at both ends, membranous, downy beneath as well as on the branchlets; stipulas semi-circular, cuspinate; floriferous branchlets rising from the axis of the superior leaves, opposite, bearing each 2 leaves, and numerous small peduncled heads, which are disposed in an umbellate manner. ʃ. S. Native of Mexico.

Loose Indian-mulberry. Shrub.

Sect. II. Padava'ra (Pada-cara) is the Malabar name of M. tetrandra. D. C. prod. 4. p. 449. Flowers tetramerous, tetrandrous. Style bifid at the apex. Berries containing each 4 1-seeded pyrene. Perhaps a proper genus.


Tetrandrous Indian-mulberry. Shrub diffusely.

31 M. Parviv'olia (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 449.) shrubby, glabrous; sterile branches twining; leaves linear-oblong, cuspitate, glabrous, as well as in the axis of the veins; stipulas combined into a truncate sheath; heads terminal, 4-5 together in an umbel, pedunculate. ʃ. S. Native of the Island of Luzon. Very like the last species, but the number of the parts of the flower is unknown.

Small-leaved Indian-mulberry. Shrub.

Sect. III. Phyllir'eastrum (from Phyllir'eas and astrum, an affixed signification, like; the shrub contained in this section has much the habit of Phyllir'eas). D. C. prod. 4. p. 449. Flowers tetramerous, tetrandrous. Style clavate, undivided. Berries containing each 4 1-seeded pyrene. Perhaps a proper genus.


Phyllir'eas-like Indian-mulberry. Shrub 5 feet.

Sect. IV. Chrysorhiza (from χρυσός, chrysa, gold, and ρηίς, rhiza, a root; the roots are yellow). D. C. prod. 4. p. 450. Flowers pentamerous, pentandrous. Berries 2-celled, 2-seeded, Heads of flowers opposite the leaves. Habit of the other species of Morinda, but probably a proper genus.

33 M. Chry'sorhiza (D. C. prod. 4. p. 450.) shrub much branched; branchlets glabrous; bluntly tetragonal; leaves oblong-elliptic, on short petioles, pubescent in the axis of the veins beneath; stipulas roundish, foliaceous, entire; heads pedunculate, opposite the leaves. ʃ. S. Native of Guiana, where it is called by the natives Boj-togi-ťo. Psychotria? chrysorhiza, Schum. pl. guin. p. 111. Corolla salver-shaped, white. Stigma bipartite.

Golden-rooted Indian-mulberry. Shrub.
34 M. MACROPHYL'LA (Desf. ex. Hort. par. ed. 3. p. 404.) stem erect; branches quadrangular; leaves broad-elliptic, acute, glabrous, on short petioles; stipulas twin, ovate, spreading. nat. S. Native country unknown. Cultivated in the stove of the Jardin du Roi, Paris, but has never flowered.

Long-leaved Indian-mulberry. Shrub. Cult. For culture and propagation see Hamelia, p. 542.

S. SUBSITIIB. GUERRA'EDA (this sub-tribe contains shrubs agreeing with Guettarda in the flowers being distinct.) D. C. prod. 4. p. 450. Flowers distinct, never combined.


LIN. SYST. TETRAN'DRIA, Monogynia. Limb of calyx tubular, with an entire border. Corolla funnel-shaped, 4-cleft, having the throat closed by arched scales or hairs. Stamens 4, inclosed. Ovary conic by a fleshy disk. Style 1. Stigma simple (ex Jack.),—quadrifid (ex Blum.). Drupe baccate, crowned by the annular base of the calyx, containing each 4 triquetrous, 1-seeded, chartaceous arillate pyrene. Embryo erect.—Half parasitical suffruticose plants, tuberous at the base. Leaves opposite, crowded, petiolate, glabrous. Stipulas petiolar, ciliate. Flowers sessile. The germinating plant has a tumid base (ex Blum.).


Unarmed Myrmecodia. Shrub.

2. M. arma'ta (D. C. prod. 4. p. 450.) tubers covered with rows of prickles; leaves oblong-cuneated; limb of calyx quite entire; throat of corolla closed with arched scales; stigma quadrifid. nat. S. Native of the western provinces of Java, in the mountains, upon trees, where it is called by the natives Tankurah. M. tuber'osa, Blum. bijdr. p. 1001.—M. echinata, Gaud. in Freyc. voy. pt. bot. t. 96. has the stem beset with rows of prickles; stipulas twin on both sides, connected by their bases within the petioles into a bifid limb; leaves petiolate, elliptic, acute at both ends; but perhaps both plants are the same. Ar'med Myrmecodia. Shrub. Cult. For culture and propagation see Schrader, p. 542.


LIN. SYST. TETRAN'DRIA, Monogynia. Limb of calyx short, entire. Corolla with a short tube, which is hairy inside, and a flat, 4-lobed limb. Stamens 4, inserted in the throat; filaments short. Style filiform; stigma 2-lobed. Drupe juicy, containing 2 1-seeded pyrene, which are flat inside, and convex on the back, coriaceous. Embryo erect, in the center of the albumen.—False parasitical shrubs, growing upon trees, tuberous at the base. Leaves oval, on short petioles. Stipulas small, linear. Flowers axillary, sessile, white.—Habit of the Myrmecodia.

1. H. FORMICA'RIUM (Jack. l. c. Blum. l. c.) leaves almost sessile, oval, rounded at the apex. nat. S. Native of the Moluccas, Sumatra, and Nusa-Kambanga, upon trees in the woods. Lasiostoma formicarium, Spreng. syst. 1. p. 428. Nidus gérm mins formicarium nigrarum. Rumph. amb. 6. p. 119. t. 55. The trunk of this plant is an irregular tuber, fixed to trees by fibres like the stem of ivy; it is hollow inside, and becomes the nest of black ants.

Ants' Hydnothyrm. Shrub parasitical.

2. H. MON'TANUM (Blum. bijdr. p. 956.) leaves on short petioles, oblong, obtuse. nat. S. Native of Java, on the mountains, in the province of Buitenzorg, upon trees. The base of the stem is swollen, as in the first species. Mountain Hydnothyrm. Shrub parasitical. Cult. For culture and propagation see Schrader, p. 542.


LIN. SYST. TETRAN'DRIA, Monogynia. Limb of calyx small, 4-toothed. Corolla small, sub-campanulate, with a villous throat, and a 4-cleft spreading limb. Stamens 4, inserted in the mouth of the tube; filaments very short. Style short, perforating the disc; stigma bifid in the throat. Drupe crowned by the calyx; 2-celled; cells containing each 2 1-seeded pyrene. Embryo inverted in the albumen.—A shrub, having the habit of Coffea, with divaricate branches. Leaves distich. Flowers densely crowded on sessile hemispherical, axillary receptacles, sessile, bracteate, umbellate; but the fruit is pendicellate.

1. H. flua'scens (Blum. l. c.) nat. S. Native of Java, in woods on Mount Burangrang.

Shrubby Hydnothyrm. Shrub 4 to 5 feet. Cult. For culture and propagation see Hamelia, p. 542.

FIG. 100.


LIN. SYST. TETRAN'DRIA, Monogynia. Calyx with an ovate tube and a small 4-toothed limb. Corolla funnel-shaped, sub-campanulate, 4-cleft (f. 100. b.), glabrous inside. Filaments rising from the bottom of the corolla (f. 100. c.), but not adnate to its tube; anthers roundish, hardly exserted. Style filiform; stigmas 2, hairy (f. 100. d). Berry roundish (f. 100. e), umbilicate, containing 2-4 1-seeded, coriaceous pyrene. Seeds semi-ovate, convex on the outside, flat and furrowed inside. Alumen horny. Embryo dorsal, straight, inverted (ex Gærtn.), erect (ex Pet. Th. and Blum.).—Creeping herbs, with the habit of Michèlla. Leaves opposite, rather fleshy, oval. Stipulas small. Flowers terminal, sessile, solitary, white. Berries red.—Perhaps this genus is sufficiently distinct from Michèlla.

p. 49. N. répens, Ruiz & Pav. fl. per. 1. p. 60. t. 90. The
figure in Smith’s icon. ined. exhibits much exerted anthers, and
the figure of fl. per. a long exerted style, but the figure in
Pet. Th. trist. has neither the anthers nor style exerted. There
are therefore two distinct species confounded under this name.
The specimens from Madagascar have pentameros flowers (ex Rich.),
and those from Java have acuter leaves, on longer peti-
toles than any other; these are probably specifically distinct.

Depressed Nertera. Pl. creeping on the ground.

2 N. adsur’gens (Pet. Th. fl. trist. d’ac. t. 11.) stems root-
ing at the base, but at length ascending at the points; leaves
almost sessile, oval, undulate, with callous edges. 3. F. Native of
the Island of Tristan d’Acuña. Carm. in Lin. trans. vol. 12.
p. 505. Erythrodisa mágus, Pet. Th. fl. trist. d’ac. p. 42. A
larger plant than the preceding.

Rising Nertera. Pl. creeping.

3 N. ? alsismoide (Cham. et Schlecht. in Linneá. 6. p. 413.)
leaves pubescent, and ciliated at first, but at length becoming
glabrous; peduncles axillary, deflexed when in fruit, about equal
in length to the leaves; drupes juicy, globose. 3. F. Native of
Mexico, at Cuesta Grande de Jalacingo. Herb beset with a
few toment white hairs. Drupe bluish-black, containing 2 coria-
ceous 1-seeded pyrene.

Chickweed-like Nertera. Pl. creeping.

Cult. The species of Nertera are small creeping suffruticose
evergreen plants, of little beauty even when in flower; they
grow best in a mixture of turfy peat and sand; and are increased
easily by separating the rooted creeping stems. They may be
planted among the alpine plants in summer, but in winter they
will require the protection of a green-house. They should be
grown in pots well drained with shers, placed in pans of water.

C.VII. MITCHELLA (so named by Linnaeus in honour of
John Mitchell, M.D. a physician in Virginia, who described
many genera of Virginian plants, which were published in act.
mus 6. p. 373. Lam. ill. t. 63. Goertn. fil. carp. 3. p. 70. t.
p. 4. p. 452.—Chamadaphne, Mitch. gen. p. 17. but not of
Buxb.

Lin. syst. Tetrándria, Monogynia. Calyx with an ovate-
globose tube, and a large 4-toothed limb. Corolla funnel-
shaped, with a terete tube, and a 4-loped spreading limb, having
the throat and lobes of the limb hairy inside. Filaments adnate
to the tube, almost to the throat; anthers ovate, hardly excised.
Style filiform; stigmas 4, inclosed. Berries almost globose,
crowned by the teeth of the calyx, containing 4 hardy 1-seeded
pyrene each; and sometimes containing 8, when 2 berries are
combined. Albumen somewhat cartilaginous. Embryo minute,
erect, with very short cotyledons.—American glabrous creeping
evergreen herbs, with the habit of Linneá or Nertera. Leaves
roundish or ovate. Stipulas small, solitary on each side.
Flowers axillary and terminal, sometimes combined by two at
the tops of the peduncle, and sometimes solitary and sessile.

1 M. répens (Lin. spec. p. 161.) leaves roundish; flowers 2
on the top of each peduncle, combined; berries combined. 3. F.
H. Native of North America, from Boston to Carolina; Upper
Canada; and of Mexico between Pueblo-Viejó and Real del
Monte, in shady woods at the roots of trees, and among moss.
—Pluk. alm. t. 444. f. 2.—Cat. car. t. 20.—Petiv. gaz. t. 1. f.
13. Corollas white, tinged with purple, usually 2 together on
the top of each peduncle, and seceded on two combined ovaries;
the flowers are sometimes also combined, and therefore 8-cleft,
according to the obs. of Torrey. Berries red, insipid.

Creeping Mitchellia. Fl. June. Cl. 1791. Pl. cr.

2 M. ováta (D. C. prod. 4. p. 493.) leaves ovate, acutish;

flowers solitary, sessile. 3. F. Native of South America, in
humid places at the foot of the burning mount Tangurugas, in
the kingdom of Quito. Flowers white, solitary, not by twos.
Nertera tetrasperma, H. B. et Kunth, nov. gen. amer. 3. p.

Ovate-leaved Mitchellia. Pl. cr.

Cult. These are small creeping evergreen plants of very little
beauty; they will grow very well in a peat border, or in pots
filled with a mixture of peat and sand, placed among other
alpine plants; they are easily increased by separating the
creeping stems.

CIX. MEPHITIDIA (from mephitis, a damp of the earth;
in reference to the ungrateful smell of the shrubs.) Reinw. in

Lin. syst. Tetra-Hezändria, Monogynia. Limb of calyx
3-6-parted or toothed. Corolla funnel-shaped, regular, 4-
cleft, for the most part hairy. Stamens 4-6, inserted towards
the throat; filaments very short; anthers linear, exserted or
inclosed. Stigmas 4-9, linear, thick. Drupe baccate, crowned
by the permanent calyx, containing 4-9 triquetrous coriaceous
arillate 1-seeded pyrene.—Shrubs or subshrubs, natives of
Indies, usually with an ungrateful smell. Flowers crowded or in
dense heads, axillary, and terminal, baccate. Drupes usually
blue.—This genus, according to Blume, is nearly allied to
Ascyllanthus and Psathhura.

* Limb of calyx 3-6-parted.

1 M. cyanocarpa (Jack, in Lin. trans. 14. p. 125. under
Lasianthus,) plant suffruticose, hairy; leaves oblong, acuminated,
attemuated at the base; flowers usually by threes, involucreted
by bracteas. 3. S. Native of Sumatra and Java, in shady
places on the mountains. Blum. bijdr. p. 996. Bracteas cor-
date. Corollas yellow, ex Jack, white, ex Blume. Berry
blue, pilose, size of a gooseberry.

Blue-fruiting Mephitidia. Shrub.

2 M. attenuata (Jack, l. c. p. 126. under Lasianthus,) plant
suffruticose, villous; leaves oblong, attenuated at the apex, but
roundly cororate at the base, glabrous above; flowers axillary,
3-4-together, almost sessile, involucrated by lanceolate bracteas.
3. S. Native of the interior of Bencoolen. Calyx 4-parted.
Corollas yellow, pilose. Berries deep blue, smaller than those
of the preceding species.

Attenuated-leaved Mephitidia. Shrub.

3 M. inequalis (Blum. bijdr. p. 996. under Lasianthus,
under as well as all the following species,) shruhy, hairy; leaves oblong,
acuminated, unequally rounded at the base; flowers axillary,
crowned, involucreted by bracteas. 3. S. Native of Java, on
mounts Salak and Seribu. Corollas white.

Unequal-leaved Mephitidia. Shrub.

4 M. rhinocerotis (Blum. bijdr. p. 996.) shruhy; leaves
oblong, acuminated, rounded at the base, glabrous above, but
hairy beneath, as well as the branches and calyces; flowers
crowned, axillary. 3. S. Native of Java, in the higher woods
on mounts Salak, Gedé, &c. Corollas white.

Horn-soumd Mephitidia. Shrub.

5 M. capitata (Blum. bijdr. p. 996.) shruhy; leaves oblong-
lanceolate, acuminated, attenuated at the base, glabrous
above, and hairy beneath, as well as the branches, peduncles,
and calyces; heads of flowers pedunculate, axillary. 3. S.
Native of Java, in woods on the mountains. Flowers white.

Capitate-flowered Mephitidia. Shrub.

6 M. tomentosa (Blum. bijdr. p. 997.) shruhy; leaves ob-
long, long-acuminated, acute at the base, glabrous above, but
tomentose on the veins beneath, as well as on the branches; flowers axillary, solitary or twin, sessile. \( \varpi \). S. Native of Java, in woods on mounts Salak, Gede, \&c. Corollas white.

* * * 

** Limb of calyx with short lobes.**

12 M. inodo'ra (Blum. bidjr. p. 998.) shrubby; branches glabrous; leaves oblong or oblong-lanceolate, acuminate at both ends, glabrous, downy on the veins beneath; flowers crowded, axillary,giard by blunt bracteas. \( \varpi \). S. Native of Java, in woods on mount Gede. The leaves of this species are without any ungrateful smell.

*Scentless Mephitidia.* Shrub.

13 M. hexa'ndra (Blum. bidjr. p. 998.) shrubby; leaves lanceolate, long-acuminated, clothed with strigose down on the rib above, and on the veins beneath, as well as the branchlets; flowers axillary, usually solitary, hexandrous. \( \varpi \). S. Native of Java, in the more elevated woods on mount Salak. Corollas white.

*Hexandrous Mephitidia.* Shrub.

** * * * Limb of calyx with short teeth.**

14 M. vex'oša (Blum. bidjr. p. 999.) shrubby; leaves on short petioles, oblong-lanceolate, acuminate at both ends, glabrous, veiny, clothed with adpressed down on the veins beneath, as well as on the branchlets; flowers crowded, axillary, sessile. \( \varpi \). S. Native of Java, in woods on the Scribu mountains. Corollas white.

*Veiny Mephitidia.* Shrub.

15 M. syl'vestris (Blum. bidjr. p. 999.) shrubby; leaves on short petioles, oblong-lanceolate, acuminate at both ends, glabrous, veiny, clothed with adpressed down on the veins beneath, as well as on the branchlets; flowers crowded, axillary, sessile. \( \varpi \). S. Native of Java, along with the preceding, from which it differs in the smaller leaves, which are unequally narrowed at the base, in the fewer and remoter veins, and in the more ostensibly toothed calyx.

*Wild Mephitidia.* Shrub.

16 M. reticula'ta (Blum. bijdr. p. 1000.) shrubby; leaves large, on short petioles, oblong, acuminate, acute at the base, glabrous above, and reticulately veined, rather tomentose on the veins and branchlets; flowers crowded, axillary, almost sessile. \( \varpi \). S. Native of Java, on the Scribu mountains. Flowers white.

*Reticulated-leaved Mephitidia.* Shrub.

17 M. purpure'ea (Blum. bijdr. p. 1000.) shrubby; leaves lanceolate, long-acuminated, and are as well as the branchlets glabrous; peduncles crowded, 1-flowered, axillary, or lateral from the leaves having fallen. \( \varpi \). S. Native of Java, on mounts Salak, Gede, \&c. in shady places. Flowers purple.

*Purple-flowered Mephitidia.* Shrub.

18 M. stercora'ria (Blum. bijdr. p. 1000.) shrubby; leaves lanceolate, long-acuminated, acute at the base, glabrous except the veins beneath, which are clothed with adpressed down, as well as the branchlets; flowers crowded, axillary, sessile; fruit globose, containing 7-9 pyrenae. \( \varpi \). S. Native of Java, on the mountains. Allied to M. sylvesteris; but the fruit is evidently distinct. Flowers white.

*Stinking Mephitidia.* Shrub.

*Cult.* See *Hamelia*, p. 542, for culture and propagation.

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**CX. VANGUERIA**

(altered from *Voo-Vanguard, the Madagascar name of the first species*).


**Lin. syst. Pentandria, Monogynea.** Calyx with a short ob ovate tube, and a small spreading 3-toothed deciduous limb. Corolla campanulate globose, 5-cleft, hairy inside at the throat: lobes lanceolate, acut e, reflexed. Stamens 5, with very short filaments, and oblong hardly exerted anthers. Stigma capitate, (bilamellate, ex Vahl) 4-5 lobed (ex Roxb.). Berry apple-shaped, not crowned at the apex by the calyx, but marked by a sunated areola, indicating the place from which the limb of the calyx had fallen off; containing 5 bony 1-seeded pyrenae, which are obtuse at the base, and acute at the apex. Seed oblong, fixed to the inner angle of the cell, near the middle. Albumen fleshy. Embryo large, inverted, with long plano-convex cotyledons, and a bluntly cordate compressed superior radicle.

—Small trees. Leaves petiolate, ovate. Stipules solitary on both sides, lanceolate. Cymes branched, subpanicled, axillary, or rising beneath the leaves from the cicatrices, occasioned by the falling of the old leaves. Flowers white.—This genus is anomalous in the order, from the structure and situation of the seeds; it is allied to *Cântium*, but differs from that genus in the ovarium being 5-celled, not 2-celled.

1 V. edulis (Vahl, symb. 3 p. 36.) unarmed; leaves ovate, membranous, glabrous; cymes rising beneath the leaves. \( \varpi \). S. Native of Madagascar, from whence it has been introduced to China and the Mauritius. Ram. ill. t. 159. Sieb. fl. mao. exs. 2. no. 77 and no. 138. V. cymo'a, Gaurtn. fil. carp. 3. p. 75. t. 193. V. Madagascaris, Gmel. syst. 1. p. 367. V. Commersòni, Desf. ex Steud. Jacq. hort. vind. 1 t. 44. Vavângga Chinénis, Rohr, and Vavângga edulis, Vahl, act. soc. hist. nat. hafn. 2 pt. 1 p. 207. and p. 208. t. 7. The habit of the tree
RUBIACEÆ.  

CX.  VANGUERIA.  

CXI.  GUETTARDA.

There is much like that of Callicarpa. The fruit is eaten by the natives of Madagascar and the Mauritius under the names of Foa-vanga and Foó-vangier. Flowers white.

Edible-fruited Vangueria.  

2 V. spīnosa (Roxb. fl. ind. 2. p. 172.) spines decussate; leaves ovate-oblong, smooth; cymes axillary, in fascicles.  

Native of Bengal and China; in Bengal it is called Magna. Mýeyna spīnosa, Link, jahrb. 1-3.  

3 C. prod. 4. p. 455. — Guettardia species and Matthiola.  


Lin. syst. Tetra-Enneàndria, Monogynía.  

Calyx with ovate or globose tube; and a tubular permanent or deciduous limb, which is either truncate or irregularly toothed (f. 101. a). Corolla salver-shaped, with a cylindrical tube (f. 101. c), and from 4-9 ovate-oblong lobes (f. 101. b). Anthers 4-9, sessile in the throat of the corolla, inclosed. Stigma capitate, rarely 2-lobed. Drupe roundish or ovate, crowned by the tube of the calyx (f. 101. d), containing a bluntly angled 4-9-celled putamen (f. 101. e), having the cells straight or curved, 1-seeded. Seeds erect, nearly terete.—Small trees or shrubs, natives of South America, and a few of India. Leaves ovate or lanceolate, rarely cordate. Stipulas lanceolate, deciduous, except in one species in which they are sheathing and truncate. Peduncles axillary, bifid, rarely twice bifid. Flowers sessile and unilaterial along the branches of the peduncles, and solitary in the forks.

Sect. I. Cada'mba (vernacular name of G. speciosa).  

D. C. prod. 4. p. 455.—Cada'mba, Sonner. trav. 2. p. 228. t. 128.  

Limbs of calyx soon falling off. Cells of drupe curved at top.  

1 G. speciosa (Lin. spec. 1406.) leaves broad, ovate or oblong, usually subcordate at the base, obtuse and apiculated at the apex, downy beneath; stipulas ovate or lanceolate, acuminate, deciduous; cymes pedunculate, velutin, much shorter than the leaves; flowers of from 4 to 9 parts; fruit depressed, marked by an areola at the apex.  

Native of the East India islands; coast of Coromandel and Malabar, &c. Lam. ill. t. 154. f. 2. Roxb. fl. ind. 2. p. 521. Lindl. bot. reg. t. 1589. Cada'mba jasminiìföra, Sonn. trav. 2. p. 128. Rava-Pou, Reed. mal. 4. p. 47. and 48. Leaves canescent from vili in the young state, but the adult ones only along the nerves. Branches horizontal, forming a large shaggy head. Peduncles twice bifid. Flowers unisexual, large, white, exquisitely fragrant, partaking much of the scent of cloves. Seeds much curved, with the concave part of the curve outwards. Leaves sometimes downy on both surfaces. (f. 101.)  

Var. f., glabratæ (D. C. prod. 4. p. 455.) young leaves downy along the nerves and veins, but the adult ones are glabrous.  

Native of Mexico, but probably only cultivated in gardens. There are varieties of this with the leaves either subcordate or subattenuated at the base.  

Shouy Guettardia.  

Fl. June, July.  

Cl. 1771.  

Tree 30 ft.

Sect. II. Guettardæria (altered from the generic name).  

D. C. prod. 4. p. 455. Limbs of calyx usually permanent, truncate or irregularly subdentate. Corolla silky on the outside, with the lobes flat. Drupe having the cells of the putamen straight.

§ 1. Tube of corolla silky, villous or downy. Drupe containing a 4-7-celled putamen.

2 G. argentea (Lam. dict. 3. p. 54. ill. t. 154. f. 1.) leaves ovate, acuminate, on short petioles, glabrous and smooth above, but clothed with silky velvety down beneath, with the transverse nerves parallel; stipulas villous on the outside, ovate, terminating in a subulate point; cymes pedunculate, bifid, velvety, flowers hexameric, with a villous tube, which is 10 times longer than the ovary.  

Native of Cayenne.  


Silvery Guettardia.  

Tree 20 feet.

3 G. Havane'nsis (D. C. prod. 4. p. 455.) leaves obovate, acutish at the base, and mucronate at the apex, scabrous above, and tomentose beneath; stipulas acuminate, 3 times shorter than the petioles; peduncles hairy, about the length of the leaves; cymes trifid; tube of corolla 4 times longer than the ovary, and the limb 5-6-cleft.  

Native of Cuba, about the Havana. Allied to G. ambigua.  

Flowers white.

Havannah Guettardia.  

Tree.

4 G. Missio'nis (Wall. cat. no. 6221.) leaves oblong, acuminate, paler beneath, glabrous in every part, except on the mid-rib beneath; cymes pedunculate, axillary, dichotomous; calyx 5-parted, permanent; corolla villous on the outside; fruit roundish, crowned by the calyx.  

Native of the East Indies. Stipulas ovate. Flowers white, not so large as those of G. speciosa.

Mission Guettardia.  

Shrub or tree.

5 G. ambigua (D. C. prod. 4. p. 455.) leaves ovate or oblong, coruate at the base, and rather mucronate at the apex, scabrous above, but clothed with downy tomentum beneath; stipulas acuminate, one-half shorter than the petioles; peduncles hairy, about the length of the leaves; cymes bifid; fruit globose, reticulated, crowned by the tubular calyx.  

Native of Guadaloupe, and also of Jamaica, if, as is suspected, this be the Haliaes, P. Browne, jam. p. 205. t. 20. f. 1. Flowers white?

Ambiguous Guettardia.  

Shrub 8 to 10 feet.

6 G. corda'ta (H. B. et Kunth, nov. gen. amer. 3. p. 420.) leaves ovate-elliptic, deeply coruated, rounded at the apex, rather pilose above, and clothed with white tomentum beneath; stipulas ovate, acute, length of petioles; peduncles 3 or 4 times longer than the petioles; cymes 3-flowered; flowers hexameric, with a downy tube, which is 4 times longer than the ovary.
Native of New Granada, near Ibagué and Cuesta de Tolina, in hot places. Said to be nearly allied to G. scabra.

Coriaceous-leaved Guettarda. Tree or shrub.

7 G. rufo-sa (Swartz, prod. p. 59. fl. ind. occ. 1. p. 632.) leaves ovate-subcorporate, mucronate, scarious above, and tomentose beneath; peduncules 3 or 4 times longer than the leaves, compressed, villous; cymes bifid; flowers hexameric, with a villous tube, which is 3 times longer than the ovary. \( \tilde{\text{S}} \). S. Native of the Caribbee islands, as of Santa Cruz, Antigua, and Dominicana. Vahl, symb. 3. p. 50. Tube of corolla an inch and a half long, silky. Very nearly allied to G. scabra, but differs in the nerves of the leaves being less prominent and straight, not reticulated. Drupe purplish, containing a 6-seeded putamen.


8 G. scabra (Lam. ill. t. 154. f. 3.) leaves obovate, mucronate, coriaceous, scarious above, reticulated and pubescent beneath; stipulas lanceolate, acuminate, caducous; peduncles compressed, villous, almost 4 times longer than the pedicels; cymes bifid; limb of corolla 6-7-parted; stematis 6-7; tube of corolla villous, 3 times longer than the ovary. \( \tilde{\text{S}} \). S. Native of the West Indies, as of Porto-Rico. Vent. choix. t. 1. Mathioli scabra, Lin. spec. 1661. Mathioli, Plum. ed. Burm. t. 179. f. 2. Flowers white. Drupe containing an angular 4-7-celled putamen, and crowned by the somewhat crenate limb of the calyx.


9 G. viburnoides (Cham. & Schlecht. in Linnaea. 4. p. 128.) leaves ovate, acute, on long petioles, smoothish above, but not scarious, and clothed with silky tomentum beneath, as well as the branchlets and inflorescence; stipulas elongated, triangular, very soon falling off; peduncles shorter than the leaves, twice bifid, with the branch expanded; limb of calyx very short, somewhat truncate; drupe globose, depressed. \( \tilde{\text{S}} \). S. Native of Brazil within the tropics. Leaves 4 inches long and 2½ broad, on petioles about 15 lines long. Corolla densely clothed with silky down, having the tube almost an inch long, and the limb 4-6-parted.

Fiburnum-like Guettarda. Shrub 10 feet.

10 G. pedunculatis (Wall. cat. no. 6222) leaves ovate-oblong, acuminate, glabrous; peduncles axillary, solitary, 1-flowered, girded by a ring just under the fruit, which is extended into 2 opposite subulate points; fruit oblong, crowned by the 4 permanent teeth of the calyx. \( \tilde{\text{S}} \). S. Native of Srinagar.

Peduncular-flowered Guettarda. Shrub or tree.

11 G. platyrhoda (D. C. prod. 4. p. 456.) leaves oval, mucronate, acute at the base, on short petioles, glabrous and smooth above, but hairy beneath; stipulas triangular, acute; peduncles compressed, smoothish, length of the leaves, cyme at the apex, and bearing 5-7 flowers; limb of calyx short, tubular, a little toothed: fruit globose, depressed. \( \tilde{\text{S}} \). S. Native of Brazil, in the sand by the sea side at Bahia, where it was collected by Salzman.

Broad-peduncled Guettarda. Shrub.

12 G. mollis (D. C. prod. 4. p. 456.) leaves elliptic, somewhat mucronate, downy above and villous beneath; peduncles 5 times longer than the petioles; cymes capitulate, villous; flowers hexameric, with a villous tube, which is 2 or 3 times longer than the ovary. \( \tilde{\text{S}} \). S. Native of St. Domingo. G. elliptica, ex Hispaniola, Spreng. syst. 1. p. 789.

Soft Guettarda. Tree or shrub.

13 G. xylosteoides (B. H. et Kuntth. nov. gen. amer. 3. p. 420.) leaves oblong, acute, rounded at the base, glabrous above, and downy beneath, but hairy on the veins, as well as on the branchlets; stipulas lanceolate, length of the pedicels; peduncles 6 times longer than the petioles; cymes 3-7-flowered; flowers hexameric, having the tube 8 times longer than the ovary. \( \tilde{\text{S}} \). S. Native on the banks of the Orinoco, between Angustura and Ferreras. Dicrónbyrum divaricatum, Wild. in Schultes, syst. 5. p. 221. Flowers white. Fruit globose, downy, containing a 5-celled putamen.

Fly-Honeysuckle-like Guettarda. Tree 20 feet.

14 G. parviflora (Vahl, ecol. amer. 2. p. 26.) leaves oblong, polished, and glabrous on both surfaces, but having the middle nerve rather downy; stipulas small, subulate; peduncles crowded at the tops of the branches, rather shorter than the leaves, 3-flowered, rarely bifid, each branch bearing 3 flowers; flowers small, either pentamerous or hexameric; ovary striated; tube of calyx often obscurely bifid; tube of corolla villous. \( \tilde{\text{S}} \). S. Native of Santa Cruz, Montserrat; and of Mexico, at Acapulco. Edechei, Laefl. trav. 259, and p. 271. ex Rohr. Ixora pentandra, West. ms. Fruit globose, about the size of a pea, not crowned.

Small-flowered Guettarda. Shrub 6 to 8 feet.

15 G. odorata (Lam. ill. t. 154. f. 4.) leaves oval, acute at both ends, glabrous above, but rather villous on the nerve beneath, as well as on the petioles and branchlets; stipulas subulate, deciduous; peduncles almost one-half shorter than the leaves, villous, as well as the cymes, which are bifid; flowers pentamerous; tube of calyx unequal, 7 times longer than the ovary. \( \tilde{\text{S}} \). S. Native about Carthagena and Havana, among bushes by the sea side. Laugèria odorata, Jacq. amer. p. 64. t. 177. f. 91. pict. t. 259.

f. 16. Drupe containing a roundish 5-furrowed 5-celled putamen. Flowers of a dirty reddish colour, 9-10 lines long, villous on the outside, very sweet-scented at night. Fruit black, size of a pea. There is a spinaceous variety of this species according to Jacquin.

Sweet-scented-flowered Guettarda. Clt. 1818. Sh. 6 to 10 ft.

16 G. membranacea (Swartz, prod. p. 59. fl. ind. occ. 1. p. 635.) leaves ovate, acuminate, membranaceous, rather hispid on both surfaces; down very minute, curved; peduncles length of the pedicels, dichotomous; flowers secund, tetramerous; limb of calyx rather bifid, truncate; tube of corolla downy. \( \tilde{\text{S}} \). S. Native of Hispaniola, among bushes on the mountains. Corolla white, half an inch long. Drupe oblong, 4-seeded.

Membranous Guettarda. Shrub.

17 G. elliptica (Swartz, prod. p. 59. fl. ind. occ. 1. p. 634.) leaves elliptic, obtuse, smoothish above, and downy beneath, as well as on the branches; peduncles shorter than the leaves; cymes bifid; flowers tetramerous, with a silky tube, which is 3 times longer than the calyx. \( \tilde{\text{S}} \). S. Native of Jamaica, in dry fields. Drupe roundish, 4-seeded. Stigmae 2, blunt. Flowers small. This species is easily distinguished from G. mollis, with which it has been confused by Sprengel in his syst. Elliptic-leaved Guettarda. Tree 20 feet.

18 G. microphylla (Bartl. in herb. Hækne, ex D. C. prod. 4. p. 457.) leaves ovate-oblong and oblong, smoothish above, and rather downy beneath; peduncles 3 or 4 times shorter than the leaves, 3-flowered; calyx quadridifid, with acute segments; corolla silky on the outside, with rounded lobes. \( \tilde{\text{S}} \). S. Native of Luzon, one of the Philippines. Very like G. pareflora.

Small-leaved Guettarda. Shrub.

19 G. uruguayensis (Cham. & Schlecht. in Linnaea. 4. p. 183.) leaves elliptic-oblong, acuminate, rather pilose above, and

FIG. 101.
Rubiaceae. CXL. Guettarda.

Canescent from tomentum beneath, as well as the petals, branchlets, and inflorescence; stipulas lanceolate, triangular, caduceous; peduncles twice bifid, shorter than the leaves; limb of calyx very short, somewhat truncate; corolla silky; drupe oblong, 3-4-seeded. Υ. S. Native of the south of Brazil, on the banks of the Uruguay. Leaves 2 inches long, and an inch broad, on pedioles 1-2 lines long. Tube of corolla 2-3 lines long; lobes 5, roundish.

Uruguay Guettarda. Shrub 10 feet.

20 G. Finlaysoniana (Wall. cat. no. 6223.) leaves obovate-oblong, obtuse at the apex; calyx truncate; pedicels solitary, axillary, 1-flowered, much shorter than the leaves; corolla villose outside. Υ. S. Native of the East Indies.

Finlayson’s Guettarda. Shrub.

21 G. Wallychiana (leaves oblong, acuminate, glabrous; pedicels 1-flowered, rising in numbers from short axillary peduncles; calyx truncate; corolla glabrous, apparently purple, ½ inch long. Υ. S. Native of the East Indies; fruit roundish, not crowned. Perhaps belonging to the first section.

Wallych’s Guettarda. Shrub.

§ 2. Doubtful species, having 4-cleft silky corollas, and the drupes containing a 2-3-celled putamen. Perhaps species of the genus Stenostomum.

22 G. ? protracta (Bartl. in herb. Haecke, ex D. C. prodr. 4. p. 457.) leaves ovate or ovate-lanceolate, acuminate, rather villous on both surfaces, silky on the nerves and veins beneath; peduncles cymose, bifid, having the branches recurved. Υ. S. Native of Mexico. Perhaps a species of Stenostomum.

Var. β. longipes (D. C. l. c.) leaves ovate-lanceolate, with 7-8 rather prominent nerves on each side of the mid-rib; peduncles 4 times longer than the petioles; drupes ovate-oblong, acute, 2, sometimes 3-celled. Υ. S. Native of Mexico, at Acapulco.

Protracted Guettarda. Shrub.

23 G. ? armata (Bartl. in herb. Haecke, ex D. C. prodr. 4. p. 457.) armed with opposite spines; leaves ovate, acuminate, smoothish above, but clothed with hoary tomentum on the nerve and veins beneath, as well as on the branchlets; peduncles cymose, bifid, 3 or 4 times longer than the petioles; segments of calyx 4, narrow-lanceolate, acute; corolla silky, with acute lobes; drupe ovate-oblong, (ex Bartl.) 2-3-celled. Υ. S. Native of Mexico. Very nearly allied to G. protracta.

Armed Guettarda. Shrub 6 to 8 feet.

24 G. ? paniculata (Bartl. in herb. Haecke, ex D. C. l. c.) leaves ovate, acuminate, glabrous above, clothed with silky tomentum on the nerve and veins beneath, as well as on the branchlets; cymes dichotomous, many-flowered, on long peduncles, axillary, but the ultimate ones are disposed in a panicle; corolla clothed with silky tomentum outside, with ovate-oblong lobes. Υ. S. Native of Peru, on the mountains. Corolla 6-7 lines long. Teeth of calyx acute, smoothish. Fruit unknown.

Panicled-flowered Guettarda. Shrub 6 to 8 feet.

Sect. III. Ulolobus (from ovolos, ovulos, curled, and λυπος, lobos, a lobe; in reference to the curled lobes of corolla). D. C. prodr. 4. p. 457.—Laugéria, Ruiz et Pav. fl. per. 2. p. 22. but not of Jacq. Limb of calyx short, 5-parted almost to the base, permanent. Corolla silky on the outside, with 5 lobes, which are curled on the margins.

25 G. crisipilöra (Vahl, eclog. 1. p. 36. t. 6.) leaves broad-ovate, acuminated, obtuse at the base, having the lower lateral nerves approximate. Υ. S. Native of the Island of Montserrat, towards the tops of the mountains; ex Vahl; and of St. Vincent, on the edges of mountains, in inundated places, ex Forsyth; and about Santa Fe de Bogota, ex Mutis, in H. B. et Kunth, nov. gen. amer. 3. p. 420. G. crisipilöra var. a. Pers. Ræm. et Schultes. Stipulas large, undulatæ, foliaceous, ovate, acuminated. Guettarda membranacea, Sieb. pl. exsiccat. mart. no. 57, from Martinico, is the same as a very nearly allied species.

Crisipilöra Guettarda. Tree or shrub.

26 G. hirsuta (Pers. ench. 1. p. 200.) leaves ovate-oblong, acuminated, acute at the base; stipulas longer than the petioles; drupes ovate. Υ. S. Native of Peru, and in the hot parts of New Granada. Laugéria hirsuta, Ruiz et Pav. fl. per. 2. p. 22. t. 145. f. a. Guettarda hirsuta, H. B. et Kunth, nov. gen. amer. 3. p. 420. Peduncles equal to the petioles, even to the bifurcation, having the branches subrevolute and many flowered.


27 G. defensëns (D. C. prodr. 4. p. 458.) leaves ovate-oblong, acuminated, acute at the base; stipulas shorter than the petioles; drupes oblong, 3-4-celled. Υ. S. Native of Peru, in groves about Muna. Laugéria defensëns, Ruiz et Pav. fl. per. 2. p. 23. t. 145. f. b. Branches of cyme spreading, usually dependent. G. crisipilöra var. β. Pers. and Ræm. et Schultes, but is more nearly allied to hirsuta than to G. crisipilöra.

Dependent-cymed Guettarda. Tree 20 feet.


28 G. coriacea (Pers. ench. 1. p. 200.) quite glabrous; leaves elliptic-ovate, rather coriaceous, bluntish, almost nerveless, rather paler beneath; stipulas acuminated, deciduous; peduncles about equal in length to the leaves, compressed, bifid or twice bifid; flowers tetramerous, glabrous, unilateral, and distant along the branches of the peduncle; tube of calyx bluntly 4-toothed. Υ. S. Native of the Island of Montserrat, ex Vahl; and Guadaloupe, at Pointe-a-Pitre. Laugéria coriacea, Vahl, eclog. 1. p. 26. Laugéria tubulosa, Fors. in herb. L’Her. Drupe oblong, ex Vahl, containing a 4-celled putamen. Corolla 6-7 lines long. Perhaps Viviania Domingensis, Rafin. specchi. 1. p. 117.

Coriaceous-leaved Guettarda. Tree or shrub.

29 G. resinosæ (Pers. ench. 2. p. 200.) leaves lanceolate, attenuated at both ends, glabrous, glaucous beneath; stipulas combined into a somewhat truncate ciliated sheath; branchlets and cymes clothed with chamyln resin; peduncles a little shorter than the leaves; cymes bifid, crowded with flowers; flowers pentamerous, glabrous; limb of calyx short, truncate, or hardly 5-toothed. Υ. S. Native of Montserrat, ex Vahl; and Guadaloupe, where it was collected by Perrottet; of Porto Rico, Riedley, of Trinidad, ex Sieber, fl. trin. no. 112; and of Mexico, ex herb. Puerrari. Laugéria resinosæ, Vahl, eccl. 1. p. 27. t. 10. f. 6. with a figure. Terebraria, Sesse, fl. mex. icon. ined. Drupe oblong, containing a 4-celled, 4-seeded putamen, ex Vahl, but in the specimen examined the drupe contains a 4-5-celled 4-5-seeded putamen; there are therefore 2 species confused under this name.

Resinosæ Guettarda. Shrub 8 to 10 feet.

30 G. ? Bruxëixis (Wall. cat. no. 6220.) leaves elliptic, acuminated, coriaceous, quite glabrous; peduncles axillary, solitary, or twin; cymes dichotomous; stipulas ovate, acuminated. Υ. S. Native of the East Indies, in Siringagur. Flowers small. Calyx a little twisted.

Brown’s Guettarda. Shrub.
Species not sufficiently known.

31. G. Fontane'shi (D. C. prod. 4. p. 458.) stem arborescent; leaves broad-ovate, acuminate, and are, as well as the divaricate branches, villous; stipulas ovate, acute, deciduous. S. Native country unknown. G. hirsuta, Desf. cat. hort. par. ed. 3. p. 404. but not of Pers. Habit of G. argentea.

Desfontaines's Guettarda. Shrub.

32. G. umbellata (Spreng, neu entd. 3. p. 48.) leaves oblong, quite glabrous on both surfaces; branches tubercular, compressed, dilated at the top; peduncles axillary, aggregate; flowers pentamemorous, glabrous. S. Native of Brazil. The calyx is said to be 5-toothed, and the drupe 6-celled. This plant ought probably to be excluded from the order. Umbellate-flowered Guettarda. Shrub or tree.

Cult. For culture and propagation see Hamiltonia, p. 555. The species bear very fine leaves and flowers, and are therefore worth cultivating.


Lin. syst. Tetrandria, Monogynia. Calyx with a very short tube, and a 4-toothed limb. Corolla small, almost rotate, with a very short tube, and a 4-lobed spreading limb. Stamens 4, with exerted filaments, which are about equal in length to the limb of the corolla, and roundish anthers. Drupe dry, thin, oval, crowned by the calyx, containing a 2-celled nut; cells 1-seeded.—A sermentose shrub, native of Guiana, climbing among bushes. Leaves opposite, petiolate, ovate, acute. Stipulas oval, obtuse, deciduous, interpetiolar. Peduncles axillary, 3 times shorter than the leaves, racemose panicled: having the branches opposite opposite, the lower ones the longest. Flowers small, sessile along the branches, bluish.

1 M. sarmentosa (Aubl. guian. 1. p. 106. t. 41.) S. Native of French Guiana, upon trees on the banks of rivers. Lam. ill. t. 66. f. 2. Cunninghamia sarmentosæ, Willd. spec. 1. p. 615. Stipulas acute, ex Aubl., and the leaves tomentose beneath; but in the specimens examined the stipulas are obtuse, and the leaves are rather villous beneath, and at length glabrous. Perhaps there are two distinct species, Aublet's and Patris's.

Sarmentose Malanee. Shrub cl.

Cult. See Pedérida, p. 561. for culture and propagation.


Lin. syst. Tetrándria, Monogynia. Calyx with an ovate or oblong tube, and a short campanulate 4-toothed limb. Corolla tubular, 4-cleft, with acutish lobes, which are shorter than the tube. Anthers oblong, almost sessile in the throat, not exserted. Stigma bifid. Drupe somewhat baccate, ovate or oblong, crowned, containing a 2-celled putamen: cells 1-seeded. Seeds terete—Small trees, natives of the Mauritius. Leaves petiolate, opposite, or 3 in a whorl, oblong or obovate, glabrous, usually hsett with glandular hairs in the axils of the veins. Stipulas interpetiolar, acute, deciduous. Peduncles axillary, shorter than the leaves, bifid. Flowers small, whitish, sometimes dioecious from abortion, unilateral, and sessile along the branches of the peduncles. This genus has the inflorescence of Stenostomum, but differs in the parts of the flowers being quaternary, not quinary. The flowers are nearly like those of Malanea, but the inflorescence is different; the tube of the corolla is longer, and the anthers almost sessile.


Wheeled-leaved Antihrea. Tree 20 feet?


Var. β, barbinéris (D. C. prod. 4. p. 466.) nerves of young leaves bearded, and very hairy in the axils. S. Native of the Mauritius, Guettarda barbinéris, Sieb. fl. maur. 1. no. 61. Cham. et Schlcht. in Linnaea, 4. p. 190.

Var. γ, acuminata (D. C. l. c.) leaves almost smooth, long-acuminated. S. Native of the Mauritius. Guettarda acuminata. Sieb. fl. maur. 1. no. 60.

Dioecious Antihrea. Tree 20 feet?

3 A. frangula'cea (D. C. prod. 4. p. 460.) leaves opposite, ovate, acutish at the base, and rather acuminate at the apex, smoothish, with the axils of the veins glandless; flowers hermaphrodite; drupes ovate. S. Native of the Mauritius. Guettarda frangulaceà, Sieb. fl. maur. exsic. 2. no. 59. Drupe one-half shorter than in the first species, sometimes 3-celled and 3-seeded, which shows its affinity with Guettarda. Flowers small, whitish.

Frangula-like Antihrea. Tree.

Cult. For culture and propagation see Hamiltonia, p. 555.


Lin. syst. Pentandria, Monogynia. Calyx with an ovate tube, and a small 5-toothed limb; teeth permanent, connivent, rather unequal. Corolla funnell-shaped, having the tube a little wider at the throat, and a 6-lobed limb; lobes lanceolate, bluish. Anthers 5, oblong, hardly exserted. Stigma 2-lobed. Drupe ovate-oblong, crowned, containing a 2-celled putamen. Seeds terete, solitary in the cells, inverted. Embryo central, in the fleshy albumen.—West Indian trees. Leaves opposite, oval or oblong, on short petioles. Stipulas at length deciduous. Peduncles axillary, divided into a bifid cyme. Flowers small, white, sessile and unilateral along the branches of the cyme, and one in each fork.—Inflorescence of Antihrea a, but differs from that genus in the parts of the flowers being quinary; and from Guettarda in the putamen of the fruit 2-celled, not many celled.

§ 1. Corollas glabrous.

1 S. lu'cidiim (Geurt. fl. carp. 3. p. 69.) leaves oblong, obtuse, shining above, glabrous on both surfaces; teeth of calyx short, obtuse. S. Native of the West Indies, as in Jamaica, Santa Cruz, St. Lucia, Porto-Rico, Trinidad, etc. Stürmià lucidiim.
Rubiaceæ. 

**Acute** and **acutatum** lobes. 

S. Flowers 

Native S. leaves 

Native 

doubtful. 

quite species, p. of 

of 

tomentose known. 

acute a tree. 

2-celled Lucid- 2 

of 

Stenostomum. 

Pentandra, 

therefore olive-formed, 

mythological 

chioneos, 

Gaudichaud's 

Hamiltonia, 

1 C. glabra (Rich. l. c. under Crisca,) h. S. Native of Toritoisland. 

Psychotria megalospérmia, Vahl, eclog. amer. 

3. p. 3. t. 21. ex herb. Juss. but neither the description nor the figure agree well with it, and it is therefore Jacquinia venosâ, 


Glabrous Chione. Clt. 1824. Tree 40 feet! 

Cult. For culture and propagation see Hamiltoniâ, p. 555. 

CXVI. TIMONIUS (Timon or Aytimon is the name of the first species in Amboya). 

Rumph. amb. 3. p. 216. t. 140. 

D. C. prod. 4. p. 461.—Bobea, Gaud. voy. uran. t. 93. 

Bobâeâ, A. Rich. mem. soc. hist. nat. Par. 5. p. 215.—Burnéya, Cham. et Schlecht. in Linnaea. 4. p. 188.—Erichthis, Forst. but not of Lin. 

LIN. SYST. Tetrandria, Monogynia. Calyx with an ovate tube, and a tubular truncate 2-6-toothed limb. 

Corylina tubular, salver-shaped, with a 4-6-parted spreading limb, a naked throat, and ovate oblong lobes. Stamens 4, almost sessile, inserted in the upper part of the tube of the corolla. Anthers oblong-heart-shaped, sessile in the throat. Stigma 2, exerted, digitately 5-cleft, with the lobes linear. 

Drupe globoso, smooth, crowned by the limb of the calyx, containing from 7-25 bony distinct 1-seeded indesinable pyrene. 

Seeds inverte, linear. Albumen fleshy. Embryo terete. Glabrous trees. Leaves opposite. Stipulas interpetiolar, acute, entire. Peduncles axillary, shorter than the leaves, bearing each 3 flowers at the apex, the middle flower sessile, and the lateral ones pedicellate, each girdled by a cup-shaped 5-lobed persistent bractea at the base.—Allied to Guettardâ, but differs in the pyrene being distinct, not combined. 

1. T. Rumphi (D. C. prod. 4. p. 461.) leaves lanceolate; 


Rumphius's Timonius. 

Tree. 


The flowers are described by Chaminso and Schlecht. as quaternary and quinary, but they are also sometimes senary. 

Forster's Timonius. 

Tree. 

3 T. Gaudichaudii (Cham. et Schlecht. in Linnaea. 4. p. 190. under Burnéya) leaves elliptic, bluish, acute at the base; cymes on long peduncles: fertile ones 3-flowered: but the sterile ones are twice bifid and 7-flowered. h. S. Native of the Island of O-Walu, and of a number of the Sandwich Islands. Bœba élaióis, Gaud. in Freyc. voy. p. 478. t. 98. Fruit containing usually 12 bony pyrene. 

Gaudichaud's Timonius. 

Tree. 

Cult. For culture and propagation see Hamiltoniâ, p. 555. 

CXV. CHIONE (a mythological name, the daughter of Deucalion, or from χιονος, chionos, snowy, white as snow; in reference to the cymes of white flowers). D. C. prod. 4. p. 461.—Crúseia, A. Rich. mem. soc. hist. nat. Par. 5. p. 204. t. 19. f. 1. but not of Schiedea and Dipsacaceae, nor Bartl. nor D. C. 

LIN. SYST. Pentandra, Monogynia. Calyx with an obovate tube, and a marginal repandly 5-toothed limb. 

Coryllina tubular, short, with a 5-lobed limb; lobes flattish, obtuse. Stamens inserted above the tube. Style simple; stigma 2-lobed: lobes short, obtuse. Fruit olive-formed, rather fleshy, much furrowed when dried, crowned by the limb of the calyx, containing a 2-celled pericarp. Seeds solitary, almost terete.—A glabrous tree. 

Leaves opposite, coriaceous, joined together by an entire stipular sheath. Flowers white, cymose; cymes terminal, pedunculate. Allied to Malacnea. 

Cult. For culture and propagation see Hamiltoniâ, p. 555.
Corolla funnel-shaped, with a long straight tube (f. 102 b.), and 5 oblong lobes (f. 102 c.). Stamens 5, inserted in the throat of the corolla, inclosed. Stigma 5-cleft. Capsule crowned by the calyx, dehiscing at the apex, 1-celled, containing 5 triangular 1-seeded pyreneae. Seeds inserted by the base, erect, covered by a dry reticulated membrane or epidermis. Albumen very sparing. Embryo erect, with an oblong radicle, and cor- date foliaceous cotyledons.—East Indian shrubs. Leaves lanceolate, on short petioles. Stipulas short, acute, broad and adpressed at the base. Flowers disposed in fascicles or umbels, sweet-scented.—This genus has been joined with Ancylanthus by Jussieu, but is sufficiently distinct from that genus.

1 H. suaveolens (Roxb. hort. beng. p. 16. fl. ind. 2. p. 223) glabrous; leaves broad-lanceolate; heads of flowers densely umbellate, pedunculate, terminal; calyx beset with glandular hairs. \( \hat{\gamma} \). Native of the East Indies, on the Rajmuhal hills. Spermadicyon suaveolens, Roxb. ex. corn. 3. p. 32. t. 226. R. Br. in bot. reg. t. 343. Lianathus tubiflorus, Blum. bijdr. p. 990. Leaves 3-6 inches long. Stipulas broad, ensiform. Flowers sessile, in terminal corymbose-formed heads, on short trichotomous branchlets, numerous, pure white, delightfully fragrant.

Sweet-scented Hamiltonia. Fl. Oct. Cll. 1818. Sh. 4 to 6 ft. 2 H. corbina (D. Don, prod. fl. nep. p. 137.) leaves ovate-lanceolate, short-acuminated, scabrous on both surfaces, rounded at the base; calyceine segments linear, villous. \( \hat{\gamma} \). S. Native of Nepaul, at Narainhetti, and between Hetounra and Bhempedi, chiefly between Bhinousoban, and the last-mentioned village, forming the most extensive thickets. Dr. Wallich has also met it with about the village near Cheemasgurree, and on several mountains in the valley. Hamiltonia Dulina and Nonatelia filamentosa, Hamilton. mss. Hamilton. azereum, Wall. in Roxb. fl. ind. 2. p. 225. Spermadicyon azereum, Lindl. bot. reg. 1235. Flowers azure blue, perfuming the air by their delicious fragrance from November until March, during which time they are very beautiful. Inflorescence ample, densely villous, especially the corollas. The tender parts of the plant emit a fetid smell, like those of Pediéra and Serissa.

Scabrous Hamiltonia. Fl. Jan. Cll. 1823. Sh. 4 to 6 ft. 3 H. pilosa (Roxb. fl. ind. 2. p. 226) shrub stiff, very pilose; leaves lanceolate; fascicles of flowers axillary, intermixed with hairy bractees. \( \hat{\gamma} \). S. Native of the Moluccas.

Pilose Hamiltonia. Shrub 4 to 6 feet.

Cult. The species are desirable for every collection of stoves plants, being free flowerers, very fragrant, and of easy culture. They succeed best in a mixture of loam and peat; and cuttings strike root readily in sand, with a hand-glass over them, in a moist heat.

CXVIII. LEPTODERMIS (from \( \lambda \varepsilon \rho \tau \)o, lepto, slender, and \( \delta \varepsilon \rho \mu \a, \)derma, the skin; the branches are covered with separating fibrous bark). Wall. in Roxb. fl. ind. 2. p. 191. A. Rich, mem. soc. hist. nat. par. 5. p. 221. D. C. prod. 4. p. 462.—Hamiltonia species, D. Don, prod. fl. nep. p. 137.

Lin. syst. Pentandra, Monogyna. Involucrum calyciform, of 2 leaves, closely girding the ovarium. Tube of calyx inclosed within the involucrum; limb of calyx short, permanent, 5-lobed; lobes roundish, adpressed. Corolla funnel-shaped, seaflores from minute papillae, with a terete tube, which is hairy inside, and 5 ovate cuspidate lobes which are involucrately valvate in aestivation. Stamens 5, with very short filaments and in- closed anthers. Ovaryum 5-celled; cells 1-seeded. Style filiform; stigma quadrifid. Fruit oblong, 5-celled? 5-valved?—Shrubs, with decussate, tetragonal branches. Leaves lanceolate or oblong, on short petioles, membranous. Stipulas 5-length of petioles, adpressed, permanent, acute. Flowers sessile, scentless, white.—Perhaps sufficiently distinct from Hamiltonia.

1 L. lanceolata (Wall. in Roxb. fl. ind. 2. p. 191.) leaves lanceolate, attenuated, acute, membraneous, villous; flowers sessile by threes at the ends of the branches; stipulas triangular, villous; branches quadrangular, downy while young. \( \hat{\gamma} \). G. Native of Nepaul, on the mountains, though it is among the less common plants. Hamiltonia fruticosa, D. Don, prod. fl. nep. p. 137. Flowers white, scentless. According to the description in fl. nep. the flowers are said to be hexameric and hexan- drous.

Lanceolate-leaved Leptodermis. Shrub 3 to 4 feet.

2 L. oblonga (Bunge, in mem. acad. sc. Petersb. 2. p. 108.) leaves oblong, glabrous; flowers terminal, aggregate. \( \hat{\gamma} \). G. Native of China, on the mountains.

Oblong-leaved Leptodermis. Shrub.

Cult. See Hamiltonia above for culture and propagation.

CXIX. PSATHURA (from \( \psi \alpha \theta \varphi \omega \rho \sigma, \)psathuros, fragile or brittle; the branches are brittle). Comm. in Juss. gen. p. 206. mem. mus. 6. p. 396. Lam. ill. t. 260. Garri. fl. carp. 3. p. 82. t. 194. f. 4. A. Rich, mem. soc. hist. nat. par. 5. p. 214. D. C. prod. 4. p. 462.—Chicoinaéa, Comm.—Psathura, Poir. dict. 6. p. 587.—Psathyra, Spreng. syst. 2. p. 127. but not of Fries.

Lin. syst. Penta-Hexandra, Monogynia. Calyx with an ovate tube, and a campanulate 5-tubed persistent limb. Corolla bearded inside, with a short tube, and a 5-tubed spreading limb; lobes acute, rather longer than the tube, valvate in aestivation. Anthers 5-6, almost sessile at the throat. Stigmata 5-6-lamellate. Berry globose, furrowed, crowned by the limb of the calyx, containing 4-6 1-seeded pyreneae. Seeds erect. Albumen fleshy. Embryo erect.—Small glabrous trees, with knotted fragile branches. Leaves lanceolate, acute at both ends, petiolate, smooth. Stipulas ovate, caducous, with an elevated zone, which is joined to the petioles. Peduncles rising from the axis of the upper leaves, loosely panicked, shorter than the leaves.

1 P. Borbonica (Gmel. syst. 1. p. 577.) leaves oblong-lan- ceolate; peduncles 7-8-flowered. \( \hat{\gamma} \). S. Native of the Island of Bourbon, on the mountains, where it is called Bois cassant. P. corymbosa, Gardn. fl. carp. 3. p. 82. P. Borbonica, Roxb. fl. ind. 2. p. 158. Flowers minute, pentandrous, disposed in axillary and terminal trichotomous corymbs. Stigma 2-lobed. Drupes containing 5 pyreneae.

Bourbon Psathura. Tree small.

2 P. Murtifolia (A. Rich, diss. 1. c.) leaves oblong, bluish; peduncles usually 3-flowered, lateral flowers sterile and deciduous; limb of calyx 5-parted; lobes lanceolate. \( \hat{\gamma} \). S. Native of the Mauritius. Perhaps sufficiently distinct from the preceding.

Myrtile-leaved Psathura. Tree small.

3 P. terniflora (A. Rich. diss. 1. c.) leaves elliptic-lanceolate, acute; peduncles at the tops of the branchlets, usually by threes, 1-flowered; limb of calyx wide, obsolescently 5-7-toothed.

\( \hat{\gamma} \). S. Native of the Mauritius.

Three-flowered Psathura. Tree small.

Cult. For culture and propagation see Hamiltonia above.

4 & 2
‡ 1. Fruit containing 4 pyreæ. Myroniæ véræ.
1 M. obovata (Lam. ill. no. 1482. t. 68. f. 1. dict. 4. p. 397.) leaves obovate, obtuse, on short petioles; peduncles 1-3-flowered; berries bluntly tetragonal. 樨 S. Native of the Island of Bourbon, where it is called Bois de rat, from the fruit being grateful to mice and rats. M. Borbonica, Ræu. nom. Berries red, size of grapes.

Obovate-leaved Myronia. Shrub 4 to 6 feet.
2 M. MYRTIFLLA (Lam. ill. no. 1483. t. 58. f. 2. dict. 4. p. 398.) leaves ovate-lanceolate, acute, on short peduncles; peduncles 1-3-flowered; berries spherical. 樨 S. Native of the Island of Bourbon. M. lanceolata, Willd. spec. 1. p. 614. Rubiaceæ. no. 103. Sieb. fl. maur. fasc. 2.

Myrtle-leaved Myronia. Shrub 4 to 5 feet.


Many-flowered Myronia. Shrub 4 to 5 feet.

4 M. UMBELLATA (Barl. in herb. Haæeq, ex D. C. prod. 4. p. 463.) leaves obovate or obovate-oblong, coriaceous; peduncles axillary, many-flowered at the apex; pedicels 7-8, umbellate; berries roundish; calyceal teeth very short, acute. 樨 S. Native of the Island of Luzon, one of the Philippines. Segments of corolla valvate in aestivation. Genital not exserted. Seeds narrow, cylindrical, as in Guettârd, ex Barl. Perhaps a section of Myronia, as Laugèria is of Guettârdâ. Umbellate-flowered Myronia. Tree small or shrub.

Cult. For culture and propagation see Hamiltônia, p. 555.


Lin. syst. Tetra-Pentándria, Monogonyia. Calyx with an obovate tube, and a small 4-5-toothed limb. Corolla subcampanulate, spreading, 4-5-cleft, with lanceolate acute lobes, and a tomentose throat. Stamens 4-5, hardly exserted. Stigma capitate, bifid: having the lobes approximate (ex Rich.). Fruit pear-shaped, 6-8-striped, but not crowned, containing 4-5 1-seeded, bony, combined pyreæ. Embryo inverted. Alburnum fleshy.—Small glabrous trees, natives of the Mauritius. Leaves on short petioles. Stipulas lanceolate, acuminate, rather longer than the petioles. Peduncles axillary, 1-3-flowered. The number of the cells of the fruit is variable.

1 P. oleoides (Lam. ill. no. 1484. t. 65. f. 3.) leaves oblong, obtuse; stipulas glabrous; peduncles 1-3-flowered; drupes 8-seeded. 樨 S. Native of the Island of Bourbon, where it is called Bois Mussard. P. Commersœni, Gmel. syst. 1. p. 247. P. salicifolia, Willd. spec. 1. p. 614.

Olive-like Pyrostria. Tree 20 feet.
2 P. HEXASPERMA (Roxb. fl. ind. 1. p. 403.) leaves oblong, acute; stipulas pilose; corymbs axillary, dichotomous, with recurved branches; drupes 6-seeded.  SqlDbType. Native of the East Indies in the Island of Hominoa.

Six-seeded Pyrostria. Tree.
3 P. orbiculâris (A. Rich, 1. c.) leaves oval-oblong, sessile at the base and rather cordate, obtuse at the apex; stipulas glabros; peduncles 1-flowered, furnished each with an involucel composed of 2 keeled leaves, which girds the flower.  SqlDbType. Native of the Island of Bourbon.

Orbicular-leaved Pyrostria. Shrub.
4 P. cordifolâlia (A. Rich, 1. c.) leaves oval, acute, rather cordate at the base, on very short petioles; stipulas combined, sheath-formed, obtuse, and permanent; flowers pedicellate, solitary, girded by scales, which are combined into the form of an involucel; lobes of corolla oval, acute.  SqlDbType. Native of the Mauritius.

Heart-leaved Pyrostria. Tree small.
5 P. POLYMOPHÂ (A. Rich, 1. c.) leaves sometimes linear-lanceolate, sessile, variegated: sometimes orbicular and obtuse, petiolate: sometimes oblong-cordate, acute; stipulas acute, hardly combined at the base, caducous; flowers solitary, girded each by a 3-4-toothed tomentose involucel; lobes of corolla lanceolate.  SqlDbType. Native of the Mauritius.

Variable Pyrostria. Tree small.
6 P. MACROPHYLÂA (A. Rich, 1. c.) leaves oval-oblong, somewhat cordate, on short petioles, scrobiculate in the axils of the veins beneath; stipulas glabrous; flowers sessile, solitary, axillary, girded each by a 2-leaved involucel.  SqlDbType. Native of the Mauritius. Fruit egg-shaped, ribbed, crowned by the calyx.

Long-leaved Pyrostria. Tree small.
Cult. For culture and propagation see Hamiltônia, p. 555.
of the flowers; but it appears to come nearest to Pyrostria, but differs from that genus in the truncate calyx and in florescence. 1 O. sessiliflora (D. C. l. c.) h. s. Native of French Guiana, where it was collected by Patris. 

Sessile-flowered Octavia. Shrub. 

Cult. See Hamiltonia, p. 555. for culture and propagation.


Lin. syst. Tetrandria, Monogynia. Limb of calyx small, 4-toothed. Corolla globose, with a villous throat, and a short spreading 4-cleft limb. Stamens 4, incised; filaments very short, inserted beneath the throat; anthers linear. Style incised, perforating the fleshy disk; stigma subelliptic, 4-toothed at the apex. Drupe succulent, obovate, umbonate, inflated, when young 4-celled, but in the adult state usually 1-celled, containing generally 4 1-seeded pyrenes, which are furnished with papery aril at the base, and fixed to the central axis, which is incomplete. Embryo incurved.—A shrub, with the habit of Farnelia. Leaves small, trapeziform, almost sessile. Peduncles axillary, filiform, usually bearing 2 flowers at the apex.—This genus is nearly allied to Pyrostria. 

1 L. biflora (Blum. l. c.) h. s. Native of the western parts of Java, on the mountains in woods. 

Two-flowered Litosantes. Shrub 4 to 6 feet. 

Cult. For culture and propagation see Hamiltonia, p. 555.


Lin. syst. Peta-Decandria, Monogynia. Calyx with an ovate tube, a short permanent subtruncate limb, having its border hardly 5-10-toothed. Corolla rotate, almost without a tube, 5-10-parted; lobes linear-oblong, spreading. Stamens 5-10, scarcely adnate at the bottom of the corolla; filaments subulate; anthers linear. Stigma appearing simple at first sight, but on more close examination it will be found to be bilamellate. Drupe globose,arrowed, crowned by the calyx, containing 5-10 1-seeded pyrenes. Seeds pendulous. Albinum fleshy.—Glabrous shrubs. Leaves petiolate, having the lateral nerves hardly evident. Pediculus broad, short, mucronate, sheathing, permanent. Pedunclices axillary, paniced, rather longer than the leaves. 

Flowers small, white. 

1 E. fruticosa (Lin. spec. 251.) leaves obovate; panicles pedunculate; berries 8-10-furred, crowned by the truncate limb of the calyx. h. s. Native of Martinico, Guadaloupe, Jamaica, St. Thomas, Porto-Rico, Cuba, &c. in woods on the mountains. Swartz, obs. p. 80.—Browne, jam. t. 17. f. 3.—Plum. ed. Burn. t. 249. f. 2.—Eritalis odorifera, Jacq. amer. 72. t. 173. f. 23. Flowers white, sweet-scented, usually hexandrous. Berries purple. 

Var. β: inodora (Jacq. amer. p. 72.) shrubby; branches procumbent; flowers inodorous; berries white. h. s. Native of Curaçao, on rocks by the sea side. E. inodora, Rem. et Schultes, syst. 5. p. 268. This is a shrub about 2 feet high. 


2 E. angustifolia (D. C. prod. 4. p. 465.) leaves oblong-lanceolate, acuminate at both ends; panicles pedunculate, few-flowered; berry 5-9-furred, crowned by the 5-toothed limb of the calyx. h. s. Native of Cuba, about the Havannah. 

Teeth of calyx 5-6, more conspicuous than those of the first species, and the tube of the corolla is a little longer. Berry nearly dry, containing 5-7 pyrenes. 

Narrow-leaved Erithalis. Shrub. 

2 E. ? pentactomia (D. C. prod. 4. p. 465.) leaves oval-lanceolate, acute; pedicels terminal; fruit deeply 5-furred, not crowned by the calyx; style very short, crowned by 5 reflexed stigmas. h. s. Native of Cuba. Fruit the size of a pea, containing 5 chartaceous compressed narrow pyrene. Style permanent. Corolla and stamens unknown. Habit of the other species of Erithalis, but is probably a distinct genus. 

Five-angled-fruit Erithalis. Shrub 4 to 6 feet. 

Cult. For culture and propagation see Hamiltonia, p. 555.


Lin. syst. Pentandria, Monogynia. Calyx with a subglobose tube, a 5-cleft limb, and acute lobes. Corolla salver-shaped, with a terete tube, and 5 spreading linear obtuse lobes. Stamens 5; filaments exerted from the throat of the corolla; anthers oblong. Stigma thick, undivided. Drupe globose, crowned by the calyx, furrowed, containing 5 bony 1-seeded pyrenes. 

—Small glabrous trees. Leaves obovate, obtuse or emarginate at the apex, cuneate at the base, coriaceous, downy beneath. Stipulas sheathing. Spikes of flowers axillary, at the tops of the branches, pedunculate. Flowers second, 2-4 in a cluster, flesh-coloured, propped by 3-5 coloured bracteas. 

1 R. secundiflorus (Humb. et Bonpl. l. c.) h. s. Native of South America, on the shady banks of the Orinoeco and Ataparo, near St. Balthazar. Nonatelia secundiflora, Spreng. syst. 1. p. 751. The leaves and branches are covered by a kind of yellow resinous matter. Berries size of a pea, brownish. 

Second-flowered Retiniphyllum. Shrub 10 to 12 feet. 

Cult. For culture and propagation see Hamiltonia, p. 555.


Lin. syst. Pentandria, Monogynia. Calyx with an ovate tube, and a 5-toothed permanent limb. Corolla tubular, funnel-shaped, having the tube as if it was gibbous, and a 5-lobed limb. Stamens 5, almost inclosed. Stigmas 2? obtuse. Drupe globose, furrowed, containing 5 coriaceous 1-seeded pyrenes. Albinum horny.—Shrubs or small trees. Leaves glabrous or downy, oval-oblong. Stipulas combined together more or less, or free. Thyrse terminal, panicle-formed or corymb-formed. Flowers often bracteaclate, white. 


2 N. Paneméssis (D. C. prod. 4. p. 466.) leaves oblong, acuminated at both ends, petiulate; stipulas twin on both sides,
connected at the base by a ligula, linear-subulate, longer than the petioles; thryse terminal, panicked, divaricate, sessile, short. t. S. Native of Panama. N. divaricata, Bartl. in herb. Henke, but not of A. Rich. Drupe roundish, depressed, containing 5 pyrenes. Allied to N. racemosa.

Panama Nonatelia. Shrub 3 to 4 feet.

3 N. violacea (Aubl. guian. 1. p. 188. t. 73.) leaves elliptic, acuminate, tapering into the short petioles at the base; stipulas solitary on both sides, ovate, obtruse, deciduous; thryse many-flowered, about half the length of the leaves; flowers bracteate. t. S. Native of Guiana, in woods. Roxm. et Schultes, syst. 5. p. 221. exclusive of the observations. Psychotria violacea, Willd. spec. 1. p. 966. but not of Aubl. Orihasia violaceae, Gmel. Bracteas permanent. Corollas white. Berries ovate, 5-celled, of a violaceous color, about the size of currants.


4 N. officinalis (Aubl. guian. 1. p. 182. t. 73.) leaves ovate, acute, glabrous; stipulas combined into a 4-toothed sheath; panicles corysbose; involucrum small, 3-leaved under each flower. t. S. Native of Cayenne, in sterile places. Lam. dict. 1. p. 342. Stems nodose. Flowers white. Berry 5-celled and 5-seeded, according to Aublet. Psychotria involucrata, Swartz. fl. ind. occ. p. 413. a native of Jamaica, is certainly distinct from the plant of Aubl. in the fruit being 2-celled and 2-seeded.


5 N. luttea (Aubl. guian. 1. p. 190. t. 74.) leaves broad-ovate, acuminate; stipulas bluntly 2-lobed; panicles erect; tube of corolla narrow at the base, long, and with the segments of the limb acute. t. S. Native of French Guiana, at the foot of Mount Couron. Psychotria luttea, Willd. spec. 1. p. 971. but not of Sieb. Flowers yellow. Young fruit 5-celled, ex Aubl.


6 N. longiflora (Aubl. guian. 1. p. 185. t. 71.) leaves lanceolate, acuminate, acute at the base, glabrous; stipulas combined into a sheath, furnished with 2 acute lobes on each side; thryse panicked, few-flowered, pedunculate, one-half shorter than the leaves; tube of corolla incurved, and with the segments of the limb bluntish. t. S. Native of French Guiana, in woods. Psychotria longiflora, Willd. spec. 1. p. 971. but not of Poir. Leaves greenish yellow. Berry globose, brownish purple, 10-stripped, 5-celled, ex Aubl. Habit of Pollicaria Pavetta.

Long-flowered Nonatelia. Shrub 2 to 3 feet.

7 N. grandiflora (H. B. et Kunth, nov. gen. amer. 3. p. 422.) leaves elliptic-oblong, acuminate, acute at the base, glabrous; stipulas connate, bifid; corymbs pedunculate, terminal. t. S. Native of South America, on the banks of the Orinoco and the Tumini, near Javita. Flowers rose-coloured. Fruit oval, furrowed, 5-celled, ex Bonpl.

Great-flowered Nonatelia. Shrub.

8 N. macrophylla (H. B. et Kunth, l. c. p. 423.) leaves ovate, acuminate, membranous, glabrous above, and clothed with fine down beneath; panicles terminal, pedunculate. t. S. Native of South America, in the woods of the Orinoco near Javita. Schwenkfeldia macrophylla, Spreng. syst. 1. p. 765. Stamens probably 5. Flowers yellow. Drupe globose, 10-furrowed, 4-5-celled, ex Kunth.

Long-leaved Nonatelia. Shrub.

9 N. formosa (A. Rich. in mem. soc. hist. nat. Par. 5. p. 207.) leaves elliptic, long-acuminate, abruptly petiolate, glabrous above, and rugged from tument beneath; spikes terminal, simple, erect, length of leaves; flowers tetramerous; fruit 4-celled; corolla with a long tube, which is very villous inside. t. S. Native of French Guiana. Allied to N. longiflora.

Beautiful Nonatelia. Shrub.

10 N. divaricata (A. Rich. l. c.) leaves elliptic, acuminate, tapering into the petioles at the base; flowers 5-6-together, on the top of a common peduncle; fruit globose, 4-furrowed, containing 4 pyrenes. t. S. Native of French Guiana, in woods. Flowers unknown.

Divaricate Nonatelia. Shrub.

11 N. fusiâ (Walt. in Roxb. fl. ind. 2. p. 187.) leaves oblong, acuminate, oblique at the base, villous beneath; stipulas linear-lanceolate, broad at the base; flowers sessile, axillary, verticillate, with hispid bracteae; stigma 5-lobed. t. S. Native of the East Indies, in Silhet. Corolla funnel-shaped, white. Ovarium hairy, 5-celled. Habit of Sabicia. Perhaps a proper genus.

Hispid Nonatelia. Shrub 3 to 4 feet.

Cult. For culture and propagation see Hamiltônia, p. 555.


LIN. SYST. Tetra-Pentandra, Monogynia. Limb of calyx short, quite entire. Corolla 4-5-parted, villous inside, with the segments of the limb conning at the base, and spreading at the apex, each tipped by a short inflexed claw. Stamens 4-5, inserted, in closed in the base of the corolla. Stigma bifid, warted. Drupe globose, baccate, umbilicate, containing 4 1-seeded triquetrous pyrene, which are furnished with papery aril. Embryo albuminous, erect.—A climbing glabrous shrub. Leaves opposite, oblong-oblong, acute, coriaceous, glabrous. Stipulas permanent, twin on both sides, approximate, erect, at length marcescent. Flowers crowded, axillary. This genus is nearly allied to Nonatelia according to the author.

1 G. coriacea (Blum. l. c.) t. S. Native of Java, among bushes between Rompient and Kuriapan.

Coriaceous-leaved Gynochthodes. Shrub cl.

Cult. For culture and propagation see Perdoria, p. 561.


LIN. SYST. Tetra-Pentandra, Monogynia. Limb of calyx urceolate, quite entire, deciduous. Corolla with a short tube, and a spreading 4-5 eell limb; lobes oblong-linear. Stamens 4-5, exserted; filaments inserted in the throat; anthers long, linear, incumbent. Style perforating the disk. Stigma bifid, exserted. Drupe globose, umbilicate, containing 4 1-seeded charactefesally arilliuate pyrene, which are hollow inside, and gibbous on the outside. Embryo albumaceous, erect.—Glabrous climbing shrubs, with terete branches. Leaves opposite, petiolate. Stipulas broad, short, truncate. Corymbs or umbels axillary and terminal, simple or compound. This genus is nearly allied to Gynocbitodes, but differs from it in the stamens being exserted.

1 C. scandens (Blum. bijdr. p. 468.) leaves oval, acute; flowers subumbellate, exceeding the upper leaves. t. S. Native of Java and the island of Nusa-Kambang, on the mountains, climbing upon trees, where it is called Sambon and Tjen-kankan.

Climbing Celsonpermum. Shrub cl.

2 C. corimbosum (Blum. herb. ex D. C. prod. 4. p. 468.) leaves oblong, acuminate at both ends; flowers subumbellate, 3 times shorter than the upper leaves. t. S. Native of Java.


Lin. syst. Pentändria, Monogynia. Calyx with an ovate tube, and a 5-parted limb (f. 103. d.); lobes acute. Corolla tubular, incurved (f. 103. b.), with the tube widened at the apex, and an irregular 5-lobed limb (f. 103. c.).: the 2 superior lobes the longest, all ending in callous points. Anthers 5, sessile at the throat (f. 103. e.). Stigma thick, terete, 5-lobed at the apex (f. 103. d. e.). Ovarium 5-celled (f. 103. g.); cells 1-seeded. — A shrub, with villous branches. Leaves elliptic, obtuse, puberulous, on short pedioles, reticulated beneath. Stipulas coriaceous, acute, sheathing at the base. Flowers 1-3 together, on short pedicels, axillary, spreading, bracteolate, hairy. — From the stigma and lobes of the corolla this genus agrees with Cuviera.

1 A. rubiginosa (Desf. l.c.) Ṣ. Native of Angola, on the western coast of Africa (f. 103). Rasty Ancylanthus. Shrub 2 to 3 feet. Cult. For culture and propagation see Hamiltönia, p. 555.


1 P. horizontalis (Schum. pl. guin. p. 112.) branches horizontal, unarmed; peduncles umbellate. Ṣ. Native of Guinea. Stigma conical, and as if it was furnished with a reflexed membrane from the very loose margin, truncate at the apex. Horizontal-branched Phallaria. Shrub.


Lin. syst. Pentändria, Monogynia. Calyx with a short hemispherical tube, and a 5-toothed limb. Corolla funnel-shaped, with a long tube, and 5 roundish reflexed lobes. Anthers 5, almost sessile in the throat. Style thick at the base, 5-furrowed; stigma cylindrical, truncate at the base and apex, 5-furrowed. Drupa dry, containing a 2-celled rugose nucleus; cells 1-seeded, but one of them is usually abortive. — A shrub. Leaves opposite, on short pedioles, ovate-oblong, attenuated at both ends, glabrous. Stipulas unknown. Corymb terminal; pedicels 2-3-flowered. Flowers white. This genus is nearly allied to Paliacaea, if the fruit be 2-celled, but if it be 5-celled it is more nearly allied to Nonatélia; but in the form of the stigma it agrees with Cuviera.

1 H. Owarieæ (Beauv. l.c.) Ṣ. Native of Western Africa, in the kingdom of Waree in deserts. Waree Hylaciurn. Shrub. Cult. For culture and propagation see Hamiltonia, p. 555.


Lin. syst. Pentändria, Monogynia. Calyx with a short tube, and a 5-parted limb: lobes linear, acute, foliaceous, spreading, 3 times longer than broad. Corolla campanulate, 5-cleft; lobes linear, very acute, hardened, and therefore spinaceous? Anthers 5, inserted in the throat; filaments very short. Stigma large, dilated, cup-formed, obtuse, and somewhat pentagonal, with reflexed edges. Fruit baccate, 5-celled; cells 1-seeded. — A glabrous shrub, with diverging branches. Leaves oval-oblong, acute, almost sessile. Stipulas combined into a short bidentate sheath. Panicles terminal, corymbose. The corolla has a membrane on the inside, which is separable from it, and this membrane is probably furnished with the stamens. Ovarium destitute of the urceolus at the apex.

1 C. Acutiflora (D. C. l. c.) Ṣ. Native of Sierra Leone, where it was collected by Smeathmann. Cuviera Africana, Spreng. syst. 1. p. 700. Acute-flowered Cuviera. Shrub 3 to 4 feet. Cult. For culture and propagation see Hamiltonia, p. 555.

CXXXIII. DONDEA (named after James de Dondis, who was among the first who illustrated the descriptions of plants by figures). D. C. prod. 4. p. 469. but not of Adams. nor Scop. nor Rchb.

Lin. syst. Pentändria, Monogynia. Calyx with a tubinate tube, which is adnate to the ovarium, and a very short hardly 5-toothed limb. Corolla with a short broad tube, furnished with one series of retrograde scarious stiift hairs inside, which is perhaps the loose jagged part of a membrane inside the tube; lobes 5, acuminated, valvate in aestivation, but at length spreading. Stamens 5, inserted in the throat of the corolla between the lobes; filaments short, slender. Style filiform, tumid in the middle, and hispid. Stigma ovate, truncate at the base, almost cup-shaped. Ovarium 1-celled? many seeded? Fruit unknown. — A glabrous shrub, native of India, with slender branches. Leaves oblong, acuminated, acute at the base, on very short pedioles. Stipulas acute, short, deciduous. Racemes 3-4-flowered, short, axillary or rising from very short branches, bracteolate, much shorter than the leaves. — This genus is nearly allied to Cuviera and Stigmántthus, but differs from both in the truncate calyx, which is 5-parted in those genera; from Cuviera in the limb of the corolla being unarmled, in the tube being pilose inside, not clothed by a membrane, in the form of the stigma, and perhaps of the fruit; and from Stigmántthus in the tube of the corolla being short, not long, in the style being tumid in the middle, and in the ovarium being turbinate, not roundish.

1 D. Leschenaultii (D. C. prod. 4. p. 469.) Ṣ. Native of the East Indies, on mountains, where it was collected by Leschenault.

Leschenault’s Dondeia. Shrub 4 to 5 feet. Cult. For culture and propagation see Hamiltonia, p. 555.

Lin. Syst. Pentândria, Monogynia. Calyx with a short tube, a 5-parted limb, and filiform segments. Corolla funnel-shaped, with a long tube, and 5 ovate-oblong spreading lobes. Stamens 5; filaments very short; anthers reflexed. Style filiform, longer than the corolla; stigma ovate, furrowed, large. Berry dry, tabercular, compressed, 1-celled. Seeds many, bony.—A climbing shrub, with glabrous lanceolate leaves, Cymes large, axillary, and terminal. Flowers white.—This genus is not sufficiently known; it differs from Cuvieria in the 1-celled fruit; and from Dondisia in the 5-parted calyx. Perhaps both this genus and Dondisia are referrible to Tribe Gardeniaceae, subtribe Gardeniinae.


Cymose-flowered Stigmatthus. Shrub climbing.

Cult. See Hamiltonia, p. 555. for culture and propagation.


Lin. Syst. Pentândria, Digoyna. Limb of calyx campanulate, cleft in 5 parts beyond the middle; lobes acuminate. Corolla sub-campanulate, deeply 5-parted, with hardly any tube, but with erectish lanceolate lobes or segments, which are somewhat reflexed at the apex. Stamens 5; filaments very short, inserted in the bottom of the corolla, conuate; anthers combined into an ovate-oblong somewhat pentagonal tube, which is 5-celled inside; cells regularly disposed, 3 external and 2 internal. Style length of stamens. Stigma bifid; with the lobes erect and obtuse. Ovarium 2-celled; cells ovulate. Drupe pea-formed, umbilicate, containing a 2-celled globose nucleus, rarely 1-celled from abortion.—A small shrub with a short stem. Leaves fleshy, in a whorl, linear, obtuse, with revolute margins. Stipulas interpetiolar. Flowers small, disposed in short, nearly simple axillary racemes: having 2 opposite scale-formed bracteas under each flower.

1. S. mari̇tima (Jacq. 1. c.). ². S. Native of Curacao, on rocks by the coast. The leaves resemble those of rosemary, and the stipulas are blackish. Flowers small. The whole plant has a disagreeable smell.

Sea-side Strumpfia. Shrub 3 feet.

Cult. For culture and propagation see Hamiltonia, p. 555.

CXXXVI. BILLIO'TIA (named by Aloysia Colla, of Turin, after his daughter, Madame Tecofila Billioti, a famous botanical artist). D. C. prod. 4. p. 618. but not of Colla.—Vivaniâ, Colla. ann. soc. lin. par. 1825. but not of Cav. nor Radii nor Rafin.—Melanopsisium, Cels. hort. but not of Poit.

Lin. Syst. Penta-Iepiândria, Monogynia. Calyx with the tube adhering to the ovarium, and a 5-parted limb. Corolla salver-shaped: having the tube bearded with bristles inside, and a 5-parted limb. Stamens 5-7, adnate to the tube. Ovarium crowned by a nearticiferous urceolus. Style 1; stigmas 4. Drupe 1-seeded by abortion.—A smoothish shrub. Leaves opposite, petiolate, elliptic, acuteish, villous on the petioles, margins, and the nerves on the under side of the leaves, the rest glabrous. Stipulas solitary at each of the nodi, probably formed of 4, which are combined into a sheath, which is
cleft on one side, and denticulated at the apex, downy when young, brown in the adult state, falling off at length in a circular manner at the base.

1 B. psychotrioides (D. C. l. c.). ². S. Native country unknown. Vivaniâ psychotioides, Colla, l. c. Melanopsisium nigrum, Cels. hort. Colla, hort. rip. t. 35. Leaves 3 inches long and 15 lines broad, on pedioles 3-4 lines long. Stipulas 6-7 lines long. Flowers white, disposed in terminal heads.


Tribe VIII.

PEDERIE'Æ (this tribe agrees with Pædræ in important characters). D. C. prod. 4. p. 470.—Lygodysodeæce, Bartl. in herb. Hænke, ex D. C. prod. 4. p. 470. Fruit 2-celled, indescendent, barby, fleshy, and the rind is easily separated from the carpels or nuts, which are compressed, 1-seeded (f. 104. f.), and hanging from the central filiform axis. Albumen fleshy.—Climbing shrubs, with opposite leaves and interpetiolar stipulas.


Lin. Syst. Pentândria, Monogynia. Calyx with an ovate globose tube, and a 5-toothed acute, permanent limb (f. 104. a.). Corolla having the tube much longer than the teeth of the calyx (f. 104. b.), with a hairy throat, and 5 somewhat revolute lobes (f. 104. c.). Anthers oblong, sesilar within the tube (f. 104. c.). Style equal in length to the tube; stigmas 2, slender (f. 104. d.), exerted. Fruit indescendent, oval, somewhat compressed, shining, crowned by the calycine teeth (f. 104. g.); the rind is crustaceous, and at length becomes brittle and breaks irregularly, and therefore is easily separated from the carpels or seeds. Carpels or seeds 2 in each fruit, indescendent, oval, applied together, girded by a nerve-formed winged margin, hanging by a thread from the base of the fruit, and when the rind has been separated from them appear pendulous. Albumen a thin fleshy membrane, combined with the tegument of the carpella or wanting altogether. Embryo straight, with an inferior terete radicle, cordate foliaceous flat cotylodons, and an inconspicuous plumule.—Smoothish twining shrubs, holding the same station in America as the genus Pædræ does in Asia. Stems terete or compressed. Leaves opposite, petiolate, cordate or ovate, acuminate. Stipulas very short, rather truncate, combined with the petioles. Panicles few-flowered, loose, terminating in few-leaved, axillary branchlets, or axillary and leafy.—This genus comes very near Pædræ, and might probably form a distinct order with it from the distinct calyx and carpels.

1 L. fæ'tida (Ruiz et Pav. fl. per. 2. p. 48. t. 185.) stems alternately compressed and furrowed; corvymb parasolitary, leafless, one half shorter than the leaves; leaves all more or less cordate. ². S. Native of Peru, in groves at Muna and Pozuzo. Dysodea fæ'tida, Pers. ench. 1. p. 210. Petioles 4 lines long. Flowers purplish white. This plant has been confused with Pædræ fæ'tida by Sprengel.

Fetid Lygodysodea. Shl. tw. 2 L. cilia'ta (Bartl. in herb. Hænke, ex D. C. prod. 4. p.
561. P. pederea (Linn. mant. p. 52.) leaves oblong or lanceolate, coriaceate at the base, glabrous; panicles axillary, opposite, short, few-flowered, rarely terminal; bracteoles minute; anthers inclosed; berry ovate, a little compressed. \( \text{E. S. Native of the East Indies, very common in many places, as well as of} \)

**Petid Paèderia.** Clt. 1806. Shrub cl. 2 P. recurvata (Roxb. fl. ind. 2. p. 518.) leaves lanceolate, acuminate, glabrous; corollas terminal, recurved; anthers inclosed; berries globose, dry, striated a little. \( \text{E. S. Native of the East Indies, at Chittagong. Leaves 6 inches} \)
long and from 2-3 broad. Stirps with a subulate hairy point. Stigma simple, linear, clavate. Berry size and colour of a black currant.

**Recureted-coromboid Paèderia.** Shrub cl. 3 P. macrogæa (Wall. cat. no. 7392.) leaves broad, coriaceae, acuminate, downy above and woolly beneath; racemes long, axillary and terminal, panicled, downy; fruit oblong, compressed, with a polished rind. \( \text{E. S. Native of the Burmese Empire, on the banks of the river Abrain. Flowers} \)
green and purple.

**Woolly-leaved Paèderia.** Shrub cl. 4 B. lanuginosæ (Wall. pl. asiatic. rar. 2. p. 52. t. 165.) leaves broad-ovate, and ovate-lanceolate, acuminate, sagittately coriaceae at the base, downy above and woolly beneath; racemes long, axillary and terminal, panicled, downy or ploose as well as the petioles; fruit roundish, compressed. \( \text{E. S. Native of the Burman Empire, on the banks of the river Abrain. Flowers} \)
green and purple.

**Whorled-leaved Paèderia.** Shrub cl. 5 P. tennesia (Blum. biujr. p. 968.) leaves ovate-cordate, acute, tomentose beneath; panicles axillary and terminal, elongated, leafy. \( \text{E. S. Native of Java, among bushes on the mountains, common.} \)

**Whorled-leaved Paèderia.** Shrub cl. 6 P. verticillata (Blum. biujr. p. 968.) leaves 3 in a whorl, elliptic-oblong, acuminate, glabrous; panicles axillary and terminal, elongated, leafy. \( \text{E. S. Native of Java, on Mount} \)
Salak.

**Erect shrubs, which probably do not rightly belong to the genus.**

7 P. erëcta (Roxb. fl. ind. 2. p. 519. but not of Spreng.) erect; leaves almost sessile, broad-lanceolate, smooth; panicles terminal, erect, in the forks of the branches; stems exserted a little. \( \text{E. S. Native of the East Indies, in Silhet. Leaves} \)
4 inches long and 1 ½ broad. Flowers numerous, small, white, inodorous. Berries the size of a pea, when ripe highly polished, black, smooth.

**Erect Paèderia.** Shrub 2 to 3 feet.

8 P. ternæa (Wall. in Roxb. fl. ind. 2. p. 520.) erect, trichotomous, smooth: with triangular branches; leaves 3 in a whorl, oblong-lanceolate; corollas axillary, trichotomous, erect, shorter than the leaves; limb of calyx campanulate, obscurely 5-toothed. \( \text{E. S. Native of the East Indies, on the} \)
Juyuntyapoora mountains bordering on Silhet. Flowers rather large, funnel-shaped, white, on long filiform pedicels, each pedicel having a pair of linear ciliated bracteoles above the middle. The flowers are said to be fragrant when quite fresh, but they emit a very offensive smell on being steeped in water after they have been dried. Corolla fleshy, half an inch long, with a 5-cleft, rarely 4-cleft border. Fruit unknown.
Ternate-leaved Pæderia. Tree small.

† Species not sufficiently known.

9 P. ? Valleria kar'a (Juss. mem. mus. 6. p. 381.) climbing; branches terete, villously tomentose; leaves broad-ovate, acute, somewhat cordate, rather pilose above, and rather woolly beneath; coryms axillary, many-flowered. b. C. Native of Malabar. Rheed. mau. 7. p. 35. t. 18. Hombiensis, Adams, fam. 2. p. 159. Berry globose, green, probably 1-seeded. Flowers 5-cleft, according to the figure, but tetrandrous according to the description.

Valleria Kar'a Pæderia. Shrub cl.

10 P. sessiliflor a (Poir. suppl. 2. p. 449.) stems ascending; leaves lanceolate, glabrous; petioles geniculated at the base; racemes rather longer than the leaves, bracteate, pannicled; flowers sessile, sub-secund. b. S. Native of the Mauritius. Said to be allied to P. fastida, but is probably a species of Laugertia.

Sessile-flowered Pæderia. Shrub ascending.

11 P. Brasiliana (D. C. prod. 4. p. 472.) leaves cordate-oblong, pilose beneath and on the branches; panicles terminal, much branched; flowers pedunculate. b. S. Native of Brazil, in the province of Minas Geraes. Anciers inclosed. Berry dry, containing 2 pyrene. Pædræa erética, Spreng. n. entd. 3. p. 34. but not of Roxb.

Brazilian Pæderia. Shrub 3 to 4 feet.

Cult. The species of Pæderia are free growers, and will thrive in any kind of rich light soil; and cuttings strike root readily in the same kind of soil, under a hand-glass.

Tribe IX.

COFFEACEÆ (this tribe agrees with the genus Coffea in the fruit being baccate, and in containing 2 hard 1-seeded nuts). D. C. diss. 1806. H. B. et Kunth, non. gen. amer. 3. p. 352. exclusive of some genera. A. Rich, ex D. C. prod. 4. p. 472. —Psychotriaceæ and Cephalidæae, Cham. et Schlecht. in Linnaea. 4. p. 4. and p. 193. Fruit 2-celled (f. 105. h. f. 107. c.), baccate, containing 2 1-seeded bony or crustaceous nuts (f. 107. d.), which are flat inside and usually marked by a furrow on the outside; rarely containing only 1 nut from abortion. Nuts adhering by the inner sides. Albumen horny. —Trees or shrubs. Leaves opposite. Stipulas inter-petiolel, with 2 on each side, which are either combined or distinct.

Sub-tribe I. COFFEEÆ (this sub-tribe contains shrubs agreeing with the genus Coffea in having distinct flowers). D. C. prod. 4. p. 472. —Psychotriaceæ, Cham. et Schlecht. 4. p. 4. Flowers distinct, not combined.

CXL AMARACARPUS (from ama, amara, leading water, and carpus, karpos, a fruit; probably in reference to the furrow on the outside of the pyrene or nuts). Blum. biijdr. p. 954. A. Rich, mem. soc. hist. nat. par. 5. p. 198. D. C. prod. 4. p. 472.

Lin. sys. Tetradnria, Monogyния. Calyx with an ovate tube and a 4-cleft unequal limb. Corolla funnel-shaped, with a villous throat and a deeply 4-cleft limb. Stamens 4, inserted in the throat of the corolla. Style 1; stigma 2-lobed. Drupes baccate, crowned by the calyx, containing 2 bony 1-seeded pyrene, which are furrowed a little on the back.—A small shrub, with downy branches. Leaves opposite, on short petioles, lanceolate, glabrous above, paler beneath, and rather downy on the veins. Stipulas connate at the base, bifid at the apex, deciduous. Flowers small, solitary, in the axils of the leaves, rarely terminal, sessile, bracteolate at the base.—Habit and axillary inflorescence of this genus disagree with Psychotria.

1 A. Pubescent (Blum. biijdr. p. 954). b. S. Native of Java, and the Island of Nusa-Kambanga.

Pubescent Amaracarpus. Shrub.

Cult. See Coffea, p. 584. for culture and propagation.


Lin. sys. Pentändria, Monogyния. Calyx with a globose tube, and a small 5-toothed permanent limb. Corolla, stamens, and style unknown. Berry globose, 3-celled, crowned by the calyx. Seeds solitary in the cells, and fixed to the bottom of the cells. Albumen cartilaginous fleshly. Embryo very minute, seated in the base of the albumen, with a short inferior radicle.—An Indian shrub, furnished with opposite spines, but the leaves and flowers are hardly known.—This genus is nearly allied to Canthium, but differs in the seeds being fixed to the bottom of the cells, not to their tops, and in the embryo being small. The Spina spinarum of Rumph. am. cited by Gaertn., for this plant has nothing to do with Rubiaceæ, in the leaves being alternate and serrated, and is therefore referable to Stigmatoria Janghiomas; but perhaps the Oxyæanthes Javanica, Rumph. fam. 7. t. 19. f. 3. is a species of Damnacanthus or Canthium.

1 D. Indicus (Gaertn. fil. l. c.). b. S. Native of the East Indies. Carissa spinarum, Thunb. in litt. to Gaertn.

Indian Damnacanthus. Shrub.

Cult. For culture and propagation, see Chioceœa, p. 569.


Lin. sys. Tetra-Pentändria, Monogyния. Calyx with an ovate tube, and a short 4-5-toothed limb. Corolla with a short tube, a broadened throat, and 4 or 5 spreading lobes. Anthers 4-5, inserted at the throat, hardly exerted. Style filiform, exserted; stigma undivided, thick, ovate-globose, or mitre-formed. Berry globose, or didymously, fleshy, crowned by the calycine teeth, 3-celled. Seeds solitary in each cell, inserted towards the apex, inverted, incurved. Albumen fleshy. Embryo central, with a long superior radicle.—Asiatic or African shrubs, with spinose or unarmed branches. Leaves opposite, rather coriaceous. Stipulas interpetiolar, solitary on both sides. Pediuncles axillary, short, many-flowered.

Sect. I. EUCA'THUM (from eu, well or good, and canthium; this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 473. Mature fruit 2-celled, terminated by an umbilicus.

* Unarmed shrubs, with pentandrous flowers.

1 C. Cornelia (Cham. et Schlecht. in Linnaea. 4. p. 14.) branches unarmed; peduncles, calyces, and petioles villous; leaves oval, obuse at the base, acute at the apex, rather villous on both surfaces; peduncles bifid; cymes dense, many-flowered. b. S. Native of Senegal. Pavetta Cornëlía, Reichh. in Sieb. fil. seneg. excis. no. 21. Fruit unknown. Flowers white.

Cornélia Canthum. Shrub 4 to 5 feet.

2 C. Subcor'batum (D. C. prod. 4. p. 473) unarmed; leaves ovate, rather cordate, acutish, downy beneath, as well as on the branches; peduncles bifid, cymose, many-flowered; fruit a little compressed and rather cordate. b. S. Native of Senegal,
humid places; and of Gambia, near Albreda, where it was collected by Leprieu and Perrottet. Flowers smaller than in any other species of the genus. Stigma ovate. Fruit almost like that of the following.

Subordinate-leaved Canthium. Tree.

3. C. diodymum (Gartn. fil. carp. 3. p. 94. t. 196. exclusive of the syn. of Rehder.) shrubby, unarmed, glabrous, and smooth; leaves on short petioles, obtuse, and oval, glandular in the axils of the veins beneath; cymes axillary, on short peduncles; fruit didymous. \( \varphi \). S. Native of Coromandel, on the mountains.

Didymous-fruited Canthium. Shrub.

4. C. Moluccanum (Roxb. fl. ind. 2. p. 172.) shrubby, unarmed; leaves oblong; tube of corolla gibbous, length of style; stigma turbinate. \( \varphi \). S. Native of the Moluccas. The rest unknown.

Molucca Canthium. Shrub.

5. C. Fasciculatum (Blum. bijdr. p. 967.) arboreous, unarmed; leaves elliptic-lanceolate, glabrous; flowers in axillary fascicles. \( \varphi \). S. Native of the west of Java, in mountain woods. Said to be allied to C. diodymum.

Fascicled-flowered Canthium. Tree.

6. C. glabrum (Blum. bijdr. p. 967.) arboreous, unarmed; leaves ovate, or elliptic-oblong, obtuse, acutish at the base, glabrous; cymes axillary, branched, many-flowered. \( \varphi \). S. Native of Java, in woods on the mountains.

Var. \( \beta \), puberulum (Blum. l. c.) leaves roughish above and puberulous beneath. \( \varphi \). S. Native of Java, at the foot of Mount Salak.

Glabrous Canthium. Tree.

7. C. militae (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 474.) unarmed, glabrous; leaves petiolate, ovate, acuminate, glandular in the axils of the veins beneath; cymes axillary, loose, 3 times shorter than the leaves. \( \varphi \). S. Native of the Island of Luzon, one of the Philippines. Stipulas acuminate. Cymes bipartite, with diverging branches, and many-flowered branchlets. Calyx with 5 short, acute teeth.

Mild Canthium. Shrub.

8. C. lucidum (Hook. et Arn. in Beech, voy. pt. bot. p. 65.) branches unarmed; leaves on short petioles, elliptic, obtuse, attenuated a little at the base, coriaceous, shining above, pale beneath; cymes pedunculate, axillary, nearly globose. \( \varphi \). S. Native of the Society Islands. Calyx 4-5-toothed. Corolla 4-5-lobed. Stamens 4-5. Closely allied to C. glabrum and C. niten.

Lucid-leaved Canthium. Shrub.

** Unarmed shrubs, with tetrandrous flowers.

9. C. nitens (D. C. prod. 4. p. 474.) unarmed, glabrous; leaves petiolate, broad-ovate, bluntish, shining and glossy above; racemes compound, axillary, many-flowered, a little longer than the petioles. \( \varphi \). S. Native of the East Indies, where it was collected by Leschenault. Petioles 8 lines long. Stipulas triangular, deciduous. Peduncles disposed in dense panicles. Tube of corolla a little longer than the lobes, which are oval and obtuse. Stigma thick, ovate, much exerted.

Shining-leaved Canthium. Shrub.

*** Spinose shrubs, with tetrandrous flowers.

10. C. Parviflorum (Lam. dict. 1. p. 602.) shrubby; branchlets glabrous; spines opposite, horizontal, supra-axillary; leaves ovate, on short petioles, smooth, longer than the spines, usually in fascicles; racemes rising beneath the spines at the axils; berries nearly globose. \( \varphi \). S. Native of Coromandel, frequent. Roxb. cor. l. p. 39. t. 51. fl. ind. 2. p. 170. Gartn. fil. carp. 2. p. 196. f. 37. W. Schinz tetrandra, Wildl. spec. 1. p. 1224. Kandn-kara, Rheed. mal. 5. p. 71. t. 36. When the plant is in luxuriance, the spines are sometimes threefold. Flowers small, yellow. Berries yellow, obovate, compressed laterally, size of a cherry. The bush makes excellent fences. The leaves are universally eaten in curries; on this account the plant has the name of Balusoo-kura, which latter word means esculent.

Small-flowered Canthium. Shrub 5 to 6 feet. 11. C. Hebe cladum (D. C. prod. 4. p. 474.) shrubby; branchlets velvety; spines opposite, rising from an acute angle; leaves obovate, glabrous, hardly longer than the spines; pedicels numerous, 1-flowered, axillary. \( \varphi \). S. Native of the Island of Luzon, one of the Philippines. C. parviflorum, Bartl. in herb. Henke, but not of Lam.

Downy-branched Canthium. Shrub 5 to 6 feet.

*** Spinose shrubs, with pentandrous flowers.

12. C. Mundita n'um (Cham. et Schlecht. in Linden. 4. p. 131.) a small erect shrub; with opposite spinescent branches; leaves ovate-oblong, of the same colour on both surfaces, membranous; pedoie domed inside; cymes axillary, pedunculate. \( \varphi \). G. Native of the Cape of Good Hope, at Plitenberg's Bay. Habit of Electromia ventosa, but the cymes are on longer peduncles; the flowers are smaller, and the stipules are glabrous inside, not leaving a margin of white wool on falling, as in that plant.

Var. \( \beta \), pubescens (D. C. prod. 4. p. 474.) leaves downy on both surfaces. \( \varphi \). G. Growing along with the species. Mundt's Canthium. Shrub 4 to 5 feet.

13. C. nördicum (Blum. bijdr. p. 966.) shrub; erect; spines spreading, straight; leaves small, almost sessile, ovate-oblong, acutish, downy on both surfaces, as well as the branches and stipulas; flowers twin or tern, axillary, on very short peduncles. \( \varphi \). S. Native of Java, among bushes about Buiten-zorg. Branches spreading, opposite.

Horrid Canthium. Shrub 5 to 6 feet.

14. C. Parviflorum (Roxb. fl. ind. 2. p. 170.) shrub thorny and hairy; leaves oval, hairy beneath; flowers axillary, crowded; tube of corolla gibbose. \( \varphi \). S. Native of the East Indies. The inside of the tube of the corolla is surrounded by a circle of straight white bristles of its own length, inserted round its mouth, and pointing to its bottom. The figure in Pluk. alm. 27. t. 133. f. 3. so often referred to, has nothing to do with it; consequently it is neither Manetia diancatha, Willd. spec. 1. p. 670, nor Azima diancatha, Lam. dict. 1. p. 343.

Small-leaved Canthium. Shrub 5 to 6 feet. 15. C. Augustiflorum (Roxb. fl. ind. 2. p. 169.) shrub thorny; leaves lanceolate, glabrous, and shining, on short petioles; flowers numerous, axillary, on short pedicels; berries roundish, retuse. \( \varphi \). S. Native of the East Indies, on hills, in the vicinity of Chittagong, Silhet, and the whole eastern frontier of Bengal. Branches glabrous. Flowers small, greenish-yellow. Corolla with a short gibbous tube, and 5 lanceolate segments. Drupes roundish, when ripe yellow.

Narrow-leaved Canthium. Shrub.

16. C. Rheed' ei (D. C. prod. 4. p. 474.) shrub thorny; leaves oval-lanceolate, acuminate, on very short petioles, shining; flowers numerous, axillary, on short pedicels; berries roundish-ovate, compressed. \( \varphi \). S. Native of Malabar, where the Brachmans called it Canti, hence the generic name. Tsjeron-kara, Rheed. mal. 5. p. 75. t. 37. Root reddish, bitter. Flowers small, greenish. Berries green. It differs from C. parviflorum in the flowers being 5-leafed and pentandrous.

Rheed's Canthium. Shrub.

17. C. Pedunculare (Cav. icon. 5. p. 21. t. 436.) shrub thorny; leaves ovate, acute, almost sessile, downy; pedicels 4 c 2
axillary, solitary, longer than the leaves. \( \eta \). S. Native of the Island of Luzon, one of the Philippines. Teeth of calyx subulate. Corolla pale purple, with a woolly throat, and 5 lanceolate, very acute segments. Filaments shorter than the corolla. Berry ovate, sub-compressed. This shrub is perhaps generically distinct from Canthium.

**Peduncular Canthium.** Shrub 5 to 10 feet.

18 C. lycocomes (A. Rich. dis. p. 108.) spines supra-axillary, simple; leaves small, oblong-ovate, acuminate, rather hairy; stipulas broad, ending in a long abrupt point at the apex; flowers axillary, pedunculate, solitary. \( \eta \). S. Native of Magnolia. Habit of a species of Lycium. The rest unknown.

**Lycium-like Canthium.** Shrub.

19 C. Chinesse (Pers. ench. 1. p. 200.) shrub thorny; leaves ovate; flowers sessile, hairy. \( \eta \). G. Native of China, at Macao; and of Madras. Gardénia spinosa, Thunb. diss. gard. no. 7. t. 2. f. 4. exclusive of the synonyms. Wildl. spec. 1. p. 1299. Rândia spinosa, Poir. dict. 2. p. 829. Leaves many from the buds under the spines, glabrous. Corolla white, a little longer than the calyx, with ovate, obtuse, spreading segments. Stigma clavate. This plant does not probably belong to Canthium.

**China Canthium.** Fl. Ju. Aug. Clt. 1800. Sh. 5 to 8 ft.

20 C. sceândens (Blum. bijdr. p. 966.) climbing; spines divaricate or recurved; leaves on short petioles, oblong, acuminate, downy beneath as well as on the branches; flowers disposed in axillary fascicles; fruit didymous. \( \eta \). G. Native of the Island of Nusa-Kambanga, near Java, among bushes. Thorns much shorter than the leaves, straight, or a little recurved, but sometimes wanting on the branchlets. Fruit rather rugged, like that of *Psydrax*.

**Climbing Canthium.** Shrub el.

**Sect. II. Pleurogaaster (from πλευρός, pleuron, a side, and γαστρα, gaster, a belly; the cicatrices occasioned by the falling of the flower is left on one side of the fruit).** D. C. diss. ined. acad. sc. par. 1806. prod. 4. p. 475. Mature fruit 1-celled, furnished with the floral cicatrice on one side at the base.

21 C. anomocærum (D. C. prod. 4. p. 475.) glabrous; branches divaricate, and probably at length becoming spinose; leaf ovate, acuminate, on short petioles; pedicels slender, elongated, 1-flowered, corymbose, usually deflexed, rising from the axils of the superior leaves. \( \eta \). S. Native of Sierra Leone, where it was collected by Smeathmann; and of the Gambia, at Albreda. This plant comes near to *Plectronia venosa*, from the singularity of the fruit.

**Anomalous-fruited Canthium.** Shrub.

**Cult.** For culture and propagation see Chioc Scotia, p. 569.

**CXLIII. Plectroonia** (from πλεκτρον, plektron, a whip; in reference to the square branches). Lin. mant. p. 6. no. 1249. Lam. ill. t. 146. A. Rich. mem. soc. hist. nat. par. 5. p. 189. but not of Burm. or Lour.—Rhâmus species, Burm.

**Lin. syst. Tetrandria, Monogynia.** Calyx with an ovate or oblong tube, and a 5-toothed limb. Teeth very short, acute. Corolla short, rather funnel-shaped, with a 5-parted limb, and a bearded throat; segments acute, reflexed. Stamens 5, inserted in the throat, a little exserted. Style short; stigma sub-capitate, of 2 approximate lamellae. Berry dry, naked at the apex, emarginate, obovate-oblong, compressed, didymous, containing 2 chartaceous coriaceous, 1-seeded, induscent pyrene, which are flat inside.—Small African trees, with opposite, sub-spinose branches. Leaves opposite, petiolate, elliptic, acute at both ends, rather coriaceous, pale beneath. Stipulas solitary on each side, apiculate. Peduncles axillary, short, solitary, racemose, or corymbose; pedicels about equal in length to the fruit, slender.—This genus, along with Damnacanthus, *Psydrax*, and Canthium ought probably to be united.


**Windy Plectronia.** Clt. 1816. Tree.

2 P. Madagascarensis (A. Rich. in mem. soc. hist. nat. Par. 5. p. 189.) branchlets glabrous, compressed; pedicels axillary, 1-flowered. \( \eta \). S. Native of Madagascar, where it was collected by M. Chapelier. The whole shrub is glabrous. Leaves ovate, attenuated at the base, petiolate. Stipulas short, acuminate, deciduous. Flowers unknown. Fruit ovate, emarginate at the apex, and probably obcordate and compressed, usually 1-celled by abortion.

**Madagascar Plectronia.** Shrub or tree.

3 P. Hieratia (D. C. prod. 4. p. 476.) branchlets villous; leaves villous beneath; stipulas length of petioles. \( \eta \). S. Native of Senegal, by the sides of woods near Dagana, where it was collected by Leprieur and Perrottet. Câñthium Senegalense, A. Rich. l. c. p. 188. Branches terete, divaricate, spreading, forming straight angles. Peduncles axillary, villous, compressed, corymbose at the apex. Berry 2-celled, emarginate at the apex; but one of the cells is usually abortive, in this case the fruit becomes 1-celled, and the umbilicus lateral, which is indicated by the permanent 5-toothed calyx.

**Hairy Plectronia.** Shrub 4 to 6 feet.

**Cult.** See Chioc Scotia, p. 569, for culture and propagation.


**Lin. syst. Pentándria, Monogynia.** Calyx with an ovate tube, and a 5-toothed deciduous limb. Corolla with a short tube, a hairy throat, and 5 oval acute reflexed lobes. Stamens inclosed, inserted at the throat. Style much exserted; stigmata bilamellate. Berries fleshy, areolate at the apex, ovate, compressed, wrinkled from tubercles, marked by a furrow on both sides, 2-celled, containing usually 2, rarely 3 pyrenes; pyrenes oblong, scarious from wrinkles, 1-seeded, marked by a linear furrow, and an umbilicus in the middle. Seeds bony, filling the pyrene. Albumen amygdalaceous, scrobilicate. Embryo inverted, filiform, curved into the form of a Greek sigma, with linear cotyledons.—Shrubs, with opposite ovate leaves, and axillary racemes of small flowers. This genus, from the hard fruit being often 5-celled, and from the form of the embryo, almo t agrees with the tribe Gustárdaceae.

1 P. mocoëcos (Guett. fruct. 1. p. 125. t. 26. f. 2.) leaves elliptic, long-acuminate, gradually tapering into the short petioles at the base; stipulas lanceolate, acute, permanent; cymes pedunculate, branched; fruit rather heart-shaped. \( \eta \). S. Native of Ceylon.

**Two-seeded Psydrax.** Shrub.

2 P. Major (A. Rich. l. c. p. 191.) leaves elliptic, on short petioles, short-acuminate; stipulas semi-oval, bluntish; cymes pedunculate, simple; fruit heart-shaped. \( \eta \). S. Native of Madagascar. Very like the preceding species, but differs in the broader leaves with shorter points, caducous stipulas, simple cymes, and larger fruit.

**Larger Psydrax.** Shrub.
3 P. medica (A. Rich. l. c.) leaves oval, very blunt, gradually attenuated at the base; stipules ending in long points, caducous; cymes hardly pedunculate, simple, few-flowered; fruit deeply emarginate, didymous. \( h \). S. Native of Madagascar.

Intermediate Psydax. Shrub.

4 P. angustifolia (A. Rich. l. c.) leaves linear, acutish at the apex, gradually attenuated at the base; stipulas lanceolate, caducous; cymes hardly pedunculate, 3-5-flowered; fruit small, heart-shaped, didymous. \( h \). S. Native of Madagascar.

Narrow-leaved Psydax. Shrub.

Cult. For culture and propagation see Chiocécea, p. 569.


Lin. syst. Pentandria, Monogyenia. Calyx with an ovate tube, and a short acutely 5-parted limb. Corolla with a short tube, a glabrous throat, and 5 oblong spreading bluntish lobes, which are longer than the tube. Anthers 5, ovate, sessile at the throat of the corolla. Style filiform, length of tube; stigmas 4-6. Berry ovate, fleshy, 2-celled, crowned by the calyx. Seed or pyrene solitary in the cells, erect, convex on the outside, but flat and furrowed inside.—A glabrous shrub, with spinose branches. Leaves on short petioles, opposite, lanceolate, small, attenuated at both ends. Stipulas small, solitary on both sides, adhering to the petioles. Pedicels axillary, solitary, 1-flowered, deflexed, calyculate by 4 small combined bracteae under the flower. Flowers small. This genus differs from Cánthumus in the stigma being divided into many lobes, and in the seeds rising from the bottom of the cells, not from the top.

1 M. Billardieri (A. Rich. l. c.) \( h \). G. Native of Van Diemen's Land. Cánthumus quadrifidum, Labill. nov. holl. 1. p. 69. t. 94. A very spinose shrub, very variable in habit, having the branches sometimes loose and elongated, and sometimes short and crowded. Pedicels rising each from a sheath.

La Billardier's Marquisia. Shrub 5 to 6 feet.

Cult. For culture and propagation see Chiocécea, p. 569.

CXLVI. NESCIDIA (from nevico, to be ignorant; the fruit being unknown the genus is very doubtful). A. Rich. Mem. soc. hist. nat. Par. 5. p. 192. D. C. prod. 4. p. 477.

Lin. syst. Pentandria, Monogyenia. Limb of calyx hardly any, quite entire. Corolla with a short tube, a naked throat, and a 5-cleft limb; segments incumbent, bluntish. Stamens 5, inserted in the throat, almost sessile, inclosed. Anthers linear, acute. Style short; stigmas 2, linear, acute, joined face to face. Ovarium 2-celled; ovula solitary in the cells, fixed to the middle dissepiment. Seeds unknown.—A glabrous shrub, native of the Mauritius. Leaves opposite, petiolate, like those of a myrtle, coriaceous, scarcely acute. Stipulas short, interpetiolar. Flowers axillary, solitary, girded by a bidentate calycalous at the base.—This is a doubtful genus from the fruit being unknown, but it has the habit of Myrtinia.

1 M. Myrtifolia (A. Rich. l. c.) \( h \). S. Native of the Mauritius.

Myrtle-leaved Nesvidia. Shrub 5 to 6 feet.

Cult. See Chiocécea, p. 569. For culture and propagation.

CXLVII. DIPOLESPORA (from diplos, diploë, double, and spora, spora, a seed; in reference to the cells of the fruit being 2-seeded). D. C. prod. 4. p. 477.—Cánthumus species, Lindl.

Lin. syst. Tetrandria, Monogyenia. Calyx with an obovate tube, a very short subcampanulate 4-toothed limb. Corolla with a wide tube, which is shorter than the lobes, a pilose throat, and 4 obovate fleshy spreading lobes. Anthers 4, sessile at the throat, semi-exserted. Style length of the tube; stigma bifid. Ovarium 2-celled; cells 2-seeded; ovula collateral, ascending. Fruit and seeds unknown.—A glabrous shrub, native of China, with tetragonal branches. Leaves opposite, petiolate, oblong-lanceolate, acuminate at both ends. Stipulas solitary on both sides, ovate, acuminate, permanent. Flowers axillary, crowded, almost sessile, yellowish-green, calyculate by combined bracteae at the base. This genus agrees with Epithinia in the cells of the ovarium being biovolate, but differs in the ovula being collateral, not one on the top of the other.


Cult. See Chiocécea, p. 569. for culture and propagation.

CXLVIII. EPITHI'NIA (from eri, epi, upon, and thn, thin, the seashore; the shrub grows among mangroves on the seashore). Jack, in mal. misc. 1. no. 2. p. 12. D. C. prod. 4. p. 477.

Lin. syst. Tetrandria, Monogyenia. Limb of calyx cylindric, scarcely 4-toothed, permanent. Corolla tubular, with a 4-parted spreading acute limb, and a villous throat. Stamens 4, exserted; anthers linear. Style exserted; stigma bifid. Berry 8-furrowed, containing 2 oblong 2-seeded pyrene. Seeds placed one above another.—An Indian shrub. Leaves opposite, petiolate, obovate, smooth, almost veinless. Stipulas wanting? Peduncles axillary, dichotomous, many flowered, with a solitary flower in the fork. Flowers white.—This genus is said to be allied to Malânca, but differs in the cells of the fruit being 2-seeded, and from all other Rubieaeae plants in the want of stipulas.

1 E. Malaya'na (Jack, l. c.) \( h \). S. Native of the islands of Malacca, Singapore, in marshes among mangroves.

Malaya Epithinia. Shrub.

Cult. For culture and propagation see Chiocécea, p. 569.


Lin. syst. Tetrandria, Monogyenia. Calyx with a subglobose tetragonal tube, and a very small 4-toothed limb. Corolla with a long terete tube, which is hardly widened at the apex, a glabrous throat, and 4 oval roundish bluntish spreading lobes. Anthers 4, sessile in the throat of the corolla, oblong, hardly exserted, one-half shorter than the lobes of the corolla. Style bifid at the apex, length of the corolla. Berry dry, nearly globose, naked at the apex, 2-celled, 2-seeded. Seeds convex on the outside, concave inside, and furnished with a circular areola as in Bacconia. Albusman cartilaginosus. Embryo unknown.—Glabrous hard-wooded trees, natives of South America. Branches terete, but tetragonal when young, as well as the pedicels. Leaves opposite, oval-oblong, acute, rather coriaceous, petiolate. Stipulas solitary on both sides, apiculated by a short point. Peduncles axillary, trifid or trichotomous. Flowers rose coloured on the outside, and white inside. This genus is nearly allied to Coffea.

1 S. triplure (Vahl, eel. 1. p. 10.) peduncle twin, axillary, 3-flowered. \( h \). S. Native of the islands of Montserrat and Martinico, where it is called bois de fer or iron-wood. S. férreum, Lam. ill. p. 282. Sideroxyloides férreum, Jacq. amer.
p. 10. t. 173. f. 9.—Pluk. aln. t. 224. f. 2. Petioles short, and the leaves are acute at the base, ex Vahl.


2 S. multiflorum (A. Rich. 1. c.) peduncles axillary, tripartite, having the lateral branches trifid, and the middle one twice trifid.  ½. S. Native of French Guiana. Petioles 2-3 lines long. Peduncles 3 or 4 lines longer than the petioles. Leaves acuminate at the apex, but hardly acute at the base.

Var. β. angustifolium (D. C. prod. 4. p. 478.) leaves oblong, acuminate.  ½. S. Native along with the species.

Many-flowered Ironwood-tree. Tree.

† A doubtful species.

3 S. paniculatum (Willd. herb. no. 2811. ex Cham. et Schlecht. in Linnaea. 4. p. 26.) panicles axillary, pedunculate, hairy, with subichotomous branches; leaves ovate-cordate, acutely mucronate, nearly sessile.  ½. S. Native of South America, on the banks of the river Atabapo, near San-Balthazar. Psychotria cordifolia, H. B. et Kuntz, nov. gen. amer. 3. p. 365, but not of Dietr. The fruit is unknown, but the tree agrees better with Sideroxylon than with Psychotria in the tetradrous flowers and axillary panicles. Flowers blue, glabrous, with a villous throat.

Panicled-flowered Ironwood-tree. Shrub.

Cult. See Chicoëcca, p. 569. for culture and propagation.


1 E. caíreena (D. C. prod. 4. p. 479.)  ½. S. Native of the island of Namok, one of the Friendly Islands. Petesiæ cármen, Forst. 2. no. 51.

Peach-coloured-flowered Eumachia. Tree.

Cult. For culture and propagation see Chicoëcca, p. 569.


Lin. Syst. Tetrandria, Monogyânia. Calyx with an obovate tube, and a 4-parted limb (f. 105. b.). Corolla funnel-shaped (f. 105. g.), with a terete tube (f. 105. f.), a bearded throat, and 4 spreadingly reflexed lobes. Stamens 4, inserted in the throat; filaments filiform; anthers linear, fixed by the middle, exserted (f. 105. c.); stigma bifid (f. 105. c.). Berry nearly dry, 2-celled, subdidymous, compressed (f. 105. h.), crowned by the permanent calyx (f. 105. b.), containing 2 chartaceous coarceous 1-seeded pyreneae. Albumen horny. Embryo unknown.—Shrubs, rarely herbs, natives of America. Stems erect, tetragonal when young. Leaves opposite or in whorles, nearly sessile. Stipulas small, interpetiolar. Coryms terminal, tripartite, bracteate, with dichotomous branches. Flowers white, lateral and sessile, or terminal and pedunculate, bibracteate.

1 D. chiococoides (H. B. et Kuntz, nov. gen. amer. 3. p. 355. t. 281.) shrubby, glabrous; leaves opposite, sessile, oblong-lanceolate, acute, cuneate at the base, with rather revolute edges; coryms sessile, tripartite; stamens about equal in length to the lobes of the corolla.  ½. S. Native of New Andalusia, on the banks of the Oriñoco, near the monastery of Caripé; and of Rio Janeiro, ex Cham. et Schlecht. in Linnaea. 4. p. 4. Rœm. et Schultes, mant. 3. p. 112. Houstinia fruticosa, Wild. mass. in Rœm. et Schultes, syst. 3. p. 597. Shrub 4 feet high. Flowers white. (f. 105.)

Chiococoides-like Declieuxia. Shrub 4 feet.

2 D. mexicana (D. C. prod. 4. p. 479.) suffrutescent, glabrous; leaves opposite or 3 in a whorl, sessile, oblong-lanceolate, obtuse at the base, acute at the apex; coryms pedunculate, 4-5-parted; stamens about equal in length to the lobes of the corolla.  ½. S. Native of Mexico. D. chiococoides, Bartl. in herb. Hænke. Flowers white. Mexican Declieuxia. Shrub ½ foot.

3 D. thymoides (Mart. et Zucc. in Rœm. et Schultes, mant. 3. p. 111.) shrub much branched; leaves disposed in verticillate fascicules, sessile, linear, acute, attenuated at both ends, and are, as well as the branches, roughish; flowers solitary or few together on the tops of the branches.  ½. S. Native of Brazil.

Thymoides-like Declieuxia. Shrub.

4 D. natureoides (Mart. et Zucc. in Rœm. et Schultes, mant. 3. p. 111.) shrub much branched; leaves linear-lanceolate, attenuated at the base, sessile, opposite or 6 in a whorl, and are, as well as the branches, scabrous from hairs; flowers axillary, solitary.  ½. S. Native of Brazil. The rest unknown.

Savory-like Declieuxia. Shrub.

5 D. galloides (Pohl, in litt. under the name of Psyllocarpus,) plant subherbaceous, glabrous; branches terete; leaves 3 in a whorl, linear; whorles distant; panicles terminal, having the branches disposed 3 in a whorl, cymose.  ½. S. Native of Brazil, where it was collected by Pohl.

Galium-like Declieuxia. Shrub 1 foot.

6 D. spargoulfoïdæ (Mart. et Zucc. 1. c.) shrubby, glabrous; leaves linear-subsutulate, opposite, sessile; racemes dichotomous; terminal.  ½. S. Native of the south of Brazil. Cham. et Schlecht. in Linnaea. 4. p. 6. Panicles terminal, dichotomously compound from cymes: having the branches capillary, elongated, and erect, with alternate flowers. Flowers twin, one of each pair sessile. Stamens inclosed. Cham. et Schlecht.

Spurry-leaved Declieuxia. Shrub.

7 D. marioides (Mart. et Zucc. 1. c.) shrubby; stem and branches clothed with soft down; leaves 4 in a whorl, rarely 4, ovate-lanceolate, almost sessile, glabrous, with revolute edges; flowers axillary, almost terminal.  ½. S. Native of Brazil.

Cat-thyme-like Declieuxia. Shrub.

8 D. genanthoides (Mart. et Zucc. 1. c.) plant herbaceous, glabrous; stem nearly simple; leaves 4 in a whorl, rarely 4, ovate-lanceolate, almost sessile, glabrous, with revolute edges; flowers axillary, almost terminal.  ½. S. Native of Brazil. Panicle, ex Cham. et Schlecht. in Linnaea. 4. p. 5. terminal, from whorles.
of branches, usually twin, and forming a terminal umbel, with a
central flower. _Flowers sessile._

_Cenanthe-like Declieuxia._ Shrub.

9 **D. foliosa** (Pohl, in litt. under the _Psilocarpus_) shrubby, scarous in every part; branches tetragonal; leaves opposite, linear-oblong, acuminate at both ends, revolute at the margins while young; cymes terminal, few-flowered.  S. Native of Brazil, where it was collected by Pohl. In the axils of the leaves there are two young leaves, and therefore at first sight appear 6 in a whorl.

**Leafy Declieuxia.** Shrub.

10 **D. cordigera** (Mart. et Zucc. i. c.) suffrutescent, nearly simple, clothed with roughish pubescence; leaves opposite, decussate, approximate, sessile, ovate-cordate, acute, concave on the back; racemes bident, terminal, crowded into a dense panicle.  S. Native of Brazil within the tropic. _Cam. et Schlecht._ in _Linnaea._ 4. p. 7. Psilocarpus coriifolius, Pohl, in litt. Leaves rarely 3 in a whorl. Panicle terminal, erect, many flowered, nearly globose, with angular flexuous branches, dichotomous, hence bearing sessile flowers.

_Hart-bearing Declieuxia._ Shrub.

11 **D. glauca** (Mart. et Schlecht. in _Linnaea._ 4. p. 8.) shrubby, glabrous, pruinose glaucenceous; leaves opposite, sessile, ovate, very acute, erectly adpressed, coriaceous; panicle terminal, erect, nearly globose, dense.  S. Native of Brazil within the tropic. Very nearly allied to the preceding species.

_Glaucous Declieuxia._ Shrub.

12 **D. Passerina** (Mart. et Zucc. in _Roem. et Schultes._ mant. 3. p. 112.) shrubby, glabrous; leaves opposite, decussate, sessile, adpressed, imbricating in 4 rows, ovate, acute, 3-5-nerved beneath; flowers axillary, sessile, covered each by a leaf.  S. Native of Brazil.

_Passerina-like Declieuxia._ Shrub.

13 **D. raphiolepis** (Mart. et Zucc. i. c.) shrubby; branches twiggy; leaves opposite, decussate, somewhat imbricating in 4 rows, sessile, ovate-cordate, acute, rather concave above, scarous from hairs beneath, 7-9-nerved; peduncles axillary, few-flowered.  S. Native of Brazil. The rest unknown.

_Daphne-like Declieuxia._ Shrub.

14 **D. imbricata** (Pohl, in litt. under the name of _Psilocarpus_) shrubby, glabrous; branches terete; leaves opposite, sessile, deciduous, erect, ovate, hardly subcordate, cuspidate, stilt, having 4 small ribs on each side of the midrib; peduncles axillary, few-flowered.  S. Native of Brazil.

_Imbri-leafed Declieuxia._ Shrub.

15 **D. rheoxeoides** (Mart. et Zucc. i. c.) shrubby, glabrous; young branches subumbellate, twiggy; leaves opposite, deciduous, erect, ovate, hardly subcordate, cuspidate, stilt, having 4 small ribs on each side of the midrib; peduncles axillary, few-flowered.  S. Native of Brazil.

_Rheoxe-like Declieuxia._ Shrub.

16 **D. origanoides** (Zucc. i. c.) shrubby, clothed with roughish hairs; branches dichotomous, terete; leaves opposite, rather remote, on short petioles, nearly orbicular, acute, many nerved; flowers terminal, thysroid.  S. Native of Brazil. Leaves like those of _Origaniurn Dictamnus._

_Origaniurn-like Declieuxia._ Shrub.

17 **D. molle** (Zucc. i. c.) shrubby; leaves opposite, ovate-lanceolate, somewhat rhomboid, acute, tapering into the short petioles at the base, with ribbed veins, clothed with villi; flowers terminal, disposed in dichotomous panicles.  S. Native of Brazil.

_Soft Declieuxia._ Shrub.

18 **D. lysimachioides** (Zucc. i. c.) plant herbaceous or suffrutescent, downy; branches simple, erect; leaves 3 in a whorl, ovate, attenuated at both ends, acute; flowers terminal, dichotomously panicked.  S. Native of Brazil.

_Lysimachia-like Declieuxia._ Shrub.

19 **D. rubigoides** (Zucc. i. c.) shrubby, glabrous; leaves opposite, decussate, ovate, acute, rounded and cordate at the base, shining above; flowers terminal, disposed in dichotomous panicles.  S. Native of Brazil.

_Rubia-like Declieuxia._ Shrub.

20 **D. a'la** (Zucc. i. c.) shrubby, scarous; leaves opposite, decussate, ovate, acute, sessile, rounded at the base; racemes terminal, bident, disposed in dichotomous cymes.  S. Native of Brazil.

_White Declieuxia._ Shrub.

21 **D. divergentiflora** (Pohl, in litt. under _Psilocarpus_) suffrutescent; branches terete, clothed with velvety hairs; leaves opposite, sessile, ovate, acute or acuminate; cymes terminal, of many rays, subtangulate.  S. Native of Brazil, where it was collected by Pohl.

_Diverging-flowered Declieuxia._ Shrub.

22 **D. pulverulenta** (Mart. et Schlecht. in _Linnaea._ 4. p. 9.) suffrutescent, clothed with short dense hairs in every part except the corollas; leaves usually 3 in a whorl, rarely opposite, sessile, ovate, acute or acuminate; cymes terminal, of many rays, subdichotomous.  S. Native of Brazil.

_Powdery Declieuxia._ Shrub.

23 **D. polygaloides** (Zucc. in _Schultes._ mant. 3. p. 113.) suffrutescent; branches twiggy, erect; leaves 3 or 4 in a whorl, sessile, lanceolate, acute, erect, smooth; flowers terminal, panicked.  S. Native of Brazil. The rest unknown.

_Polygala-like Declieuxia._ Shrub.

24 **D. vincoideas** (Mart. et Zucc. i. c.) shrubby, glabrous; leaves opposite or 3 in a whorl, ovate, attenuated at both ends, acute, sessile, shining; flowers terminal, disposed in dichotomous panicles.  S. Native of Brazil.

_Vinca-like Declieuxia._ Shrub.

25 **D. fruticosa** (Pohl, in litt. under _Psilocarpus_. D. C. pro. 4. p. 481.) suffrutescent, glabrous, glaucous; branches terete; leaves opposite, sessile, orbicularly ovate, mucronate; cymes terminal, trichotomous, on short peduncles, fastigiate.  S. Native of Brazil.

_Frosted Declieuxia._ Shrub.

26 **D. mucronulat'a** (Mart. Cham. et Schlecht. in _Linnaea._ 4. p. 10.) suffrutescent, quite glabrous; leaves opposite, sessile, elliptic or obovate, cuneate at the base, mucronate at the apex; the mucron usually reflected; cymes terminal, on short peduncles, somewhat fastigiate.  S. Native of Brazil within the tropic. Stem and branches terete, furnished with 2 slight wings. _Psilocarpus trichotomus_. Pohl, in litt. may be referable to this, but the mucrones of the leaves are not reflexed in the specimens of that plant collected by Pohl.

_Mucronate-leaved Declieuxia._ Shrub.

27 **D. glabra** (D. C. pro. 4. p. 481.) plant suffrutescent, glabrous; stem somewhat tetragonal; leaves opposite, petiolate, elliptic-oblong, acuminate at both ends, but not mucronate; cymes terminal, of many rays, subumbellate.  S. Native of Brazil, Pohl; about Caracas, Vargas. _Psilocarpus glaber_. Pohl. In litt. Very like the preceding.

_Glabrous Declieuxia._ Shrub.

28 **D. ? psychotrioides** (D. C. pro. 4. p. 481.) suffrutescent, glabrous; leaves opposite, on short petioles, elliptic, long-acuminated, acute at the base; cymes terminal, on short peduncles, trichotomous, one-half shorter than the leaves.  S. Native of Cayenne, where it was collected by Patris; and of Panama and Mexico, according to Hanke. herb. _Coffea didyma._
mocárpa, Bartl. in herb. Hænke. Flowers unknown. Stipulas twin on both sides, subulate.

**Psychotria-like Declœiuxia.** Shrub.

29. *D. herbaacea* (Cham. et Schlecht. in Linneæa. 4. p. 11.) plant herbaceous, glabrous; branches straight, glabrous, terete, a little winged; leaves opposite, petiolate, ovate-lanceolate, attenuated, acute; cymes axillary, on long peduncles, of 5 spreading rays. 2. S. Native of Brazil, about Rio Janeiro. Knœxia Brasilensis. Spreng. syst. 1. p. 406. Habit of *Borrêira lúeza*. Corolla a line long. Fruit nearly dry. This plant ought probably to be excluded from the present genus, according to Martius in Linneæa. 1. c.

**Herbaceous Declœiuxia.** Shrub.

*Cult.* For culture and propagation see *Chiocœca*, p. 569.

### CLII. TERTREA (named after J. B. du Tertre, a traveller in the French West Indian Islands), and who has written a general history of them). D. C. prod. 4. p. 481.—Schiedea, A. Rich. mem. soc. hist. nat. Par. 5. pt. 1. p. 186. (1830) but not of Schlecht. in 1826.

**Lin. syst. Pentändria, Monogyinia.** Limb of calyx 4-parted: lobes erect, oval, obtuse, ciliated. Corolla short, funnel-shaped, 4-cleft; lobes short, obtuse, rather spreading; throat beset with hairs. Stamens inserted, exerted in the upper part of the tube. Style shorter than the corolla. Stigma 2, short, obtuse. Drupe oblong, compressed, crowned by the calyx, with 2 opposite furrows, containing 2 cartaceous 1-seeded pyrenae. Seed oblong, compressed, pendulous.—A shrub, native of Martinico, having the branches usually spinose at the apex. Leaves opposite, oval, acute, on short pedioles, membranous, glabrous. Stipulas interpetiolar, acuminate. Flowers small, disposed in a terminal oppositely branched raceme.


**Martineo Tertrea.** Shrub 1 to 2 feet.

*Cult.* For culture and propagation see *Chiocœca*, p. 569.


**Lin. syst. Pentändria, Monogyinia.** Calyx with an ovate tube, and an acutely 5-toothed permanent limb. Corolla funnel-shaped, with an obconical tube or throat, and 5 acute lobes. Stamens with the filaments hardly adnate to the bottom of the corolla, downy, and shorter than the anthers, which are incised and linear. Style rather clavate at the apex, entire or slightly 2-lobed. Berry somewhat didymous, compressed, crowned by the teeth of the calyx, containing 2 cartaceous 1-seeded pyrenae. Seeds pendulous. Embryo with a long superior radicle. Albumen cartilaginous.—Shrubs generally with a somewhat climbing habit. Leaves opposite, ovate or oblong, acute, glabrous. Stipulas broad at the base, permanent, more or less apiculate. Racemæ axillary, opposite, simple or panicked. Flowers pedicellate, of a yellowish white colour. Roots emetic and alexiteric.

1. C. racemosa (Jacq. amer. p. 68. Lin. spec. 246.) leaves oval, acuminate at both ends, smooth; stipulas broad at the base, and apiculate by a long point at the apex; racemes many flowered; corolla much longer than the teeth of the calyx; filaments of stamens downy. ? S. Native of the West India islands, Mexico, and Carthagea, on hills. Swartz, obs. p. 76. Andr. bot. rep. t. 284. Tratt. tab. t. 631. Hook. fl. exot. t. 93.—Sloane, hist. t. 188. f. 3.—Dill. lort. elth. t. 228. f. 295. and therefore the Loniceræ albæ, Lin. spec. ed. 1. p. 175. A very variable shrub. Corollæ at first white and scentless, but at length becoming yellowish and sweet-scented. leaves shining on the upper surface. Berries snow white, hence the English name snow-berry, and the Greek one *chiocoecca*. The stamens are glabrous in the figure given by Hooker, and the stigma is trifid in that given by Andrews, variations which have never been seen in nature. The root has much the same acid bitter taste as snake-root, and has been long used as a strong resolutive or astringent, and is administered with great success in obstinate rheumatisms, and old syphilitic taints. It is best given in decoction; it is also an excellent emetic, and may be used as ippecauana.

Var. β, scándens (Pers. ench. 1. p. 209.) branches very slender, and evidently climbing; leaves oblong; racemes shorter than the leaves, simple. ? S. Native of Jamaica, and the island of Santa Cruz.—Browne, jam. p. 164. n. 2. Swartz, obs. 76. var. β.

Var. γ, laziflora (D. C. prod. 4. p. 482.) climbing; leaves oblong; racemes panicked, longer than the leaves. ? S. H. Cultivated in the botanic garden at Calcutta.

Var. ϵ, longiflora (D. C. prod. 4. p. 482.) leaves longer, oblong-acuminated; racemes simple, equal in length to the leaves. ? S. Native of Guadaloupe, where it was collected by Badier.

2. C. vending (Mart. spec. med. bras. p. 17. t. 6) leaves ovate, rather coriaceous; stipulas broad at the base, apiculate by a longish point; racemes many flowered; corolla much longer than the teeth of the calyx; filaments densely bearded. ? S. Native of Brazil, in woods at Almadas and Ferradas, on the mountains of Bahia; and at the Port of St. Catharine, ex Cham. et Schlecht. in Linneæa. 4. p. 13. Racemes simple. Flowers white, sweet-scented. This species grows plentiful about Bahia, where we have seen it either with loose or crowded branches and leaves.

Var. β, Cubénia (D. C. prod. 4. p. 482.) leaves ovate, subcordate; racemes rather compound; filaments bearded. ? S. Native of Cuba.

**Dense-flowered Snow-berry.** Shrub 3 to 4 feet.

3. C. angiófuga (Mart. spec. med. bras. p. 17. t. 5) leaves ovate, acuminate; stipulas very broad, short, each ending in a short point; racemes panicked; corolla hardly 3 times longer than the calyxine teeth. ? S. Native of Brazil, in woods, French Guiana, Trinidad, Peru, Cuba, and about Cumaná, on the Spanish Main. Cham. et Schlecht. in Linneæa. 4. p. 13. C. brachiiôta, Ruiz et Pav. fl. per. 2. p. 67. t. 219. f. and C. racemosa, H. B. et K. nov. gen. amer. 3. p. 252. Sieb. fl. trin. excis. no. 58. C. parviflora and C. paniculata, Willd. in Rém. et Schultes, syst. 5. p. 205. Pedicels and branches glabrous. Flowers white. Root diuretic, and is called by the Brazilians Caiiçar.


4. C. odora-ta (Hook. et Arn. in Bech. voy. pt. bot. p. 65) leaves broad-oval, rather coriaceous, very blunt, acute at the base, and running down the short pedioles; peduncles axillary, solitary, 3-4-flowered; corolla with a bearded throat. ? S.
Native of Elizabeth Island, one of the Society Islands. Coffea odorata, Forst. prod. 1. p. 94. The flowers are described as fragrant, and smelling like coals.

Sweet-scented Snow-berry. Shrub.

5 C. barbat'a (Forst. prod. 1. p. 96. Hook. et Arn. in Beech. voy. pt. bot. p. 65. t. 14.) erect; leaves oval, acute at the base, and tapering into the short petioles, acuminate and obtuse at the apex; peduncles axillary, solitary, 1-3-flowered; corolla with a bearded throat, 6-cleft. ɣ. S. Native of the Society and Friendly Islands. Flowers white. Drupe size of a filbert.

Bearded-flowered Snow-berry. Shrub.

6 C. Java'na (Blum. bijdr. p. 968.) shrub parasitical; leaves oblong-lanceolate, acuminated at both ends, glabrous, velvety and shining above; corymbs terminal, trichotomous. ɣ. S. Native of Java, in woods on the mountains upon trees. Coffea Javanica, Blum. cat. hort. bult. p. 46. Perhaps a species of Psychotria.

Java Snow-berry. Shrub parasitical.

 Cult. A mixture of loam, peat, and sand is the best soil for the species of Chioceca; and cuttings strike root freely in sand under a hand-glass in heat.

CLIV. MARGARIS (from ἀργαρόν, margaron, a pearl; the berries are white and shining in M. nudiflora, and are called peritías, or pearls, by the Mexicans). D. C. prod. 4. p. 483.— Deschía’a, Moc. et Sesse, fl. mex. icon. ined. ex D. C. l. c.

Lin. syst. Pentándria, Monogynía. Calyx with a globose tube, and a somewhat turbinate semi-5-cleft limb; teeth acutish, permanent. Corolla funnel-shaped, with an obconical tube, which is 5-toothed or 5 with 5 short lobes at the apex. Stamens 5, inserted in the middle of the tube; filaments a little shorter than the corolla; anthers ovate. Stigma capitate, undivided or slightly 2-lobed. Berry globose, crowned by the calyx, 2-celled, 2-seeded. Seeds semi-ovate, acute at one end.—Shrubs, with slender branches. Leaves opposite, ovate, glabrous, about the size of those of the common myrtle. Stipulas small, solitary on both sides. Pedicels axillary, opposite, short, 1-flowered. Flowers white, usually secund, bibracteolate under the calyx. Berries white.

1 M. bari-n'ea (D. C. prod. 4. p. 483.) leaves acute; corollas bearded inside. ɣ. S. Native of Mexico. Deschía’a leucocárpa, Moc. et Sesse, fl. mex. icon. ined. Berries size of a pea.

Beard-bearing Pearl-berry. Shrub.

2 M. nudiflóra (D. C. prod. 4. p. 483.) leaves mucronate; corolla glabrous inside. ɣ. S. Native of Mexico, about Ta-pelapa. Chioceca axillária, Moc. et Sesse, fl. mex. icon. ined. Deschía’a margaritária, Moc. et Sesse, fl. mex. icon. ined. Shrub 8 feet high. Berries ovate, globose, a little smaller than a pea, white and shining, hence they are called perítias by the Mexicans.

Naked-flowered Pearl-berry. Shrub 8 feet.

 Cult. See Chioceca above for culture and propagation.


Lin. syst. Tetrándria, Monogynía. Limb of calyx short, subcampanulate, obsoletely repand. Corolla with a short tube, a 4-parted limb, and a pilose throat; lobes oblong, acute, spreading. Stamens 4, inserted in the throat, hardly exerted; anthers oblong, almost sessile. Fruit small, egg-shaped, compressed, umbilicated by the limb of the calyx, drupaceous, usually 1-celled, and 1-seeded by abortion. Seed erect, oblong. Embryo nearly terete, slender. Albumen fleshy.—Shrub. Leaves opposite, elliptic, acuminate, coriaceous, glabrous on short petioles. Sti-
pulas subulate, acute. Flowers small, almost sessile, 4-5-together in the axis of the leaves.


False-Morinda Shrub.

 Cult. See Chioceca above for culture and propagation.


Lin. syst. Tetrándria, Monogynía. Calyx with a short ovate tube, and 4 linear-lanceolate acute lobes. Corolla tubular, somewhat tetragonal before expansion; the tube somewhat quadrangular at the apex; lobes 4, ovate, acute, revolute. Stamens having the filaments downy and adnate to the tube at the base; anthers linear, not exerted. Stigmas 2, obtuse, hardly longer than the tube. Drupe nearly globose, crowned by the calyx, containing a 2-celled 2-seeded nucleus, ex Rich., or very often 1-celled and 1-seeded by abortion.—West Indian shrubs, with the habit of Catesbaea or Justicia spinosa. Leaves small, almost sessile, oblong or obovate, coriaceous, opposite, usually disposed in fascicles in the axils. Stipulas small, interpetiolar. Peduncles 1-flowered, axillary, 1-4-together, and sometimes they are hardened into simple bifid or trifid spines, which are usually naked, rarely floriferous. Flowers small, purple or safron coloured.

1 S. vers'í-color (Vahl, ecol. amer. 1. p. 11. t. 10.) leaves obovate, shining above; spines simple, bipartite or twin. ɣ. S. Native of Santa Cruz and Porto Rico. Chomelia versicolor, Spreng. syst. 1. p. 110. Catesbaea parviflora, Lam. ill. t. 67. f. 2. Leaves 3 lines long. Spines commonly in pairs from each alternate axil, combined at the base, for the most part a little longer than the leaves, stiff, purplish, often bearing a flower at one of the points; they are the peduncles which have hardened, and keep growing on after the flowers have fallen. Flowers on short peduncles; those from the tops of the spines solitary, usually drooping, purple, and abortive; others are axillary, solitary, or more rarely 2-4-together, erect, saffron coloured, and fertile. Fruit snow white.

Party-coloured-flowered Scolosanthus. Shrub 3 to 4 feet.

2 S. triaca'nthus (D. C. prod. 4. p. 484.) leaves oblong, rather glaesuscent; spines for the most part trifid. ɣ. S. Native of St. Domingo, where it was collected by Bertero. Catesbea triacantha, Spreng. syst. 1. p. 416. Leaves 4-5 lines long. Flowers and fruit not sufficiently known, but the habit is that of Catesbaea.

Three-spined Scolosanthus. Shrub.

 Cult. See Isóra, p. 574. for culture and propagation.


Lin. syst. Tetrándria, Monogynía. Calyx with a turbinate tube, and a permanent limb, which is 4-toothed to the middle. Corolla oblong-shaped, with a long slender throat, a glabrous throat, and 4 spreading lobes, which are shorter than the tube. Anthers 4, sessile, or on short filaments, inserted at the throat of the corolla. Style bifid at the apex, situated among the anthers. Drupe ovate, crowned, containing a 2-celled (or 1-4 D
cell from abortion) nucleus; cells 1-seeded. Seeds pendulous in the cells, oblong.—American shrubs, usually spinous, glabrous or downy. Leaves opposite on short pedicles, stiff, coriaceous. Stipula short, interpetiolar. Peduncles axillary, or with few-flowered, short.—This genus differs from Isóra in habit and florescence, but more particularly in the fruit containing a hard nut; and from this it is more nearly allied to Scolostachys than to Isóra.

1 C. spinó'sa (Jacq. amer. 18. t. 13.) leaves ovate, acuminate, nearly sessile, glabrous; peduncles axillary, usually 3-flowered; lobes of calyx and corolla acute. h. & S. Native of Carthage, in woods; and of probably of St. Domingo. Isóra spinó'sa, Lam. dict. 3. p. 344. Flowers white, fragrant at night, 1½ inch long.

*Spiny* Chomelia. Clt. 1793. Shrub 8 to 12 feet.


Fascicled-flowered *Chomelia*. Clt. 1825. Shrub 5 feet.

3 C. obtus'a (Cham. et Schlecht. in Linnae. 4. p. 185.) leaves elliptic, acute at the base, glabrous, on short pedicels; peduncles axillary, 1-flowered; lobes of calyx and corolla obtuse. h. & S. Native of the south of Brazil. Flowers white.

Blunt-calymbed *Chomelia*. Shrub 4 to 5 feet.

4 C. pubescens (Cham. et Schlecht. in Linnae. 4. p. 187.) leaves ovate, acute, on short pedicels, pilose on the nerves above, and silky beneath; peduncles axillary, 1-flowered. h. & S. Native of Brazil within the tropic. Perhaps the same as C. Brasiliána, A. Rich. mem. soc. hist. nat. Par. 5. p. 183.

Downy *Chomelia*. Shrub.

Clt. See Isóra, p. 574. for culture and propagation.


Lin. syst. Tetrádrus, Monogónia. Calyx with a very short tube, adnate to the ovarium at the base, and a bluntly 4-cleft limb. Corolla funnel-shaped, with a short terete tube, a bearded throat, and 4 oblong acute lobes, which are longer than the tube, and twisted in resivation. Anthers 4, linear, almost sessile, erect, situated at the throat between the lobes, and a little shorter than them, at length twisted spirally. Style filiform, exserted, stigma undivided, or hardly 2-lobed. Disk thick, crowning the ovary. Berry dry, 2-celled, 2-seeded. Seeds semi-globose. Albumen cartilaginous. Embryo erect, nearly tertet.—A glabrous African shrub. Leaves opposite, petiolate, oval, acuminate at both ends. Stipula connate, sheathing, short. Corymb terminal, trichotomous. Flowers white.—This genus is nearly allied to Isóra, but differs in the tube of the corolla being shorter; and to Polygoñus, but differs in the stigma being undivided.

1 B. corymbós'a (D. C. Diss. ined. 1. ann. mus. 9. p. 219.) h. & S. Native of Sierra Leone, where it was collected by Smette. Verulámbia corymbós'a, Poir. dict. 8. p. 543. Isóra nírfida, Schumpl. pl. guin. p. 77.

Var. β. angustifólia (D. C. prod. 4. p. 485.) leaves narrower than in the species, and more acuminate at both ends. h. & S. Native of Gambie and Cayor, in humid places, where it was collected by Leprieur and Perrottet.

Corymbose-flowered *Baconia*. Shrub 4 to 5 feet.

Clt. See Isóra, p. 574. for culture and propagation.


Lin. syst. Tetrádrus, Monogónia. Calyx with an ovate tube, and a small 4-toothed limb (f. 106. a.). Corolla salver-shaped (f. 106. b.), with a slender terete tube (f. 106. d.), and a 4-parted spreading limb (f. 106. b.); tube longer than the lobes. Anthers 4, almost sessile in the throat, exserted a little. Style equal in length to the tube of the corolla, or a little longer, but shorter than the corolline lobes, bifid at the apex (f. 106. c.); lobes of stigma diverging or revolute. Berry drupaceous, nearly globose, crowned by the permanent calyx, 2-celled, containing 2 chartaceous 1-seeded pyreneæ, which are flat or hollow inside, and gibbous on the back. Albumen cartilaginous. Embryo dorsal, erect, incurved, with foliaceous cotyledons, and a long radicle.—Shrubs, sometimes rising to the height of small trees, natives of Asia, rarely of Africa. Leaves opposite. Stipulas broad at the base, acute at the apex, or ending in a bristle-like awn. Corymb terminal, usually trichotomous. Flowers scarlet, rose-coloured, flame-coloured or white, usually fragrant.

* Flowers scarlet, flame-coloured, rose-coloured, or flesh-coloured.

1 I. grandifióra (Ker. bot. reg. t. 154.) leaves sessile, cordinate, oblong, acute, shining; lobes of calyx acute; lobes of corolla ovate-lanceolate, acute; corolline umbellate; style hardly exserted; berry crowned by the lobes of the calyx. h. & S. Native of the East Indies, at Tanjore; and of China and Ceylon.—Bur. fl. zeyl. t. 57.—Pluk. alm. t. 59. f. 2. I. coccínea, Lin. spec. 159. exclusive of the synonymes. Roxb. fl. ind. 1. p. 385. Smith in Rees’ cycl. no. 1. Pavéttá coccínea, ex Blum. bijdr. 920. An elegant shrub. Flowers scarlet, disposed in ample corymbes. Tube of corolla almost 2 inches long.


2 I. propíq'qua (R. Br. in Wall. cat. 6119.) leaves almost oval, ovate or oblong, cordate at the base, coriaceous, glabrous, mucronate or acuminate; corymbes compound, sessile,
many flowered; calyceous teeth acute; lobes of corolla oblong, acuminate; style exerted, biform, smooth. $\ast$. S. Native of Madras, Ceylon, and Martaban. I. coccinea Ceylonensis, Roxb. Flowers scarlet. Very nearly allied to I. Bandhana.

**Allied Ixora.** Shrub.


5 I. crocata (Lindl. bot. reg. 782.) leaves firm, rather coriaceous, oval-lanceolate, much attenuated; coryms many-forked, decomposed, crowded, fuscagitate; teeth of calyx ovate, acute; short; lobes of corolla obvate-cuneate, 3 times or more shorter than the tube; style a little exerted, hairy in the middle. $\ast$. S. Native of China. I. Cinnamomea, Lam. dict. 3. p. 344. Flowers orange coloured. Tube of corolla 15 lines long. The species is very nearly allied to I. stricta; but differs in the leaves being stiffer, and in the tube of the corolla being twice the length.


6 I. incarna (D. C. prod. 4. p. 486. but not of Roxb. ex Smith.) leaves almost sessile, oblong, obtuse and rather cordate at the base, and bluish at the apex; coryms on short peduncles; lobes of calyx acute; lobes of corolla oval-oblong, acute. $\ast$. S. Native of the Moluccas, and now cultivated in Java. Lodd. bot. cab. t. 1049. Pavetta incarna, Blum. bijdr. p. 950. The flowers are either pale rose-coloured, flesh-coloured or white; but in the British gardens there is only the pale red-flowered variety to be found. Tube of corolla 10-11 lines long.

**Flesh-coloured-flowered Ixora.** Shrub 2 to 3 feet.

7 I. amoen'a (Wall. cat. no. 6121.) leaves oblong-lanceolate, glabrous, petiolate; stipulas cuspidate at the apex; coryms compound, pedunculate; lobes of calyx obtuse; lobes of corolla bluish; style and anthers exerted. $\ast$. S. Native of the East Indies, at Amherst, Chapeppong, Tavoy, Pulo-Penang, &c. Apparently pale, scarlet.

**Pleasant Ixora.** Shrub.

8 I. fulgens (Roxb. fl. ind. 1. p. 387.) leaves almost sessile, lanceolate, acute; coryms terminal, compound; lobes of calyx cordate; tube of corolla with a contracted mouth; lobes of corolla lanceolate, acute; berry 2-lobed. $\ast$. S. Native of the Moluccas. I. lanceolata, Lam. dict. 3. p. 343. I. longifolia, Curt. bot. mag.—Rumph. amb. 4. t. 46; and therefore I. longifolia, Smith in Rees' cyc. no. 3? Branches weak. Flowers deep scarlet. Berries deep purple.Perhaps the Bem-Schetti, Rhed. mal. 2. t. 57 is a paler variety of this or a nearly allied species.

**Full-grown Ixora.** Fl. June, Aug. Clt. 1823. Shrub 2 to 5 feet.

9 I. Notosisia'na (Wall. cat. no. 6132.) leaves ovate-oblong or oblong, acuminate, coriaceous, glabrous; panicles terminal, with the branches coriaceous and dense; lobes of corolla obtuse; stigma exerted, undivided; stipulas much acuminate. $\ast$. S. Natives of the East Indies, on the Nellighery mountains. Flowers apparently red or scarlet.

**Noton's Ixora.** Shrub.

10 I. tenuiflora (Roxb. fl. ind. 1. p. 397.) leaves on short petioles, oblong, obtuse, smooth; panicles terminal, coriaceous, contracted; lobes of calyx cuneate, obtuse; corolla with a long slender tube, and oblong obtuse lobes, which are longer than the erect style and stamens. $\ast$. S. Native of the Moluccas. Flowers scarlet. Allied to I. fulgens.

**Slender-flowered Ixora.** Shrub 2 to 4 feet.

11 I. congo'sta (Roxb. fl. ind. 1. p. 397.) leaves on short petioles, oblong, coriaceous, acuminate, with coarse parallel veins; coryms terminal, short, dense; flowers almost sessile; teeth of calyx bluish; lobes of corolla oblong, obtuse; stigma exerted. $\ast$. S. Native of the Moluccas. Flowers scarlet. Allied to I. fulgens.

**Crowded-flowered Ixora.** Shrub 2 to 4 feet.

12 I. pen'dula (Jack, mal. misc. no. 2. p. 11.) leaves broadly elliptic, quite glabrous, pale beneath; branches compressed; coryms on long trichotomous peduncles, pendulous; lobes of calyx small, acute; lobes of corolla narrow; stigma exerted. $\ast$. S. Native of Pulo-Penang, where the most of the Malay Ixoras are called Bunga-yarum. Flowers red.

**Pendulous Ixora.** Shrub 2 to 4 feet.

13 I. elongata (Heyne, ex Wall. cat. no. 6131.) leaves petiolate, broad-ovate, tapering much to the base, glabrous; floral ones ovate, sessile, coriaceous at the base, and clasping the stem; peduncles terminal, trichotomous, with the branches coriaceous; corollas hairy; corolla with a smooth tube, but the segments are downy on the outside, particularly in aestivation; lobes of corolla acute; stigma exerted. $\ast$. S. Native of the East Indies. Flowers apparently red or scarlet.

**Elongated-peduncled Ixora.** Shrub.

14 I. rosea (Wall. in Roxb. fl. ind. 1. p. 398.) leaves almost sessile, oblong, acute, acuminate, contracted at the base and somewhat emarginate, rather downy on the nerves beneath, as well as the branchlets; coryms terminal, decomposed, large, loose; lobes of calyx acute, rather ciliated; lobes of corolla oblong-cuneate, acute; stigma exerted. $\ast$. S. Native of Bengal, on the hills of Silhet. Ker. bot. reg. t. 540. Sims. bot. mag. 2428. Lodd. bot. cab. t. 729. Flowers rose coloured. Tube of corolla about an inch long. There is a variety of this plant having the leaves glabrous beneath.


15 I. parviflora (Vall, symb. 3. p. 11. t. 52. but not of Lam.) leaves on short petioles, coriaceous, lanceolate-oblong, obtuse, coriaceous at the base, glabrous; stipulas triangular, acute; corollas pedicellate; terminal; teeth of calyx short, bluish; lobes of corolla oblong, 3 times shorter than the tube; stigma a little exerted. $\ast$. S. Native of the East Indies. Flowers scarlet.

**Small-flowered Ixora.** Shrub.


**Amboyna Ixora.** Shrub 4 feet.

17 I. erubescens (Wall. cat. no. 6143.) leaves oblong, blunt at both ends, glabrous, on short petioles; upper ones sessile; corollas downy; lobes of corolla linear; stigma exerted. $\ast$. S. Native of the Burmese empire, on the banks of the Atram. Flowers reddish. I. affinis, Wall. cat. no. 6144. does not app-
pear to differ from this species, except in the more acuminated leaves.

Reddish-flowered Ixora. Shrub.

18 I. Java'nicia (D. C. prod. 4. p. 487.) leaves on short pedi-
toes, ovate-oblong, acuminated, glabrous; corymbs on long peduncles, tripartite, few-flowered; teeth of calyx acute; lobes of corolla ovate, acutish. 'S. Native of Java, on the mountains. Pavetta Java'nicia, Blum. bidjr. p. 949. Flowers of a deep vermilion colour. Habit of I. coccinea and I. incarnata.

Java Ixora. Shrub 3 to 4 feet.

19 I. Pauci'flora (D. C. 1. c.) leaves on short pedi-
toes, oblong, acuminated, acute at the base, glabrous; cymes on short peduncles, tripartite, few-flowered; teeth of calyx acute; lobes of corolla ovate, acute. 'S. Native of the west of Java, on Mount Pangaranjha, in woods. Pavetta pauci'flora, Blum. Flowers of a vermilion colour. Allied to I. Java'nicia, but differs in the cymes being fewer-flowered, and on shorter peduncles; and in the teeth of the calyx being acute.

Few-flowered Ixora. Shrub.

20 I. Salici'folia (D. C. prod. 4. p. 487.) leaves on short pedi-
toes, linear-lanceolate, acuminated, glabrous; corymbs brac-
tete; calycine segments acute; segments of corolla lanceolate, acuminated. 'S. Native of Java, on the mountains. Pavetta salici'folia, Blum. bidjr. p. 951. Flowers scarlet. A very beautiful species. Leaves 9-10 inches long, and 6 lines broad.

Willow-leaved Ixora. Shrub 3 to 4 feet.

21 I. Finlay'son'ia (Wall. cat. no. 6166) leaves ovate-
lanceolate, glabrous, tapering much to the base, obtuse, and 
mucronate at the apex, petiole; corymbs terminal, compound; 
lobes of calyx membranous; lobes of corolla obtuse; stigma 
exserted. 'S. Native of the East Indies. Flowers appar-
ently red.

Finlayson's Ixora. Shrub.

** Flowers white.

22 I. Blan'da (Ker. bot. reg. t. 100.) leaves oval or ovate-
lanceolate, almost sessile; cymes trichotomous, compound, con-
tracted, many-flowered; teeth of calyx short, bluntest; lobes 
of corolla obovate, reflexed; style a little exserted. 'S. Native of the East Indies. I. alba, Roxb. fl. ind. 1. p. 389. but not of Lin. Nearly allied to I. stric'ta, but differs in the corolla being white. Peduncles and calyces red. Stigma exserted, but shorter than the lobes of the corolla. Tube of corolla 10 lines long. Flowers at first white, but becoming yellow as they fade. Stipulas broad at the base, and ending in an awn.

Bland-flowed Ixora. Fl. Aug. Cit. 1768. Sh. 3 to 4 ft.

23 I. Macropphi'lla (Bartl. in herb. Henkx, ex D. C. prod. 
4. p. 487.) glabrous; leaves cuneate-obovate, or oblong-ob-
voate, acute on short pedi-
toes; peduncles elongated, bracteate at the base, and trichotomously corymbose at the apex; teeth of calyx acutish, hardly perspicuous; stigma exserted, with revolute lobes; fruit nearly globose. 'S. Native of the Island of Manilla. Allied to I. cuneifolia. Flowers blackish in the dried state, but probably white in the recent state.

Large-leaved Ixora. Shrub.

24 I. Subs'tillis (Wall. cat. no. 6130) leaves oblong, ta-
pering to both ends, petiole, glabrous; corymbs almost sessile, dense; lobes of calyx subulate; lobes of corolla acute; stigma exserted. 'S. Native of the Island of Silhet, on the mountains. Stipulas subulate at the apex. Flowers apparently white.

Almost-sessile-corymbed Ixora. Shrub.

25 I. Cunei'folia (Roxb. fl. ind. 1. p. 390.) leaves broad-
cuneate, lanceolate or oblong-lanceolate, acuminated, glabrous; 
corymbs terminal, on long peduncles, panicled; flowers crowded; 
lobes of calyx oblong, conic; lobes of corolla oblong, obtuse; 

stigma exserted. 'S. Native of the East Indies, about Dacca and Serampore. Ker. bot. reg. 648. Loddd. bot. cab. t. 1215. Corolla white, with the tube about 6-7 lines long. Berries turbinate, red. Down very minute on the peduncles, branchlets, and usually on the nerves of the leaves underneath.


26 I. Bar'atta (Roxb. fl. ind. 1. p. 394.) leaves oblong, 
short pedicellate, shining; upper ones almost sessile, and roundly 
cordate at the base; panicle spreading, long, sub-corymbose; 
lobes of calyx acutish; lobes of corolla oblong, bearded with 
long white hairs at the throat; stigma exserted. 'S. Native of the East Indies. Smith, in Rees' cycl. no. 6. Sims, bot. Third. 2705. Bem.—Schetti, Rhed. mal. 2. t. 13. Flowers white. Stigma, according to Roxb. almost at the throat, but in the specimens examined it is exserted. Berries red.

Bearded Ixora. Fl. June, July. Cit. 1823. Sh. 8 to 12 ft.

27 I. OxypHI'lla (Wall. cat. no. 6159) leaves elliptic-lan-
ceolate, long-acuminated, glabrous, on short pedicels; stipulas 
subulate at the apex; lobes of calyx subulate; stigma exserted. 'S. Native of Silhet, on the mountains. Flowers apparently white.

Sharp-leaved Ixora. Shrub.

28 I. Undu'la (Roxb. fl. ind. 1. p. 395.) leaves broad-
lanceolate, acuminated, undulated, glabrous; panicle terminal, 
compound, having its branches corymbose at the apex; lobes 
of calyx acutish; segments of corolla linear, bluntest; stigma 
exserted; berry transversely oval, somewhat didymous. 'S. Native of Bengal, in woods. Smith, in Rees' cycl. no. 7. Roth, 

hort. trans. 7. p. 50. Ixora Cana. Ham. ex Wall. cat. 
no. 6130. Flowers white. Tube of corolla 5 lines long; lobes 
reflexed.

Waxed-leaved Ixora. Fl. June, Aug. Cit. 1820. Sh. 3 to 4 feet.

29 I. Specta'illis (Wall. cat. no. 6183) leaves broad, elliptic-
lanceolate, petiole, glabrous; upper ones oblong, cordate at 
the base and stem clasping; peduncles elongated, trichotomous, 
having the branches corymbose; teeth of calyx small, acute; 
lobes of corolla narrow. 'S. Native of the Burmese Em-

pire, near Martaban. Flowers apparently white.

Showy Ixora. Shrub.

30 I. Lan'ceolaria (Coebr. in Roxb. fl. ind. 1. p. 397) 
leaves approximate, very long, ovate-lanceolate, acuminated, 
on short pedi-
toes, glabrous; corymbs terminal, almost sessile, small; 

bracteoles coloured; corolla with a filiform tube, and 

linear-oblong lobes; anthers linear, bifid at the base; style 
exserted. 'S. Native of the East Indies, in Travancore. 
Branches twiggy, pendulous, somewhat dichotomous. Stipulas 
subulate at the apex, rather longer than the pedioles. Corolla 
white, having the tube 9 lines long. Berries red, globose.

Lanceolar-leaved Ixora. Shrub 4 to 6 feet.

31 I. Leu'ca'stha (Wall. cat. no. 6148) leaves ovate-
lanceolate, acuminated on short pedi-
toes; peduncles and corymbs 

downy; stipulas subulate at the apex; lobes of calyx, and 

bracteas subulate; lobes of corolla long and narrow; stigma 

much exserted; corymbs loose. 'S. Native of the East 

Indies, near Travancore. Flowers white.

White-flowered Ixora. Shrub.

32 I. Arbo'rea (Roxb. mss. ex Smith, in Rees' cycl. no. 5. but 

not of Loddd.) leaves elliptic-oblong, obtuse, on short pedi-
toes, rather 

undulated, smooth; corymbs trichotomous, divariccate, sessile, 

many-flowered; teeth of calyx acutish; lobes of corolla oblong, 

obtuse, one-half shorter than the tube; stigma hardly exserted. 

'S. Native of the East Indies. I. Pavetta, Andr. bot. rep. 
t. 78. Pers. ench. 1. p. 130. but not of Roxb. Corolla white, 

5 lines long. Stigmas 2, thickish, greenish at the throat.
RUBIACEÆ.  CLIX. Ixora.

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33 I. brachi'poda (D. C. prod. 4. p. 488.) glabrous leaves, on very short petioles, elliptic-oblong, bluntly acuminate; stipules intrapetiolar, combined, truncate, and mucronated on both sides; corymbs terminal, pedunculate, shorter than the leaves; limb of calyx very short, bluntly 5-toothed.  h. S. Native of equinoctial Africa, in the woods of Casamancia, where it was collected by Lepricur and Perrottet.  Leaves 6 inches long, and 2 broad, and the petioles about 2 lines long.  Tube of corolla, almost an inch long.  Bracteas small.  Flowers pale in the dried specimens, but are probably white in the recent state.

Short-petioled Ixora.  Shrub 4 to 5 feet.

34 I. acumin'ata (Roxb. fl. ind. 1. p. 393.) leaves petiolate, broad-lanceolate, acuminate, smooth, glaucous; floral leaves stem-clasping, and broader; corymbs supra-decompound, crowded, almost sessile; lobes of calyx ensiform; lobes of corolla ovate-oblong, obtuse; stigma exerted, undivided.  h. S. Native of the East Indies, in the province of Silhet, in woods.  Flowers large, white, with the tube 1 1/2 inch long.  Calyces white.

Acuminated-leaved Ixora.  Shrub 8 to 5 feet.

35 I. siame'nsis (Wall. cat. no. 6168.) leaves ovate-oblong, mucronate, cordate at the base: upper ones attenuated at both ends; corymbs terminal; lobes of corolla acute; stigma exerted.  h. S. Native of Siam, in the East Indies.  Flowers white?

Siam Ixora.  Shrub.

36 I. opa'ca (R. Br. in Wall. cat. no. 6141.) leaves long-lanceolate, acuminate, petiolate, glabrous; corymbs downy; teeth of calyx small; lobes of corolla obtuse; stigma exerted.  h. S. Native of Pulo-Penang.  Flowers apparently white.

Opaque-leaved Ixora.  Shrub.

37 I. brach'ica (Roxb. fl. ind. 1. p. 391.) leaves on short petioles, broad-lanceolate, obtuse, glabrous; panicle bracthate, with remote diverging corymbose branches; tube of corolla filiform, and the lobes are obovate and emarginate; anthers sessile at the throat; stigma exerted.  h. S. Native of Bengal, in woods.  Flowers small, white.  Nearly allied to I. paviliflora, Vahl, but differs in the flowers being white.  Berries deep purple, rather larger than peas.  Petioles about half an inch long.

Brachiat-leaved Ixora.  Ct. 1825.  Shrub 2 to 4 feet.

38 I. decip'iens (D. C. prod. 4. p. 488.) glabrous; leaves on short petioles, oblong-lanceolate, acutish at the base, acute or obtuse at the apex; stipulas broad at the base, and ending in a subulate awn at the apex; corymbs terminal, tripartite at the base, sessile, with panicled branches; lobes of calyx short, bluntish; corolla with a slender tube, and oval, bluntish lobes; style pilose.  h. S. Native of Coromandel, on the mountains.  I. pavilifiora, Roxb. fl. ind. 1. p. 393. but not of Vahl, nor Lam.  Flowers white, sweet-scented.  Tube of the corolla 4 lines long, twice the length of the lobes.  Berries roundish, black.


39 I. brun'oxtis (Wall. cat. no. 6136.) leaves obovate-lanceolate, sessile, corollas at the base, acuminate at the apex, downy beneath, but villous on the nerves; peduncles and corymbs villous, as well as the calyces and corollas outside; bracteas and teeth of calyx subulate; lobes of the corolla narrow, acute; stigma exerted.  h. S. Native of Pulo-Penang.  Flowers apparently white.  Allied to I. villis.

Brook's Ixora.  Shrub.

40 I. litt'ulicas (Roxb. fl. ind. 1. p. 392.) leaves broad-cuneate-lanceolate, acuminate, villous beneath, on short petioles; corymbs trichotomous, or 6 to 7 times divided, with the branches trichotomous and villous; lobes of calyx oblong, ciliate; corolla with a very long slender tube, and oblong obtuse lobes.  h. S. Native of the East Indies, in Silhet.  Flowers white, fragrant.  Stipulas and branches villous.  "Villosus" Ixora.  Shrub 4 to 5 feet.

41 puriflora (D. C. prod. 4. p. 489.) leaves sessile, obvate-oblong, cuneate, and somewhat cordate at the base, acuminate at the apex, downy on the nerves on both surfaces, as well as the branchlets, corymbs, and corollas; stipulas long, subulate at the apex; corymbs terminal, dense, sessile; teeth of calyx and alabastra, very acute.  h. S. Native of the East Indies.  A very distinct species.  Leaves 8 inches long and 3 broad.  Corolla having the tube about 9 to 10 lines long, and the lobes linear and acute, about 5 lines long.  "Downy-flowered" Ixora.  Shrub.

42 I. longiflora; leaves broad, elliptic-lanceolate, tapering to both ends, glabrous above, and villous beneath, particularly on the nerves, as well as the branchlets, pedicels, peduncles, panicles, fruit; segments of the calyx subulate.  h. S. Native of Pulo-Penang.  I. macrophylla, R. Br. in Wall. cat. no. 6165.  "Long-leaved Ixora."  Shrub.

† Species not sufficiently known.

43 I. alba (Lin. spec. 160. but not of Roxb.) leaves ovate-lanceolate; flowers fasciculate.  h. S. Native of the East Indies, but is a very obscure species, and probably fictitious; the description taken from the figure in Pluk. aln. t. 109. f. 2. and Bem.—Schetti Rheald. mal. t. 4. 14. Pluknet's plant belongs to I. incarnata, and Rheedé's probably to I. fulgens.  The flowers are said to be terminating in small clusters, white, and without scent.

White-flowered Ixora.  Shrub 6 to 7 feet.

44 I. louren'si; leaves ovate-oblong, acute, smooth, nearly sessile; cymes or corymbs fasciculate.  h. G. Native of Cochin China.  I. alba, Loure. coch. 76.  Flowers white.  Berries red.

Louren's Ixora.  Shrub 3 to 4 feet.

45 I. mort'n'a (Loure. coch. 76.) leaves oblong, broadest at the apex, obvate, cuneate and corolate at the base, nearly sessile, glabrous; corymbs terminal, fastigate.  h. G. Native of Cochin China, on the mountains.  Flowers scarlet.

Mountain Ixora.  Shrub 3 to 4 feet.

46 I. novem' niektóry (Loure. coch. 76.) climbing; leaves ovate-lanceolate, almost sessile, 9-nerved, rough; cymes terminal, hemispherical.  h. G. Native of Cochin China, in uncultivated places.  Flowers white, terminating in hemispherical cymes.  Tube of the corolla very long and slender.  Stigma ovate, bifid.  Berry 1-seeded.

Nine-nerved-leaved Ixora.  Shrub cl.

47 I. viola'cea (Loure. coch. 76.) climbing; leaves lanceolate, almost sessile, pilose, 9-nerved; cymes axillary.  h. G. Native of Cochin China, in uncultivated places, climbing over trees.  Flowers violaceous.  Berry 1-seeded.  Seed ovate, rough.

Violaceous-flowered Ixora.  Shrub cl.

48 I. thyrsiflora (Poir. suppl. 3. p. 208.) leaves almost sessile, ovate-cuneate, obtuse, glabrous on both surfaces, hoary beneath; stipulas ovate, acute; thyrase terminal, crowded; teeth of calyx acute, somewhat setaceous; corolla with a slender tube, and oval obtuse lobes, which are shorter than the tube.  h. G. Native of the Cape of Good Hope.

Thyrse-flowered Ixora.  Shrub.

49 I. laxiflora (Smith. in Rees' cyclo. vol. 19. no. 8.) leaves elliptic-oblong, acute, tapering into the petioles at the base: upper ones rounded at the base, almost sessile; panicles corymbose, loose, longer than the leaves; lobes of the corolla convex, spreading, bearded in the disk above: style nearly the length of
Rubiaceae. CLIX. Ixora. CLX. Pavetta.

4 P. montana (Reeves. in Blum. bijdr. p. 952.) leaves on long petioles, oblong-lanceolate, much acuminate at both ends, downy, as well as the corymb, which are terminal, trichotomous, and bractiace; calyces teeth acute; segments of corolla acutish. ₇. ₈. Native of Java, in woods on the mountains. Very nearly allied to P. indica. Flowers white, having the segments tipped with green.

Mountain Pavetta. Shrub 4 to 5 feet.

5 P. odorata (Blum. bijdr. p. 932.) arboreous; leaves on short petioles, oblong, acute at both ends, but usually bluish at the apex, coriaceous, glabrous; corybas terminal, trichotomous, many-lobed; limb of calyx bluntly toothed; segments of corolla obtuse. ₇. ₈. Native of Java, on the mountains in woods. Flowers white, very sweet-scented.

Sweet-scented-flowered Pavetta. Shrub 4 to 5 feet.

6 P. macropphylla (Blum. bijdr. p. 953.) leaves on short petioles, oblong, very blunt, attenuate at the base, coriaceous, glabrous; corybas axillary and terminal, downy, trichotomously fastigate; segments of calyx and corolla blunt. ₇. ₈. Native of Java, in mountain woods. Flowers white.

Long-leaved Pavetta. Shrub 4 to 5 feet.

7 P. reticulata (Blum. bijdr. p. 955.) leaves oblong, acuminate at both ends, coriaceous, glabrous, reticulated beneath; corybas terminal, trichotomous, long on peduncles; segments of calyx acute; segments of corolla lanceolate, acuminate. ₇. ₈. Native of Java, on Mount Salak. Flowers white. Stem 4 feet high. Young branches compressed. Fruit didyrmously globose.

Reticulated-leaved Pavetta. Shrub 4 feet.

8 P. longipes (D. C. prod. 4. p. 490.) leaves oval-oblong, acuminate, petiolate, glabrous; stipules short, acuminate; peduncles terminal, longer than the leaves, coriaceous at the apex, few-flowered; fruit ovate, didymous, naked at the apex. ₇. ₈. Native of the island of Timor. Upper leaves 4-5 inches long, ½ to 2. Peduncles slender, 6 inches long. Corolla with a slender tube, and 4 oblong spreading reflexed lobes. Anthers linear. Style a little exerted; stigma thick, bipartite.

Long-peduncled Pavetta. Shrub 4 to 5 feet.

9 P. paludosus (Blum. bijdr. p. 954.) leaves on short petioles, oblong, bluish, membranous, glabrous: the upper ones oblong-cordate, sessile; corybas terminal, on long peduncles, trichotomous, coloured; teeth of calyx obtuse; segments of corolla oblong, acute. ₇. ₈. Native about Batavia, in marshes. Flowers white. Allied to Ixora barbatá.

Marsh Pavetta. Shrub 4 to 5 feet.

10 P. sylvatica (Blum. bijdr. p. 953.) leaves oblong-lanceolate, acuminate at both ends, membranous, glabrous, downy in the axils of the veins beneath; corybas terminal, pedunculate, loosely trichotomous; limb of calyx obseously decimated; segments of corolla oblong, obtuse. ₇. ₈. Native of Java, in woods on the Seribu mountains. Flowers small, white.

Wood Pavetta. Shrub 4 to 5 feet.

11 P. breviflora (D. C. prod. 4. p. 491.) leaves oval, acute, acuminate at the base, on short petioles, rather membranous, glabrous; petiole coriaceous, many-flowered, with opposite branches and branchlets, and as well as the flowers glabrous; tube of corolla hardly longer than the lobes. ₇. ₈. Native of the East Indies, on the Nelligerry mountains, where it was collected by Leschenault. Tube of corolla 3 lines long. Style 4 lines long, clavate at the apex. Stipules broad, rather membranous. Plant becoming blackish on drying.

Short-flowered Pavetta. Shrub 3 to 4 feet.

12 P. rothiána (D. C. prod. 4. p. 491.) branchlets and calyces clothed with hoary villi; leaves elliptic, petiolate, rather hairy, but while young clothed with hoary tomentum;
triangular, glabrous inside; flowers disposed in panicked corolls, bearded; corolla with a long terete tube, which is bearded at the throat, and oblong obtuse lobes; style setaceous, glabrous. h. S. Native of the East Indies. P. villōsa, Roth. nov. spec. p. 88. but not of Vahl.

Roth's Pavetta. Shrub to 3 ft. 4

13 P. Naucloseflor (R. Br. in Wall. cat. no. 6171.) villous in every part; leaves oblong-lanceolate, acuminate; corolls terminal; teeth of calyx short, acute; lobes of corolla obtuse. h. S. Native of Pulo Penang. Fruit round.

Nauclose-flowered Pavetta. Shrub.

14 P. Brunönis (Wall. cat. no. 6172.) soft and villous all over; leaves obovate; stipulas and bracteas broad, membranous; peduncles trichotomous, having the branches dense and corymbose; lobes of calyx subulate. h. S. Native of the East Indies, on the Nelligerry mountains. Pavetta mollis, Wall. cat. no. 6179. Leaves smooth leaves in the adult state.

Brown's Pavetta. Shrub.

15 P. Webereffolia (Wall. cat. no. 6182.) leaves broad-lanceolate, glabrous, tapering to both ends; corollums downy; fruit spherical. h. S. Native of Sumatra. Flowers white.

Sumatra Pavetta. Shrub to 3 ft. 4

17 P. Longiflora (Vahl, symb. 3. p. 12.) leaves lanceolate-lanceolate, and are as well as the branches glabrous; stipulae pilose inside; flowers disposed in fascicles; teeth of calyx rather long, acute. h. S. Native of Arabia Felix. Ixora occidentalis, Forsk. cat. p. cv. Ixora longiflora, Poir. suppl. 3. p. 208. Flowers white. Berries black. Corolla an inch and a half in diameter.

Var. Jatana (D. C. prod. 4. p. 491.) leaves on short petioles, oblong, acute at both ends, coriaceous; corolls terminal, fastigiate, trichotomous, downy; tube of corolla very long; lobes of calyx and corolla acute. h. S. Native of Java, in woods on the mountains. Pavetta longiflora, Blum. bijdr. p. 952.

Long-flowered Pavetta. Shrub.


Villous Pavetta. Shrub.

* * * African species.

19 P. Owarie'ssis (Beauv. fl. d'ow. 1. p. 87. t. 52.) leaves on long petioles, ovate-oblong, attenuated at both ends, membranous, glabrous; corolls terminal; lobes of calyx ovate, acutish; lobes of corolla linear, obtuse, almost the length of the tube; style twice as long as the tube, clavate at the apex. h. S. Native of the west coast of Africa, between Waree and Buonopomo. Ixora Owarie'ssis, Poir. suppl. 3. p. 207. Flowers white. Throat of corolla very villous. Stipulas short, stem-elapping, apiculated by a short point at the apex.

Waree Pavetta. Shrub to 4 ft. 5

20 P. Ca'ftra (Thoub. prod. p. 20. fl. cap. 1. p. 535.) leaves obovate, almost sessile, glabrous; stipulas membranous, connate; flowers subumbellate; teeth of calyx setaceous; lobes of corolla oblong, acute, shorter than the tube. h. G. Native of the Cape of Good Hope, in the woods of Krakokamma. Ixora Ca'ftra, Poir. suppl. 3. p. 209. Pavetta coryboma, Houtt. ed. 1. p. 11. t. 40. and Crintina Capêniss, Houtt. pl. syst. 5. p. 357. t. 40. f. 1. ex Thoub. and Reem. syst. 3. p. 175. Ixora alba, Burm. herb. Pav. thysiflora, Thomb. herb. Corymb of flowers terminating in shorter branches. Flowers white. Style much exserted, clavate at the apex. This is a beautiful shrub in flower.


21 P. Parviflora (Afz. rem. guin. p. 47.) leaves oblong, attenuated at both ends; stipulas acute; peduncles dichotomously umbratell; calyces and corollums villous. h. S. Native of Guiana. Flowers white.

Small-flowered Pavetta. Shrub to 4 to 5 feet.

22 P. Smethmanni (D. C. prod. 4. p. 492.) leaves ovate, short-acuminated, coriaceous, smooth, on short petioles; corollums axillary, on short peduncles; teeth of calyx oblong, ciliately; corolla with a terete tube, and the limb glabrous before expansion. h. S. Native of Sierra Leone. Pavetta parviflora, Smetham. herb. Perhaps this plant belongs to a different genus.

Smethmann's Pavetta. Shrub to 3 to 4 feet.

23 P. Subglabra (Schum. pl. guin. p. 78.) branches terete, nearly glabrous; leaves ovate, acuminate, rather ciliately at the base; pedilium rather hairy; stipulas ciliately on the inside, ovate, mucronate; corollums festigiate, terminal; lobes of calyx lanceolate, acute. h. S. Native of Guinea. Flowers white. Stigma glabrous.

Nearly-glabrous Pavetta. Shrub to 4 to 5 feet.

24 P. Genipeflora (Schum. pl. guin. p. 78.) branches terete, downy; leaves oblong-lanceolate, acuminate, shining, glabrous, downy beneath and on the petioles; stipulas setaceous acuminate; corollums terminal, glabrous; peduncles and calyces hairy. h. S. Native of Guinea. Flowers white.

Genipa-leaved Pavetta. Shrub to 4 to 5 feet.

25 P. Lateriflora; leaves oblong-lanceolate, coriaceous, acuminate, almost sessile, disposed in 3 rows; peduncles axillary, subcoriaceous, h. S. Native of Sierra Leone. Flowers white. Berry roundish, containing a 1-seeded nut. Cotyledons long, twisted. Perhaps the same as P. Smethmanni.

Side-flowered Pavetta. Shrub to 4 to 6 feet.

26 P. Cane'scens (D. C. prod. 4. p. 492.) branchlets clothed with white hairs; leaves elliptic, attenuated at the base, on short petioles, reticulately veined, downy above, and clothed with canescent villi beneath; corollums lateral, many-flowered, almost sessile; pedicels and calyxes hairy; corolla with a downy tube, and a glabrous limb; style much exserted, rather clavate at the apex. h. S. Native of the South Western Coast of Africa, in Angola. Pavetta tomentosa, A. Rich. mem. soc. hist. nat. par. 5. p. 181. but not of Roxb. Flowers white.

Cane-crest Pavetta. Shrub.

* * * Species natives of Madagascar.

27 P. ? Anthophylla (A. Rich. in mem. soc. hist. nat. par. 5. p. 181.) quite glabrous; leaves short, oval, acute, rather fleshy; stipulas broad, short, acuminate, permanent; flowers cymose, terminal, pentamorous; one of the calycine lobes is drawn out into a leaf; anthers inclosed; style much exserted. h. S. Native of Madagascar. Perhaps a proper genus.

Leafflowered Pavetta. Shrub.

28 P. Cineea (A. Rich. l. c.) shrub clothed with grey tomentum; leaves rather oval, acute, gradually narrowed at the base, clothed with cinereous tomentum, especially beneath; stipulas connate, lanceolate, permanent; cymes terminal, peduncu-
late, branched; flowers tomentose. \( \gamma \). S. Native of Madagascar.

*Gumnerous* Pavetta. Shrub.

29 P. *graecilis* (A. Rich. l. c.) quite glabrous; leaves elliptic-oblong, very acute, almost sessile; stipulas connate, narrow-lanceolate; cymes few-flowered, terminal; flowers very long, slender; stamens exserted; style hardly exserted beyond the tube. \( \gamma \). S. Native of Madagascar. Perhaps a proper genus.

Slender-flowered Pavetta. Shrub.

***Species natives of the South Sea Islands.***


*Guelder*-rose-like Pavetta. Shrub.


*Elder*-like Pavetta. Shrub.


Three-flowered Pavetta. Shrub.

† *Species not sufficiently known.*

33 P. *angustîfolia* (Rom. et Schultes, syst. 3. p. 175.) leaves linear-lanceolate, attenuated at both ends; cymes terminal, trichotomous, subumbellate; teeth of calyx acute; corolla with a slender tube, and oblong acute lobes. \( \gamma \). S. Native of the East Indies. Pavetta Indica, Burm. fl. ind. p. 35. t. 13. f. 3. exclusive of the synonyms. Ixôra angustîfolia, Lam. dict. 3. p. 45. Flowers white. Stigma nearly entire as in Pavetta, and about equal in length to the lobes of the corolla, as in Ixôra.

Narrow-leaved Pavetta. Shrub 3 to 4 feet.

34 P. *ampliæcorus* (Pers. ench. 1. p. 131.) glabrous; leaves stem-clasping, oval; segments of corolla acute, lanceolate. \( \gamma \). S. Native of the East Indies; and is often mixed with *P. Indica* according to Persoon.

Stem-clasping-leaved Pavetta. Shrub 3 to 4 feet.

35 P. ? *parasîtica* (Lour. coch. p. 73.) stem parasitical, much branched; leaves verticillate, ovate, tomentose; corolla with a long tube, and 4 oblong infixed lobes; style equal in length to the corolla; berry 1-seeded. \( \gamma \). G. Native of Cochín-china, in gardens, growing upon trees. Flowers small, dusky yellow. This plant should probably be removed from the genus.

Parasitical Pavetta. Shrub 1 foot.

*Cult.* For culture and propagation see Ixôra, p. 574.


LIN. SYST. *Tetrandria*, *Monogynia.* Calyx with an oval tube, and a small 4-toothed permanent limb. Corolla 4-cleft, with a hairy throat. Stamens 4, inserted in the throat of the corolla; filaments short; stigma bifid. Berry oval, smooth, umbilicate, 1-seeded, crowned by the permanent calyx. Embryo erect, in fleshy albumen.—Trees or shrubs, natives of Java. Leaves opposite, glabrous, acuminated at both ends. Flowers crowded, terminal, rarely axillary, sessile. Berry and wood very fetid.—This genus comes very near the following.

1. S. arbo' reum (Blum. bijdr. p. 956.) arboreous; leaves peltate, elliptic-oblong; flowers crowded, terminal, and sometimes axillary. \( \gamma \). S. Native of Java, in mountain woods.

*Tree* Saprosma. Tree.

2 S. *fruticos's* (Blum. bijdr. p. 956.) shrubby; leaves almost sessile, oblong-lanceolate; flowers crowded, terminal. \( \gamma \). S. Native of Java, on Mount Parang.

*Shrubby* Saprosma. Shrub.

*Cult.* See Ixôra, p. 574. for culture and propagation.


LIN. SYST. *Tetrandria*, *Monogynia*.
Stipulas very short, rounded, acuminated on both sides, ex Vahl; but in the specimen collected at Porto-Rico by Ryan, the stipulas are connate a little way at the base, and bilobate at the apex; both are, however, probably the same species.

Frelich's 'Cosseuraea.' Shrub.

Cult. For culture and propagation see Isóra, p. 574.


Lin. syst. Tetra-Pentándria, Monogynía. Calyx with a turbinate tube, and an obliquely denticulated deciduous limb. Corolla with a cylindrical tube, a villous throat, and 4-5 spreadingly reflexed lobes, which are longer than the tube. Anters 4-5, alternating with the lobes of the corolla, hardly exserted. Style short; stigma bifid. Ovarium crowned by the disk. Berry drupaceous, nearly globose, 2-celled, naked at the apex; cells containing 1 pyrena each. Pyreæa excavated on the inside, and gibbous on the back, coriaceous, 1-seeded. Albumen cartilaginous. Embryo minute, erect.—Small glabrous trees, natives of Asia and the Mauritius. Leaves opposite. Stipulas interpetiolar. Cymes trichotomous, axillary, and terminal.—This genus is nearly allied to Isóra, but differs in the tube being shorter than the corolline lobes, and in the limb of the calyx being deciduous. It is also nearly allied to Bácio, but differs in the stigma being bifid.

1 P. Lanceol'ata (Lour. coch. p. 75.) leaves lanceolate, petiolate; racemes terminal, compound; flowers tetramerous and tetrandrous. f. G. Native of China, about Canton. Branches diffuse. Flowers reddish.

 Lanceolate-leaved Polyozus. Shrub 4 feet.

2 P. Acumináta (Blum. bijdr. p. 948.) leaves oblong-lanceolate, very much acuminated; racemes axillary; flowers tetramerous and tetradrous. f. S. Native of the western part of Java, on the mountains. Branchlets compressed. Stipulas broad, short. Flowers small, corymbosæ; corymb in the axils of the superior leaves on short peduncles.

Acuminated-leaved Polyozus. Shrub.

3 P. Latífoliá (Blum. bijdr. p. 948.) leaves elliptic-oblong, acute at both ends; flowers pentamerous and pentandrous. f. S. Native of the island of Nusa-Kambanga, near Java.

Broad-leaved Polyozus. Shrub.

† Doubtful species.

4 P. I Maderaspa'ta'na (D. C. prod. 4. p. 495.) leaves petiolate, oblong-lanceolate, hardly acute at the base, and rather acuminated at the apex; coryms terminal, trichotomous; flowers pentamerous and pentandrous. f. S. Native of the East Indies, about Madras. Stipulas broad, short, acuminated, adpressed. Leaves coriaceous, those of the flowering branches 4 inches long and 1½ broad, standing on petioles about half an inch long.

Madras Polyozus. Shrub.

5 P. I Barba'ta (Smith, in Rees' cycI. vol. 26. under Pavétta,) leaves lanceolate-oblong, acute, smooth; panicles brachiate, divaricate, smooth; tube of corolla one-half shorter than the lobes, which are 5, and beset with bristles in the mouth. f. S. Native of the island of Honomia, in the East Indies. Leaves coriaceous, a foot long, and 2 inches broad. Stigma cylindrical, acute. From the tube of the corolla being shorter than the lobes, and the flowers being pentameric and pentandrous, it is probably a true species of Polyozus.

Bearded Polyozus. Shrub.

N. B. P. bipinnátus (Lour. coch. p. 75.) should be excluded from the present order altogether, from the bipinnate leaves, but its true place is unknown.

Cult. For culture and propagation see Isóra, p. 574.


Lin. syst. Pentándria, Monogynía. Calyx with an ovate tube, and a 5-toothed limb. Corolla, stamens, and style unknown. Berry crowned by the calyx, ovate-globose, rather coriaceous, 2-celled, rarely 3-celled. Seeds solitary in each cell, plano-convex or angular. Albumen rather cartilaginous, grumose from chinks and fissures. Embryo erect, small, rather curved, and nearly dorsal, with lanceolate cotyledons.—This genus is hardly known, but from the albumen it comes very near to Rutidea; and to Psychotria from the form of the fruit.

1 G. tão (Gaertn. fruct. 1. p. 138. t. 28. f. 2.) berry smooth; teeth of calyx on the top of the fruit, convoluted and rounded. f. S. Native of Ceylon, where it is called Hodgale. Berries black.

Black-berried Grumilea. Shrub.

2 G. Psychotrioides (D. C. prod. 4. p. 495.) berry striated lengthwise, crowned by the short tubular truncate limb of the calyx. f. S. Native of the western coast of Africa, in Casamance at Iou, where it was collected by Leplinier and Perrotted. Shrub glabrous. Leaves petiolate, elliptic, cuneated at the base, acute at the apex, shining. Stipulas solitary on both sides, lanceolate, deciduous. Flowers unknown. Fruit 5-6 together at the tops of the branches, sessile, almost capitate, black, ovate, 2-celled. Seeds ruminated as in Annona.

Psychotria-like Grumilea. Shrub 4 to 5 feet.

Cult. For culture and propagation see Isóra, p. 574.


Lin. syst. Pentándria, Monogynía. Calyx with a globose tube, and a small 5-parted limb; lobes ovate. Corolla funnel-shaped, with a terete tube, which is dilated at the apex, and 5 spreading oval lobes. Anters 5, sessile in the throat of the corolla, exserted, oblong, but shorter than the lobes of the corolla. Style clavate at the apex; stigmas 2, combined, indicated only by a furrow. Berry nearly dry, globose, crowned by the vestiges of the calyx, 1-celled, 1-seeded. Seed globose, umbilicate at the base, wrinkled on the outside. Albumen large, grumose, cartilaginous. Embryo oblique, terete.—Shrubs, natives of India and Africa. Branches terete, hispid while young. Leaves opposite, on short petioles, hispid on the nerves and petioles. Stipulas twin on both sides, combined to the middle, subulate at the apex. Spikes racemose, interrupted, terminal; flowers disposed in almost sessile opposite fascicles. Bracteas and calyces hispid. Corollas glabrous, becoming black on drying, but probably white in the recent state.

1 R. Farviplo'ra (D. C. I. c.) branches, petioles, and nerves of leaves on the under surface, rather hispid; leaves elliptico-oblong; spikes terminal, formed of interrupted fascicles of flowers; fruit glabrous. f. S. Native of Sierra Leone, where it was collected by Smeathmann; and of Casamance near Iou, where it was collected by Leplinier and Perrotted.

Small-flowered Rutidea. Shrub 3 to 4 feet.

2 R. Milílis (Blum. ex D. C. prod. 4. p. 495.) every part of the plant is clothed with soft hairyomentum; leaves elliptico-oblong, short, nearly sessile, villous; corolla the same; flowers sessile, the calyx and stamens usually wanting; fruit dry, with the calyx and stigmas persistent.

Small-flowered Rutidea. Shrub.
oblong, clothed with soft hairs on both surfaces, but most so beneath; corymbs terminal, dichotomous; fruit rather villous, globose, 1-seeded.  It. S. Native of the island of Pulo-Penang. The fabric of the seed is unknown.

Soft Rutidea. Shrub.

Cult. For culture and propagation see Ixora, p. 574.

CLXVI. FARÁ'MEA (Aublet does not give the meaning of this name). A. Rich. mem. soc. hist. nat. Par. 5. p. 175. t. 17. f. 1 and 2. D. C. prod. 4. p. 496.—Farámea and Tetramérium, Juss. mem. mus. 6. p. 376.

Lin. syst. Tetrándria, Monogýma. Calyx with a turbinately globose tube, and a very short 4-toothed or entire limb. Corolla with a short terete tube, a naked throat, and 4 spreading oblong or linear acute lobes, which are longer than the tube. Anthers 4, sessile, inclosed. Style short, bifid at the apex. Berry dry, 2-celled while young, but in the adult state it is globose, depressed, 1-celled, and 1-seeded, marked by 8 crenulations at the cincture. Seeds fixed to the bottom of the cell, umbilicate at the base, globose depressed. Albumen horny. Embryo lateral, small, horizontal.—Glabrous, dichotomously branched shrubs, natives of America. Leaves petiolate, ovate or oblong, acuminate. Stipulas interpetiolar, solitary on each side, broad at the base, and setaceous cuspitate at the apex. Flowers corymbose or umbellate, on the tops of the branches or peduncles. Corollas white.

Sect. I. Eufãra'mea (this section is supposed to contain the true species of the genus). D. C. prod. 4. p. 496.—Farámea, Aubl. guian. 1. p. 102. t. 40. Lam. dict. 2. p. 460. ill. t. 63.—Farámea, Vittm. summ. pl. 1. p. 357. Peduncles terminal, 1-3 together, bearing each a simple umbel of flowers at the apex. Flowers involucrated by caducous bracteas. Stipulas ending in an ann.

1 F. sessili'fóra (Aubl. guian. 1. p. 104. t. 40. f. 2.) umbels terminal, solitary, simple, sessile; calyx 4-toothed.  It. S. Native of Guiana, in the woods called Cauxwoods. Leaves oblate. Flowers white.

Sessile-flowered Farámea. Shrub 7 to 8 feet.

2 F. sertulí'fóra (D. C. prod. 4. p. 496.) peduncles terminal, solitary, nearly terete, bearing a simple umbel of flowers at the apex; calyx truncate.  It. S. Native of Cuba, about the Havana. Branches slender, dichotomous. Leaves oblong, acuminate at both ends.

Garland-bearing Farámea. Shrub.

3 F. trunca'ta (D. C. prod. 4. p. 496.) peduncles terminal by threes, compressed at the apex, bearing each a simple umbel of flowers; calyx truncate.  It. S. Native of French Guiana. Very like the following species, but differs in the calyx being truncate. Corolla marcescent. Fruit pale, but exactly like those of F. odoratissima.

Truncate-calyxed Farámea. Shrub 4 to 5 feet.

4 F. cory'mbosa (Aubl. guian. 1. p. 102. t. 40. f. 1.) peduncles terminal by threes, compressed at the apex, each bearing a simple umbel of flowers; calyx 4-toothed.  It. S. Native of French Guiana, in the woods called Cauxwoods. Lam. ill. t. 63. Flowers white.

Corymbose-flowered Farámea. Shrub 7 to 8 feet.


* Stipulas ending in an ann.

5 F. odoratissima (D. C. prod. 4. p. 496.) leaves oval-oblong, acute at the base, and abruptly acuminate at the apex; stipulas broad, ending in a subdorsal ann; corymbs terminal; limb of calyx very short, truncate, ten times shorter than the tube of the corolla; berry crowned by the very short bluntly 4-toothed limb of the calyx.  It. S. Native of the West Indian islands, as in St. Domingo, Jamaica, Porto-Rico, Guadaloupe, Cayenne, Panama, and probably of Mexico. Plum. ed. B. t. 156. f. 2. P. Browne, Jam. t. 6. f. 1. but not fig. 2.—Coffea occidentalis, Jacq. amer. t. 47. Lin. spec. p. 246. Ixora Americana, Lin. amerc. gen. 5. p. 393. ex Swartz. Tetramérium odoratissimum, Gaertn. fil. carp. 3. p. 90. t. 196. Tetramérium occidentale, Nees and Mart. nov. act. nat. cur. 12. p. 13. Flowers white, sweet-scented, about the size of those of the jasmine; hence it is called jasmine in Jamaica.

Very sweet-scented-flowered Farámea. Ckt. 1793. Sh. 6 ft.

6 F. latifoli'la (D. C. prod. 4. p. 497.) leaves oval, abruptly acuminate; stipulas broad, ending in a subdorsal ann; corymbs terminal; limb of calyx slightly tetragonal, somewhat 4-toothed, 5 times shorter than the tube of the corolla.  It. S. Native of Brazil, in the province of Rio Janeiro. Tetramérium latifolium, Cham. et Schlecht. in Linnaea. 4. p. 30. It differs from the preceding species in the flowers being one-half smaller. This plant is probably also a native of Trinidad and Santa Cruz.

Broad-leaved Farámea. Shrub 6 feet.

7 F. montevide'nsis (D. C. prod. 4. p. 497.) leaves oblong, acuminate at both ends; stipulas broad, ending in a subdorsal ann; corymbs terminal; berries crowned by the limb of the calyx, which is tubularly cup-shaped and subtruncate.  It. S. Native of Brazil, about Monte Video; and of Porto-Rico. Tetramérium montevideënse, Cham. et Schlecht. in Linnaea. 4. p. 29. Flowers white. Leaves and inflorescence almost like those of F. odoratissima; but the limb of the calyx on the fruit is very different.

Monte-Video Farámea. Shrub 4 to 6 feet.

8 F. stipul'acea (D. C. prod. 4. p. 497.) leaves oblong, attenuated at the base, and acute at the apex; stipulas broad at the base, and ending in a dorsal ann at the apex; corymbs terminal; limb of calyx acutely 4-toothed; berry globose, crowned by the short limb of the calyx.  It. S. Native of Brazil, within the tropic. Tetramérium stipulaceum, Cham. et Schlecht. in Linnaea. 4. p. 31. Flowers white. Habit of F. jasminoides, but differs in the dorsal ann to the stipulas.

Stipulaceous Farámea. Shrub 4 to 6 feet.

9 F. corre'lea (D. C. 1. c.) leaves ovate-elliptic, acute at both ends; stipulas dilated at the base, and ending in a short ann at the apex; peduncules axillary, usually 3-flowered; limb of calyx acutely 5-toothed, 6 times shorter than the tube of the corolla.  It. S. Native of Brazil. Tetramérium corroleum, Nees et Mart. nov. act. bonn. 12. p. 12. Peduncles and branches 2-edged. Corolla of an amethyst colour, with lanceolate segments.

Blue-flowered Farámea. Shrub 5 to 6 feet.

10 F. axillari'fóra (D. C. prod. 4. p. 673.) leaves sessile, ovate-oblong, cordate at the base, acuminate at the apex; stipulas ending in a long-awned acumen; branches much compressed; flowers on short pedicels, in fascicled corymbs from the axils of the leaves.  It. S. Native of Brazil, about Bahia, where it was collected by Salzmann, G. Don, etc. Flowers white. Fruit exactly like that of F. odoratissima. Leaves 7-8 inches long, and about 2 broad.

Axillari-flowered Farámea. Shrub 4 to 6 feet.

11 F. guayaquile'nsis (D. C. 1. c.) leaves oblong, acuminate, almost sessile; stipulas oblong, acuminate, and a little awned, permanent: upper ones bifid on both sides; panicle ter-

** Stipulas never ending in an ann.**

12 F. Jasmínóides (D. C. prod. 4. p. 497.) leaves elliptic-oblong, acuminate at both ends; stipulas ovate, large, acutish; corymb terminal; calyx urceolate, with 4 long teeth; berry globose, crowned by the short limb of the calyx. \( \gamma \). S. Native of New Granada, near Ibagué. Tetramérion jasmínóides, H. B. et Kunth, nov. gen. amer. 3. p. 373. t. 287. Coffée flávicans, Wildl. miss. in Rœm. et Schultes, syst. 5. p. 201. Branches tetragonal. Leaves pale green, yellowish beneath. Lobes of corolla one-half shorter than the tube. Flowers white.

Jasmine-like Faramea. Shrub.

13 F. ? sessífiólia (D. C. l. c.) leaves oblong, acuminate, cordate, sessile; stipulas ovate, acuminate subulate; corymb terminal, trichotomous; limb of calyx urceolate, 4-toothed. \( \gamma \). S. Native in woods on the banks of the Orinoco, between May- pure and St. Fernando de Atabapo. Tetramérion sessífió- lium, H. B. et Kunth, nov. gen. amer. 3. p. 374. Issôra sessífi- ólia, Spreng. syst. 1. p. 409. Flowers white. Anthers probably exserted. From the fruit being unknown, it is doubtful whether it belongs to the present genus.

Sessile-leaved Faramea. Shrub.

14 F. multíflóra (A. Rich. in mem. soc. hist. nat. Par. 5. p. 176.) leaves oval-elliptic, acuminate, abruptly periolate; stipulas interolatorial, comate, sheath-formed, acuminate; flowers corymbose, terminal. \( \gamma \). S. Native of French Guiana. Many-flowered Faramea. Shrub.

15 F. calycífolía (A. Rich. l. c.) leaves elliptic, acuminate; stipulas interolatorial, acuminate; flowers spiked; spikes terminal, pedunculate; limb of calyx tubular, large, permanent. \( \gamma \). S. Native of French Guiana. From the calyx being permanent, it does not probably belong to the present genus.

Calyx-flowered Faramea. Shrub.

Sect. III. Farameoides (from faramea, and idea, like; but is meant only as an alteration of the generic name). D. C. prod. 4. p. 498. Panicles thyrsoid, terminal.

16 F. abedescens (D. C. prod. 4. p. 498.) panicle terminal, pedunculate, having its branches bearing umbels of flowers at the apex; calyx truncate. \( \gamma \). S. Native of French Guiana. Branchlets compressedly angular. Leaves oblong, acuminate at both ends, shining on both surfaces, pale green. Stipulas acute, deciduous while young. Peduncles 2-edged, furnished with 3-4 pairs of branches. Panicles white, one-half shorter than the leaves. Corollas elongated, very like those of F. tru- cótía.

Whitish-panicled Faramea. Shrub 4 to 6 feet.

17 F. Martini (D. C. l. c.) panicles terminal, on short peduncles, shorter than the leaves; branches corymbose at the apex; calyx hardly toothed; leaves large, oval; anthers ex- serted at the throat. \( \gamma \). S. Native of Guiana, at Mount Kaw, where it was collected by Martin. Branchlets compressed. Stipulas broad, short, permanent. Leaves glabrous, membranous, attenuated at the base. Lobes of corolla 4, a little longer than the tube. Calyx urceolate. Fruit unknown.

Martin's Faramea. Shrub 4 to 6 feet.

Cult. For culture and propagation see Coffea, p. 584.


Lin. syst. Tetra-Pentándria, Monogynia. Calyx with an obovate-globose tube, and a campanulately tubular 4-5-toothed limb. Corolla tubular, terete, with a 4-5-parted spreading limb, lanceolate acute segments, and a naked throat. Stamens inserted in the middle of the tube; filaments beset with short hairs in the free part; anthers linear, inclosed. Fruit ovoid, striated, fleshy, crowned by the tubular limb of the calyx, containing 2 bony 1-seeded indehiscent nuts, which are flat on the inside, and furnished in the middle. Seed erect. Embryo nearly terete.—A Guiana shrub. Leaves opposite, elliptic. Stipulas fringed. Flowers sessile, umbellate on the tops of the peduncles.

1 S. Guiana'ssis (A. Rich. l. c.) \( \gamma \). S. Native of French Guiana.

Guiana Strempelia. Shrub.

Cult. For culture and propagation see Coffea, p. 584.


Lin. syst. Tetra-Pentándria, Monogynia. Calyx with an ovate, globose or turbinate tube, and a 4-5-toothed limb (f. 107. a.). Corolla tubular, funnel-shaped, with a spreading 4-5-parted limb (f. 107. b.), and oblong lobes. Stamens 4-5, rising from the middle of the tube of the corolla, or from its apex, exerted or inclosed. Style bident at the apex, having the lobes rarely combined. Berry umbilicate (f. 107. b.), naked or crowned, containing 2 1-seeded nuts of the consistence of parchment, which are convex on the outside, and flat inside, and marked by a longitudinal furrow. Embryo erect, in honey albums, with a terete obtuse radicle, and foliaceous cotyledons.—Trees and shrubs. Leaves opposite. Stipulas interolatorial. This genus is probably divisible into several genera, but that has not been attempted on account of specimens of the greater number of the species being rare in European collections.


* Peduncles axillary. Flowers 5-7-cleft, pentandrous or heptandrous.

1 C. Árabica (Lin. spec. p. 245.) leaves oval-oblong, acuminate, glabrous, shining on the upper surface; peduncles axillary, short, aggregate; corolla 5-cleft: anthers exerted; berries ovate. \( \gamma \). S. Native of Arabia Felix and Ethiopia, from whence it has been carried to almost all parts of the world within the tropics. Gärtn. fuct. 1. t. 25. Sims, bot. mag. 1303. Tratt. tab. t. 400. Tuss. ant. t. 18. Delaun. herb. amat. t. 283. Church. ad Steph. med. bot. 4. t. 182. C. laurifólia, Salisb. prod. p. 62.—Juss. act. acat. par. 1715. t. 7. Ellis, mon. 1774. in 4to. Till. pis. t. 32. Pluk. alm. t. 272. f. 1. Alp. egyp. t. 36. Blackw. 4 e 2
RUBIACEÆ.  CLXVIII. COFFEA.

Arabia is always better than that from the West India Islands. In cultivating the coffee in the West Indies, the berries are sown immediately after being gathered, as they are found to retain their vegetative quality only a few weeks. In three months the seeds so sown produce plants fit for transplanting to the final plantation. In the low lands they are planted five feet apart, and in the mountains ten feet or more. In three years the plants will produce a crop, and continue bearing a number of years. The berries are gathered when they are just about to drop.

Qualities and chemical properties.—When the seeds of coffee are roasted, a portion is converted into tannin by the action of heat, and an agreeable aromatic substance is developed, the nature of which has not been ascertained. The same principle is also developed by roasting barley, beans, and many other vegetables, which, on that account, are occasionally employed as substitutes for coffee, and suit some stomachs better. The infusion of unroasted coffee in boiling water is of a yellowish green colour; but the decoction, by continuing the boiling, becomes brown, and turbid on cooling. From experiments made chiefly by Cadet, it appears that coffee contains an aromatic principle, a little oil, gallic acid, mucilage, extractive and bitter principle. Other analyses have been made by chemists. M. Grindel found it to contain cinque acid, and M. Payss has discovered what he has endeavoured to show as a peculiar acid, to which he has given the name of coffee acid. More recently, M. Robiquet is said to have demonstrated another principle, which he names Caffeine. It is in silk-like acicular crystals, bearing a resemblance to Benzoc acid. It liquefies by the aid of a gentle heat; in close vessels it volatilizes, and sublimes in needles. Caffine is neither acid nor alkaline; it furnishes a great quantity of azote; it dissolves with difficulty in ether, but quickly in water and alcohol.

Medical properties and uses.—It is evident that we are indebted to the Arabians for our use of this pleasant beverage, as the first rite of Eastern hospitality is the presentation of a bowl of coffee. In Europe it is said to have been first used in Italy, in the year 1650; and, according to Dulaune, was introduced at the court of Paris, in 1669, by Solomon Aga, ambassador from the Porte. An Armenian, named Pascal, opened the first Café, and Procope the second, in "Rue des Fossés, Saint Germain des Prés." Nearly at the same time coffee was introduced into London.

By some, coffee is supposed to be best suited to the aged; and its abuse, as when taken too strong, is said to impair digestion, instead of promoting it; and it stimulates, heats, and produces watchfulness in certain constitutions. The Mahometans of India, who use a great deal of coffee in the same way as we do, with the exception of combining milk with it, believe it to have the effect of soothing and allaying nervous irritations, and prescribe it to stop the vomiting in cholerous morbus. Dr. Anstis also states, that it is often employed for the same purposes by the Spaniards at Manilla. It is said that Sir John Floyer, during his residence in Lichfield, found great benefit in his own person by the use of coffee in asthma. Sir John confirms its success in a letter to Dr. Percival, "On reading the section of coffee," says he, "in the second volume of your essays, one quality occurred to me which I had observed of that liquid, confirming what you had said of its sedative powers. It is the best abater of periodic asthma that I have seen. The coffee ought to be the best Mocha, newly burnt, and made very strong immediately after grinding it. I have commonly ordered an ounce for one dish, which is to be repeated afresh after the interval of a quarter of an hour, without milk or sugar." Percival's Essays, vol. iii.

As a general palliative, strong coffee is often serviceable in various kinds of headache; and where its own sedative power
is unavailing, it forms one of the best vehicles for the administration of laudanum. It diminishes in some degree the hypnotic power of the latter, but counteracts its distressing secondary effects. When laudanum is intermixed with strong coffee for the cure of many modifications of head-ache, tranquillity and ease are produced, though there may be no sleep; when laudanum, on the contrary, is taken alone, sleep will, perhaps, follow, but is mostly succeeded by nausea and a return of pain. Hence the Turks and Arabians make strong coffee their common vehicle for opium, from its tendency to counteract the narcotic principle of the latter; and on the same account it is plentifully administered after the stomach has been evacuated of its contents, in cases of poisoning by opium.

For common purposes, infusion of coffee is the most agreeable method of preparing it, as the aromatic and volatile principles are dissipated by boiling.

Coffee is named by the Persians Colhua and Coko; by the Turks, Chawba and Cawba; by the Arabians, Cachua, Cawwa, Caffaye, and Cahounah; and by the Egyptians, Elawra. In Germany it is called Arabische Kafferbaun; in Cochín China, Caycaphe.

The Galla, a wandering nation of Africa, in their incursions in Abyssinia, being obliged to traverse immense deserts, and being also desirous of falling on the Abyssinians without warning, that they may be encumbered as little as possible with baggage, carry nothing with them to eat, but coffee roasted till it can be pulverized, and then mixed with butter into balls, and put into a leathern bag: one of these, about the size of a billiard-ball, keeps them, they say, in strength and spirits during a whole day's fatigue, better than a loaf of bread, or a meal of meat.


2 C. Mauritia (Lam. dict. 1. p. 550. ill. t. 160. f. 2.) leaves oval, acute at both ends, reticulately veined; peduncles axillary, solitary, 1-flowered, very short; berries oblong, acute at the base. H. S. Native of the Island of Bourbon, in the woods. C. Arábia β, Willd. spec. 1. p. 974. C. sylvestris, Willd. in Roem. et Schultes, syst. 5. p. 201. 1 Flowers white. This species is known in the Island of Bourbon under the name of Café-Marron, but should not be confounded with the variety of C. Arábia, known in commerce under the name of Café Bourbon, or Bourbon Coffee.

Mauritian Coffee-tree. Shrub 4 to 5 feet.

3 C. Benghalensis (Roxb. Hort. Beng. p. 15. fl. ind. 2. p. 194.) leaves oval-oblong, acuminate at both ends; flowers axillary, rather aggregate, sessile; stipulas undivided, subulate, much acuminate; corolla 5-cleft, with oblong lobes; anthers inclosed. H. S. Native of Bengal, but chiefly about Silhet; and of Nipaul. Roth. nov. spec. 148. Röem. et Schultes, syst. 5. p. 200. Branches so placed as to form a bush of a pyramidal form. Leaves from ovate to oblong, glabrous. Flowers 1-together or more, axillary, white, sweet-scented. Berry black, size of a small cherry. It was for some time much cultivated in Bengal, under the idea of its being the Arabian Coffee; it is now neglected, being of inferior quality, and not productive; however, the number of its flowers entitle it to a conspicuous place in the flower-garden.

Bengal Coffee-tree. Shrub 4 to 6 feet.

4 C. stenophylla; leaves oblong-lanceolate, acuminate; peduncles almost sessile, axillary, 2-3-flowered. H. S. Native of Sierra Leone, where it is cultivated. Flowers white. Berries oblong, black. The seeds of this species are roasted and used as the common coffee, and are even considered superior to it.

Narrow-leaved Coffee-tree. Shrub 4 to 6 feet.

5 C. hirsutus; leaves ovate, acuminate, on short pedioles; young branches, petioles, and veins of leaves hairy; peduncles axillary, 3-flowered. H. S. Native of Sierra Leone in the low lands. Flowers white.

Hairy Coffee-tree. Shrub 4 to 5 feet.

6 C. micocaera (D. C. prod. 4. p. 499.) leaves elliptic-oblong, short-acuminate, and are, as well as the branches, quite glabrous; flowers in fascicles along the branches, after the falling of the leaves, and therefore they appear as if they were disposed in interrupted racemes, but in fact the flowers are merely in fascicles from the axils of the fallen leaves; fruit elliptic, 3 times longer than their pedicels, and crowned by the cup-shaped limb of the calyx. H. S. Native of Africa in Casamance, in woods, at Cape Rouge, where it was collected by Ferretto and Leprieur. Leaves 2½ inches long, and 8-9 lines broad. Stipulas solitary, undivided, acuminate subulate, deciduous. Flowers white.

Small-fruited Coffee-tree. Shrub 4 to 5 feet.

7 C. laurina (Smeath. in herb. L'Her. et D. C. prod. 4. p. 499.) leaves oblong-lanceolate, mucronate, cuneated at the base, coriaceous, quite glabrous; racemes axillary, crowded with flowers, much shorter than the leaves; corolla 5-cleft, with a villous throat; anthers exerted, but rather shorter than the lobes of the corolla; berries globose. H. S. Native of Sierra Leone. Poir. suppl. 2. p. 14. Leaves yellowish in the dried state. Calyx truncate. Corollas white.

Laurel-like Coffee-tree. Shrub 4 to 5 feet.

8 C. stipulacea (D. C. prod. 4. p. 492.) leaves elliptic or oblong, petiolate, acuminate at both ends; stipulas foliaceous, oblong, acute, striated lengthwise, deciduous; peduncles axillary, very long, corymbose at the apex, trichotomous. H. S. Native of French Guiana, where it was collected by Patris. Limb of calyx obscurely but acutely 5-toothed. Flowers unknown. Berries ovate, not crowned. Peduncles 6 inches long.

Stipulaceous Coffee-tree. Shrub 4 to 6 feet.

9 C. pedunculata (Roxb. fl. ind. 2. p. 195.) leaves elliptic, almost sessile, smooth; peduncles terminal and axillary, in fascicles, long, 1-flowered; tube of the corolla slender, smooth; stamens inclosed. H. S. Native of the Moluccas.

Pedunculated Coffee-tree. Shrub.

** Peduncles axillary. Flowers tetramerous and tetradrous.

—Ixora species, Spreng.

10 C. Guianensis (Aubl. guian. 1. p. 150. t. 57.) leaves oval-oblong, bluntly acuminate, quite glabrous; peduncles axillary, aggregate, very short, 1-flowered; corollas 4-cleft, with acute lobes; anthers inclosed; berries globose, small. H. S. Native of French Guiana, and of the Island of Trinidad, ex Sieb. fl. trin. no. 44. Ixora Guianensis, Spreng. syst. 1. p. 409. Flowers small, white. Berries violaceous.

Guiana Coffee-tree. Shrub 1 to 3 feet.

11 C. rosa (Mee. et Sesse. fl. mex. Icon. ind. ex D. C. prod. 4. p. 499.) leaves oval-oblong, acuminate at both ends, glabrous; peduncles axillary, 5-flowered, much shorter than the leaves; corollas 4-cleft, with revolute lobes; anthers exerted; berries globose. H. S. Native of Mexico. Corollas rose-coloured. Berries reddish, size of a pea.

Rose-coloured-flowered Coffee-tree. Shrub 4 to 6 feet.

12 C. obovata (Cham. et Schlecht. in Lunaea, 6. p. 412.) glabrous; leaves obovate, cuneate, acuminate, acute, feather-veined; cymes axillary, almost sessile, aggregate, short, manyflowered; stipulas ovate-triangular, caducous. H. S. Native of Mexico, in shady places, near Masantla. Leaves half a foot long. Tube of the calyx ovate, with short acute teeth. Corolla with a short tube and a naked throat. Anthers linear, exerted.
Oboate-leaved Coffee-tree. Shrub.

13 C. lanceolata (Cham. et Schlecht. in Linnae. 6. p. 412.) stems, petioles, nerves, and primary veins of leaves underneath downy; leaves lanceolate, glanscent beneath, feathered-veined; cymes axillary, usually solitary, few-flowered, on short peduncles; stipulas small, ovate-triangular, caducous. S. Native of Mexico, near Jalapa. Leaves 2-3 inches long, acuminate. Calyx with a clavate tube, and small acute teeth. Anthers linear, exerted.


14 C. tetrasperma (Roxb. fl. ind. 2. p. 193.) leaves broad-lanceolate, acute, shining; stipulas bifid; peduncles axillary and terminal, in fascicles, long, slender, 1-flowered; corollas usually 4-cleft, with a long slender tube; anthers inclosed; berries globose. S. Native of Sinhet and Chittagong, and the whole east border of Bengal. Leaves 4-5 inches long, and hardly 2 broad. Corolla with a 4-5-cleft border. Stigmas 4-5. Berries size of a small cherry, blackish-purple when ripe, 1 or 2-celled. An erect slender-branched Shrub.

Tetradrous-flowered Coffee-tree. Shrub.

15 C. densiflora (Blum. bijdr. p. 965.) leaves oval-oblong, acuminate, clothed with fine down on the veins beneath; flowers crowded, axillary; corollas 5-cleft. S. Native of Java, on Mount Salak. There are varieties of this with smaller and larger flowers.

Dansi-flowered Coffee-tree. Shrub.

16 C. angustifolia (Roxb. fl. ind. 2. p. 195.) leaves lanceolate, stiff, shining; panicles axillary; throat of corolla bearded; lobes of corolla linear, longer than the tube, but equal to the anthers, which are filiform and exerted. S. Native of Pigeon Island, one of the Malay Archipelago.

Narrow-leaved Coffee-tree. Shrub.

17 C. racemosa (Ruiz et Pav. fl. per. 2. p. 64. t. 214. f. a. but not of Lour.) leaves oblong-oval, acuminate, glabrous; stipulas bifid; racemes axillary and terminal, drooping while in flower, but erect in the fruit-bearing state; flowers almost sessile, 5-cleft; anthers exerted; berry oval. S. Native of Peru, in groves at Pati and Macora, where it is called Café. Rüdigea racemosa, Spreng. syst. 1. p. 735. Flowers white.

Racemose Coffee-tree. Shrub 4 to 6 feet.

18 C. zanquebar (Lour. corh. p. 145.) leaves ovate-lanceolate, glabrous; peduncles axillary, many-together, short, 1-flowered; corollas 6-7-cleft; berries oblong-ovate, angularly nerved. S. Native of Africa, on the coast of Zanquebar, in woods. Amajuta Africana, Spreng. syst. 2. p. 126. Flowers white. Berries red. This species is cultivated near Mozambique in gardens along with C. Arábica, and where the seeds are used as a substitute for the common coffee.

Zanquebar Coffee-tree. Shrub 5 to 6 feet.

19 C. indica (Poir. suppl. 2. p. 14.) leaves ovate-oblong, acuminate, glabrous; stipulas very short, undivided; panicles short, divaricate, terminal; pedicels elongated; fruit small, obovate, not crowned by the calyx. S. Native of Java. Flowers unknown.

Indian Coffee-tree. Shrub.

...Panicles terminal. Flowers 4-5-parted, tetradrous or pentandrous.

20 C. paniculata (Aubl. guian. 1. p. 152. t. 58.) leaves ovate-oblong, acuminate, shining; branches tetragonal; stipulas acute, caducous; panicles terminal, divaricate; flowers 4-cleft; anthers inclosed. S. Native of Guiana, in woods. Tetramére paniculatum, Spreng. syst. 1. p. 109. Flowers white, sweet-scented. Berries ovate-globose, bluish, containing 2 seeds or nuts, one of which is usually abortive. Paniced-flowered Coffee-tree. Clt. 1822. Sh. 6 to 8 feet.


22 C. semisessilis (Colbr. in Roxb. fl. ind. 2. p. 195.) leaves oblong-lanceolate, acuminated; coryombs terminal. S. Native of Bengal, in Silhet. Berries purple, size of large peas. Habit of Leûra.


Sect. II. Hoûnia (named after M. Van Horn, who, in the year 1690, carried coffee from Arabia to Batavia, and in the year 1710 to the gardens of Amsterdam). D. C. prod. 4. p. 500. Tube of calyx increasing after the flowers have fallen, and crowning the berry by a neck, having the teeth almost obsolete. Flowers 5-cleft. Stigma bifid. Throat of corolla glabrous. Berry ovate or globose, usually 1-seeded from abortion.—Shrubs, natives of Peru. Inflorescence axillary or terminal. Peduncles solitary on both sides, unilobed, never toothed or ciliated.

23 C. subspinosus (Ruiz et Pav. fl. per. 2. p. 64. t. 215. lower figure,) leaves glabrous, coriaceous, sessile, oblong-lanceolate, acuminated, excavated at the base; stipulas ovate; racemes axillary, trichotomous, shorter than the leaves. S. Native of Peru, on the Andes in forests at Chincho, Quebrada, and Pati. Coffea macrophylla, Dietr. nachtr. 2. p. 544. Leaves a foot long, shining above. Peduncles quadrangular. Berries ovate, at first red, but at last becoming purplish, ovate, 1-seeded, size of cherries. Probably a species of Forâmea.

Sessile-flowered Coffee-tree. Shrub 5 to 6 feet.

24 C. umbelellata (Ruiz et Pav. fl. per. 2. p. 64. t. 215. upper figure,) leaves glabrous, coriaceous, petiolate, oblong, acuminated, nerved by transverse veins; stipulas roundish; peduncles terminal, usually by threes; flowers crowded, umbellate, involucrated. S. Native of Peru, on the Andes in forests. Branches dichomorous, rather tetragonal. Involucrum 4-leaved, and involucels 7-leaved. Berries, red, ovate.

Umbellate-flowered Coffee-tree. Shrub 10 to 12 feet.

25 C. ? cumina (Ruiz et Pav. fl. per. 2. p. 64. t. 214. f. b.) leaves petiolate, oval, acuminated, glabrous, villous in the axils of the veins; stipulas ovate, deciduous; racemes terminal, few-flowered; flowers crowded. S. Native of Peru, on the Andes in forests. Branches tetragonal, rather compressed. Berries white, 5-cleft (ex descript.), with revolt segments. Berries ovate, red, 1-seeded, size of cherries, blurt at the apex, crowned by the tubular limb of the calyx.

Acuminated-leaved Coffee-tree. Shrub 5 to 6 feet.

Sect. III. Pancra'sia (named after M. Pancras, who first transmitted the coffee-tree from the gardens of Amsterdam to those of Paris, in the year 1713). D. C. prod. 4. p. 501. Throat of corolla bearded. Berries crowned by the vestiges of the calyx. Racemes or corymbs terminal. Stipulas usually fringed or ciliately toothed, as in Rüdigea, but differs from that genus in the calyx not being parted, and in the lobes of the corolla not being horned. Flowers 5-cleft.—Glabrous Peruvian shrubs.

...Stipulas ciliated.

26 C. ciliata (Ruiz et Pav. fl. per. 2. p. 65. t. 216. f. a.) leaves oblong, acuminated; stipulas truncate, ciliated; racemes subpudicled, terminal; flowers aggregate, sessile, 4-5-cleft;
anthers exerted. ß. S. Native of Peru, in forests on the Andes. Rúdgea ciliatá, Spreng. syst. 1. p. 755. Branches thickened at the nodi. Bracteas small, subulate, at the ramifications of the panicle. Corollas white, with reflexed segments. Berries red, globose. Perhaps the same as C. ciliatá of Brazil, which was collected on the road to Felisbert, by the Prince de Neuwied, but according to Nees and Martius, in nov. act. bonn. 12. p. 13., it differs from the Peruvian plant in the racemes being shorter.


Pitted-leaved Coffee-tree. Shrub. 28 C. MEXICANÁ (D. C. prod. 4. p. 501.) leaves oblong, acuminate, reticulately veined beneath; stipulas crested; corynbs terminal, trîflíd; limb of calyx truncate, obtuse; ß. S. Native of Mexico. Rúdgea Mexicaná, Bartl. in herb. Hanke. Branches dichotomous. Fruit dry, indehiscent, chartaceous, the nuts separating at length from each other. Seeds hemispherical, having a very narrow furrow in front. It differs from Rúd-gea in the limb of the calyx not being 5-parted, but quite entire. Mexican Coffee-tree. Shrub.


Shining-leaved Coffee-tree. Shrub 5 to 6 feet. 30 C. laurifó'lia (H. B. et Kunth, nov. gen. amer. 3. p. 372. but not of Salisb.) leaves oblong, somewhat acuminate, coriaceous, shining; stipulas ciliately multifid; corynbs terminal; berries elliptic. ß. S. Native of South America, in shady humid places at the Missions of the Orijono. Coffea coriáceas, Willd. mss. in Rœm. et Schultes. syst. 5. p. 201. ex Kunth. Corollas and stamens unknown. Perhaps a species of Psychotria, ex A. Rich.?


* * Stipulas undivided or bidentate, but never ciliated.

32 C. longífo'lia (Ruiz et Pav. fl. per. 2. p. 66. t. 218. f. a.) leaves oblong-lanceolate, redundantly undulated; stipulas ovate, undivided; panicles terminal; anthers exerted. ß. S. Native of Peru, in forests on the Andes. Leaves shining above, a foot long. Corolla white with reflexed segments. Berries globose, red.

Long-leaved Coffee-tree. Shrub. 33 C. microcár'pa (Ruiz et Pav. fl. per. 2. p. 66. t. 218. f. b.) leaves lanceolate, acute; stipulas bidentate on both sides; cymes axillary and terminal, spreading; anthers hardly exerted. ß. S. Native of Peru, on the Andes in forests. Branches a little compressed at the apex. Bracteas subulate. Corollas white, downy on the outside. Berries reddish, globose, size of black pepper. Perhaps belonging to a different section.


Sect. IV. STRAU'SSIA (named after Laurence Strauss, who was the first, in 1666, to recommend coffee as a beverage). D. C. prod. 4. p. 502. Berries turbinate or acuminate at the base. Stipulas ovate, deciduous, ciliated on the lower margin of the cicaetra. Flowers 4-6-cleft. Stamens 4-6. Stigma bifid. Berries globose or oval.—Shrubs, natives of the islands in the South sea. Cymes terminal.

36 C. luzón'ie'sis (Cham. et Schlecht. in Linnaea. 4. p. 32.) leaves lanceolate, acute at both ends, with rather reflexed margins; stipulas ovate-oblong, rather scarious, deciduous, with the cicaetrae rather ciliated at the margins; cymes terminal, sessile, contracted while young; flowers 4-6-cleft; throat of corolla bearded. ß. S. Native of the Island of Luzon. Corolla white, glabrous. Anthers exerted a little. The central flower is 5-cleft, and the rest either 4 or 5-cleft. Berries almost globose, acute at the base, sometimes 1-seeded by abortion. Branches fistular.

Luzon Coffee-tree. Shrub 4 to 6 feet. 37 C. kadua'na (Cham. et Schlecht. in Linnaea. 4. p. 33.) leaves cuneate-obovate, somewhat scrobiculate in the axils of the veins, with reflexed margins, usually clothed with rufescent down beneath; stipulas ovate, acute, caducuous, the inner margins of the cicaetrae ciliated; cymes terminal, on long peduncles, of 5 rays, 4 of which are disposed in a whorl around the other, which is central; corolla 5-cleft, with a naked throat. ß. S. Native of the Sandwich Islands, particularly in O-Wahu. Berry elliptic, attenuated at the base, rarely 1-seeded by abortion. Branches compressed. Mr. Arnott remarked, that the segments of the calyx are not ciliated as stated by the authors, although the bracteas are.

Kadua's Coffee-tree. Shrub 4 to 5 feet. 38 C. chammi'so'nis (Hook. et Arn. in Beech. voy. pt. bot. p. 86.) leaves elliptic-oblong, scrobiculate in the axils of the veins, with reflexed margins, quite glabrous on both surfaces; stipulas ovate, acute, caducuous, having the inner margins of the cicaetrae glabrous; cymes on long peduncles of 5 rays, which are disposed in a whorl; corolla 5-cleft, with a naked throat. ß. S. Native of the Sandwich Islands. Very like the preceding.

Chamissonis's Coffee-tree. Shrub 4 to 6 feet. 39 C. Marinará'na (Cham. et Schlecht. in Linnaea. 4. p. 35.) leaves elliptic, acute at both ends, scrobiculate in the axils of the veins; stipulas ovate, deciduous, with the inner margins of the cicaetrae ciliated; cymes terminal, pedunculate, with the branchlets decussate; corolla 5-cleft, with a bearded throat. ß. S.
Native of the Island of O-Wahu, in forests on the mountains. Branches and branchlets of panicle compressed.

Cult. All the species of Coffea thrive well in a mixture of turfy loam, turfy peat, and sand. They require to be watered a good deal, and to have plenty of pot-room to thrive well. Ripe cuttings strike root freely in sand under a head-glass in a moist heat; and the young plants so raised, produce flowers and fruit more readily than those raised from seed. As the plants are apt to be infested by insects, particularly the mealy bug, they should be examined often, and the insects rubbed off with a brush, otherwise the plants will look unsightly.


Lin. syst. Pentandria, Monogynia. Calyx with an ovate-globose tube, and a 5-parted limb; lobes acute. Corolla with a long slender terete tube, 5 linear spreadingly recurved segments, which are hooked on the back and acute, and a naked throat. Anthers sessile, within the throat, inclosed. Stigma bilamellate. Fruit 2-seeded, 2-seeded.—Trees or shrubs, natives of Guiana. Branchlets and petioles clothed with cinereous down. Leaves opposite, large, smoothish. Stipulas interpetiolar, large, ovate, fringed, deciduous. Panicles terminal, dense, bracteolate, with the branches opposite. Flowers blackish in the dried state, but most probably white in the recent state. Fruit not sufficiently known.

1 R. lanceolata (Salisb. l. c. t. 18.) leaves lanceolate, acuminate; tube of corolla 10 times longer than the lobes of the calyx. h. S. Native of French Guiana. Leaves 10 inches long, and about 3 broad. Corolla downy outside.

Lance-leaved Rudgea. Shrub or tree.

2 R. ovalifolia (Salisb. l. c. t. 19.) leaves oval, acuminate; tube of corolla 6 times longer than the lobes of the calyx. h. S. Native of French Guiana. Leaves 4-5 inches broad, and 7-8 long. Corolla downy outside.

Oval-leaved Rudgea. Shrub or tree.

Cult. See Coffea above for culture and propagation.

CLXIX. ANTHERURA (from anthera, anther, and ovum, ovum, a tail; the anthers end in a long tail each). Lour. coh. p. 144. D. C. prodr. 4. p. 503.—Psychotria species, Wild. Poir.

Lin. syst. Pentandria, Monogynia. All as in Psychotria, but the corolla is rotate and 5-parted; the anthers sagittate at the base, and furnished with a long reflexed tail at the apex; the style subulate, and longer than the corolla, and the stigma simple.—A glabrous shrub, with reddish diffuse branches. Leaves opposite, ovate-lanceolate, on short pedioles. Panicles terminal, erect, loose, racemose. Flowers white, with red filaments. Berries ovate, brownish red. Stipulas unknown.


Red-branched Anthurum. Shrub 5 feet.

Cult. For culture and propagation see Coffea above.


Lin. syst. Pentandria, Monogynia. Calyx with an ovate tube, and a small 5-toothed limb. Corolla oblong, rather funnel-shaped, with 5 spreading acute lobes, and a naked throat. Anthers 5, oblong, inclosed. Stigma bilamellate. Berry ovate, umbilicate, containing 2 1-seeded nuts, which are flat inside, and convex outside.—Glabrous shrubs, natives of Guiana. Leaves oval, acute, on short pedioles. Stipulas solitary on both sides. Peduncles axillary, 2-6-flowered, shorter than the pedicels. Flowers small, white. Bracteoles 2 under each flower.—Allied to Psychotria, but differs in the berries not being ribbed. Perhaps the species of Psychotria with axillary peduncles ought to be joined to this genus.


Broad-leaved Ronabia. Shrub 2 to 3 feet.


Erect Ronabia. Shrub 1 to 2 feet.

3 R. ? Myrodenron (A. Rich. in mem. soc. hist. nat. 5. p. 270.) leaves linear-lanceolate, very acute, petiolar; flowers disposed in few-flowered terminal corymb; fruit didymous, hardly umbilicate. h. S. Native of French Guiana. Flowers white.

Morinda-like Ronabia. Shrub.

4 R. ? Morindaoides (A. Rich. l. c.) leaves elliptic, acuminate, petiolar; flowers small, crowded into many terminal pedunculate pea-formed heads; fruit pea-formed, rather umbilicate at the apex; seeds chinky outside. h. S. Native of French Guiana. Flowers white.

Morinda-like Ronabia. Shrub.

5 R. ? Didymocarpus (A. Rich. l. c.) leaves elliptic, acuminate, on short pedioles; stipulas conuate intrapietal truncate, furnished each with 2 bristles; flowers disposed in a terminal cyme; fruit didymous, umbilicatated by a terminal dot. h. S. Native of French Guiana. This and the two preceding are very doubtful species of Ronabea, from the flowers being terminal, and ought perhaps on that account to be joined with Psychotria.

Twin-fruited Ronabia. Shrub.

Cult. For culture and propagation see Coffea above.

CLXXI. PSYCHOTRIA (said to be from psyche, psyche, life; in allusion to the powerful medicinal qualities of P. emetica, or as others say from ψυχοπόρος, psychrophor, an ancient name for an herb loving shade). Lin. gen. no. 229. H. B. et Kuhn, nov. gen. amer. 3. p. 354. D. C. prodr. 4. p. 504.—Psychotropium, F. Browne, jard.—Psychotria species, Juss. Lam. Wild.—Psychotria and Mapoquira, A. Rich.—Psychotria Simira and Mapoquira, Aubl. Lin. syst. Pentandria, Monogynia. Calyx with an ovate tube, and a short 5-lobed 5-toothed or nearly entire limb. Corolla short, funnel-shaped, 5-cleft, regular; limb spreading or reflexed; throat bearded or glabrous. Stamens 5; anthers exerted or inclosed in the throat. Stigma bifid. Berry drupaceous, crowned by the limb of the calyx, furnished with 10 blunt ribs in the dried state, containing 2 1-seeded chartaceous coriaceous ribbed pyrenae. Seed erect, with cartilaginous albumen, and a small basilar embryo.—Small trees or shrubs, rarely
herbs, natives within the tropics. Leaves opposite, petiolate. Stipulas variable. Peduncles sometimes axillary, but usually terminal. Flowers disposed in panicles or corymb, rarely tetramerous, but almost always pentameros; sometimes, however, there are tetramerous and pentameros flowers to be found at the same time, and on the same plant. The species are very numerous and truly intricate, therefore difficult to define.

§ 1. Peduncles axillary.—Perhaps all the species belonging to the present section belong to the genus Ronaña.

* Species natives of South America.

1 P. exsul'sa (H. B. et Kunth, nov. gen. amer. 3. p. 355. t. 281.) arboresous; branchlets terete, downy; leaves oblong, acuminate, narrowed at the base, membranous, glabrous; stipulas deciduous; peduncles axillary, few-flowered; flowers tetramerous and tetrads. $. Native of Mexico, near Xalapapa. Corolla white, glabrous: with the lobes oblong, and longer than the tube. Drupe globose, red, 2-celled; cells 1-seeded; ovula erect.

Tall Psychotria. Tree tall.


Emetic Psychotria or Spanish American Ipecacuana. Sl. 1 to 1 1/2 foot.

3 P. hi'rra (Willd. in Ræm. et Schultes, syst. 5. p. 191.) branches, peduncles, petioles, and under side of leaves hairy; leaves obovate-oblong, acuminate at both ends; stipulas ovate, obtuse; peduncles axillary, 3-flowered. $. Native of New Granada, on Mount Quindiiu. The rest unknown. Perhaps a variety of P. ryse'scens.

Hairv Psychotria. Shrub.

4 P. macrop'hyl'la (Ruiz et Pav. fl. per. 2. p. 56. t. 202. f. a.) plant herbaceous, glabrous; branches terete; leaves oval-lanceolate, acuminate, large, membranous; stipulas broad-ovate, unidentate, short-acuminate; panicles axillary, on short peduncles, with opposite dichotomous branches; fruit ovai. $. Native of Peru, in forests on the Andes. Flowers small, sessile, white. Fruit of an obscure violaceous colour. Leaves a foot long. Stipulas beset with glands inside at the base.

Long-leaved Psychotria. Pl. 7 to 8 feet.


6 P. uli'i'no'sa (Swartz. prod. p. 43. fl. ind. occ. p. 421.) plant subherbaceous, simple, erect, glabrous; leaves lanceolate-oblong, acuminate, shining; stipulas connate, acute, convex; cymes pedunculate, tripartite, opposite in the axis of the upper leaves; flowers sessile; corolla with a villous throat; berries spherical; seeds crested on the outside. $. Native of Jamaica, in low rather humid parts of the mountains. P. Browne, jan. p. 160. no. 1 ? Root long, creeping. Berries scarlet, compressed in the dried state. Flowers pale red.

Bog Psychotria. Pl. 2 to 3 feet.

7 P. le'vis (D. C. prod. 4. p. 505.) glabrous; leaves oval, acute at the base, and ending in a short cuspitate point at the apex, smooth above, almost nerveless; stipulas thick, with a reflexed accumen; peduncles axillary, compressed, shorter than the leaves, trifid at the apex, and each of the branchlets bearing crowded sessile flowers; fruit nearly globose, not crowned. $. Native of Porto-Rico, where it was collected by Bertero. P. Physot'icea, Spreng. In herb. Balb. And probably of Poir. Seeds compressed. Ribs of fruit thick, distant.

Smooth Psychotria. Shrub.

8 P. hoo'kerii shrubby, glabrous, branches tetragonal; leaves lanceolate, tapering into the short petioles, coriaceous and membranous, with finely reflexed margins, pale and reticulated beneath; stipulas ovate, acute, deciduous; peduncles axillary, short; flowers on short pedicels, bracteate at the base; bracteae small, convoluted, toothed; flowers dioecious; fruit ovate, crowned by the limb of the calyx, which is tubular, and minutely 5-toothed at the apex. $. G. Native of Juan Fernandez. Hippotis triflora, Bertero, in ann. des. scienc. nat. 21. p. 348. but not of R. and Pav. P. triflora, Hook. et Arn. in bot. misc. 3. p. 359. but not of Schum. Fruit a drupaceous berry, nearly half an inch long, inclosing 2 chartaceous pyrenes.

Hooker's Psychotria. Shrub 3 to 5 feet.

9 P. pyrif'o'lia (Hook. et Arn. in bot. misc. 3. p. 360.) arboresous, glabrous; branches obscurely tetragonal; leaves broad-ovate or oblong, on long petioles, with scarcely siniated finely reflexed margins, coriaceous and membranous, paler beneath and reticulated: stipulas broad-ovate, acute, deciduous; peduncles axillary, 3-flowered; drupe turbinate, crowned by the erect acuminate teeth of the calyx. $. G. Native of Juan Fernandez, where it is called Peralillo according to Bertero. Hippotis pyrifolia, Bertero, mss. Bertero thinks it may only be a variety of the preceding species, but it is much larger; he did not meet with the flower; but if its structure prove to be the same as the other, both merit being raised to the rank of a genus according to Arnott.

Pear-leaved Psychotria. Shrub 4 to 6 feet.

10 P. aox'a'na (D. C. prod. 4. p. 505.) leaves narrow, oblong, attenuated at both ends, shining above, hairy beneath, and bearded on the mid-rib on both surfaces; stipulas acutely bidentate; peduncles axillary, coriaceous at the apex, downy; flowers crowded on the tops of the branches of the peduncles; fruit nearly globose. $. Native of St. Domingo. Nerves of leaves yellowish. Leaves and branchlets crowded. Flowers downy outside when young. Berries glabrous. Perhaps sufficiently distinct from the next species.

Kindred Psychotria. Shrub.

11 P. neuro'tricha (D. C. 1. c.) leaves elliptic-oblong, acuminate at both ends, glabrous, except the middle nerve, which is beset with a series of hairs on both surfaces; stipulas acutely bidentate, permanent; panicles axillary, rather deflexed, racemos; and rather pilose; flowers sessile, crowded on the tops of the lateral short branches of the panicle; fruit subobovate. $. Native of Porto-Rico. Bracteae broad, ovate, permanent, under the flowers. Berries glabrous. Flowers unknown.

Hairv-nerved-leaved Psychotria. Shrub.

* * * Species natives of Africa.

12 P. trifl'ora (Schum. pl. guin. p. 108.) shrubby; branches brachiate; branchlets rather tetragonal, pilose; leaves ovate, 4 F.
bluntly acuminated, downy beneath; stipulas reniformly cordate, acute, entire; peduncles very short, axillary, 3-flowered. | S. Native of Guinea. Flowers white.

**Three-flowered Psychotria.** Shrub 3 to 4 feet.

13 P. multiformis (Schum. pl. guin. p. 108.) plant shrubby, decumbent or scandent, quite glabrous; branchlets rather tetragonal; leaves oblong-ovate, attenuated at the apex, on short petioles; stipules entire, acuminate; panicles axillary, subcapitate; peduncles length of the pedioles. | S. Native of Guinea, at Asiana. Corolla white, downy inside.

**Many-flowered Psychotria.** Shrub decumbent.

14 P. umbellata (Schum. pl. guin. p. 108.) shrub much branched, glabrous; branchlets alternately compressed; leaves hardly petiolate, lanceolate; stipulas acuminate, cleft at the apex, deciduous; peduncles axillary, angular, trifid at the apex, umbelliferous; berries globose, umbilicate at the apex. | S. Native of Guinea. Leaves 2-4 inches long. Peduncles 2 inches long. Corolla white.

**Umbrallate-flowered Psychotria.** Shrub 3 to 4 feet.

15 P. kollyi (Schum. pl. guin. p. 110.) shrubby, glabrous; branchlets compressed; leaves petiolate, ovate-elliptic, acutish, of a different colour beneath; stipulas ovate, acutish; coryms axillary and terminal, fastigiate; tube of corolla cylindrical. | S. Native of Guinea, where it is called *Kolly-Tjo* by the natives.

**Kolly-Tjo Psychotria.** Shrub 3 to 4 feet.

16 P. ovella (Schum. pl. guin. p. 111.) plant herbaceous, creeping; petioles elongated, rather hairy at the apex; leaves oblong, cordate, obtuse, glabrous; stipulas ovate, acutish; peduncles almost axillary, usually 3-flowered; flowers girded by a foliaceous 4-leaved involucre. | S. Native of Guinea, at Aquapim.

**Enrobed Psychotria.** Pl. creeping.

**Species natives of Asia.**

17 P. philippensis (Cham. et Schlecht. in Linn.ae. 4. p. 21.) glabrous and resinous; branchlets tetragonal; leaves obovate, very blunt, petiolate, coriaceous; stipulas very short, intrafoliaceous, permanent; cymes opposite, axillary or supra-axillary, 3 times shorter than the leaves, dichotomous; ovary cylindrical, crowned by the truncate limb of the calyx. | S. Native of the Island of Luzon, about Tierra Alta by the sea side.

**Philippine Psychotria.** Shrub.

§ 2. Peduncles terminal.

**Species natives of Peru.**

18 P. reticulata (Ruiz et Pav. 2. p. 56. t. 121. f. b.) plant herbaceous, downy; branchlets tetragonal, glabrous; leaves ovate-lanceolate, acuminate, reticulated veined, rather coriaceous; stipulas subconcrete at the base, bident beyond the middle, with the lobes linear-lanceolate and acuminate; panicles terminal, longer than the leaves, with opposite spreading hairy-velvety branches, and crowded flowers. | S. Native of Peru, on the Andes in groves. Leaves a foot long, downy beneath, and having the nerves purplish. Corolla small, yellow, downy outside, with a villous throat.

**Reticulated-leaved Psychotria.** Pl. 7 to 8 feet.

19 P. acutiflora (D. C. prod. 4. p. 506.) leaves oblong, acuminate, ciliated, downy beneath, rather searibrous above, clothed with hairyomentum on the mid-rib on both surfaces, as well as the branchlets; panicles terminal, erect, rather hairy, longer than the leaves, with cymose bifid branches; segments of corolla mucronate cuspitate. | S. Native of Guayaquil, where it was collected by Henke. Guettardia acutiflora, Barb. in herb. Hænke. Nearly allied to *P. deglazii*. Stipulas connate, sheathing, ending each in a sublanceolate acumen.

**Acute-flowered Psychotria.** Shrub.

20 P. pilosa (Ruiz et Pav. fl. per. 2. p. 60. t. 208. f. a.) suffruticose, pilose; branches tetragonal; leaves oblong, acuminate at both ends; stipulas bifid, with lanceolate acute lobes, which are about the length of the pedioles; panicles short, terminal, on short peduncles, with opposite branches; bracteae lanceolate, acute, ciliated; teeth of calyx acute. | S. Native of Peru, on the Andes in humid parts of forests. Leaves 4 inches long. Inflorescence as in *Aspœra*. Bracteae bluish. Peduncles hairy. Berries blue, about the size of peas.

**Pilose Psychotria.** Shrub 2 feet.

21 P. cymosa (Ruiz et Pav. fl. per. 2. p. 59. t. 206. f. b.) suffruticose, glabrous; branches compressedly tetragonal; leaves oblong-lanceolate, acute, shining above; stipulas bipartite, with the lobes linear-subulate and distant; cymes terminal, on short peduncles, of 5 rays; segments of the calyx long, subulate; tube of corolla villous at the base; ovaries ovate. | S. Native of Peru, in groves on the Andes. Leaves 6 inches long. Peduncles compressed. Corolla purplish. Berries violaceous. Calyx almost as in *Geœphila*.

**Cymose-flowered Psychotria.** Shrub 3 to 4 feet.

22 P. magnollefolia (H. B. et Kunth, nov. gen. amer. 3. p. 360. but not of Willd.) glabrous; branchlets compressed; leaves elliptic, blunting at both ends, rather membranous; stipulas oblong, obtuse, length of the pedioles; cymes pedunculate, of 4 spreading rays; flowers sessile, usually by threes. | S. Native about Quito. Fruit unknown. Said to be allied to *P. ardisiefolia*. Leaves 7-8 inches long and 4-5 broad, on petioles 8-9 lines long.

**Magnolia-leaved Psychotria.** Shrub 4 to 6 feet.

23 P. ollerosa (H. B. et Kunth, nov. gen. amer. 3. p. 362.) glabrous; branchlets compressed; leaves oblong or ob-ovate-oblong, acute, narrowed at the base, membranous; stipulas lanceolate, acuminate, ciliated; peduncles pedunculate, very simple, spreading; flowers disposed in verticillate heaps, sessile; fruit nearly globose. | S. Native of Peru. Said to be allied to *P. ardisiefolia*, but the inflorescence is different. Sprengel asserts this species to be a native of New Granada and Brazil, but without giving any authority for so stating.

**Hearted-flowered Psychotria.** Shrub.

24 P. ruguosa (H. B. et Kunth, nov. gen. amer. 3. p. 553.) glabrous; branches compressed; leaves lanceolate, long-acuminated, rather coriaceous, narrowed at the base, a little wrinkled, foveolate in the axils of the veins beneath; stipulas lanceolate, acuminate; peduncles pedunculate, having the lower branches 4 in a whorl, and spreading; fruit nearly globose, didymous. | S. Native of the temperate parts of Peru.

**Wrinkled-leaved Psychotria.** Shrub.

25 P. viridis (Ruiz et Pav. fl. per. 2. p. 61. t. 210. f. b.) glabrous; branchlets somewhat tetragonal; leaves oblong, acuminate, foveolate in the axils of the veins beneath the base; stipulas connate, lanceolate, caduceous, one-half longer than the petioles; panicles pedunculate, terminal, with opposite branches; flowers crowded, sessile; berry globose. | S. Native of Peru, in groves on the Andes. Paliçura viridis, Rom. et Schultes, syst. 5. p. 195. Corollas small, green, with a hairy throat. Anthéra inserted. This has nothing to do with *Paliœura tinctoria*, with which it has been confounded by Sprengel. Leaves 3-4 inches long.

**Green-flowered Psychotria.** Shrub 6 to 7 feet.

26 P. repanda (Ruiz et Pav. fl. per. 2. p. 61.) glabrous; branches somewhat tetragonal, leafy at the top; leaves lanceolate-oblong, repand; stipulas connate at the base, lanceolate, ciliated on the back and margins, caduceous; panicles terminal, with brachiate compressed branches; bracteoles ovate, acute; flowers sessile, on the tops of the branches of the panicle.
\textit{S.} Native of Peru, on the Andes in groves. Corolla small, yellow, with a villous throat. Berries size of pepper-corns, purple.

\textit{Repand-leafed Psychotria.} Shrub 4 to 6 feet.

32 P. \textit{foveolat\'a} (Ruíz et Pav. fl. per. 2. p. 59. t. 207. f. b.) leaves narrow-lanceolate, acuminate at both ends, hardly petiole-like, with the axes of the upper veins often glandularly foveolate, but downy on the veins beneath, as well as the branchlets and peduncules; stipulas oval, deciduous; panicles pedunculate, having the branchlets drooping while bearing the fruit; flowers 3-5, sessile at the top of each branch of the panicle. \(\gamma.\) S. Native of Peru, on the Andes in groves, at Chinchao and Cuchero, ex Ruiz et Pav.; and on the mountains about the Guanoaco, ex Herb. Henke. P. foveolata, Spreng. syst. 1. p. 743. no. 39. exclusive of the synonyms. Branches rather tetragonal. Corolla small, cream-coloured. Berries ovate, purplish-green, ex Bartl. globose and rufous, and about the size of pepper berries.

\textit{Foveolate-leafed Psychotria.} Tree 18 feet.

28 P. \textit{divaricata} (H. B. et Kunth, nov. gen. amer. 3. p. 362. but not of Wild.) glabrous; branchlets terete; leaves lanceolate-oblong, acute, narrow at the base, membranous, foveolate in the axils of the veins beneath; panicles pedunculate, rather ovate, with opposite spreading branches; flowers pedicellate. \(\gamma.\) S. Native of Peru, on the Andes in temperate places about Quito. Very nearly allied to \textit{P. foveolata.} There is a variety of this with tetracromatic tetrands flowers.

\textit{Divaricate Psychotria.} Shrub.

29 P. \textit{virgat\'a} (Ruíz et Pav. fl. per. 2. p. 60. t. 209. f. a.) glabrous; leaves oblong or elliptic, acuminate, coriaceous, reticulately-veined beneath; stipulas bluntly bifid, length of the petioles; cymes on short peduncles, trichotomous, crowded with flowers; flowers almost sessile, on the tops of the branches of the cyme; fruit oval. \(\gamma.\) S. Native of Peru, on the Andes in cold mountain forests. Leaves 4 inches long, with red nerves, and reflexed margins, bitter, and supplying a yellow colour when dried. Corollas sulphur-coloured, with a villous throat. Berries ovate, deep blue, size of peas. P. virgata Janacensis, Spreng. syst. 1. p. 742. is perhaps a very distinct species from the present.

\textit{Twiggy Psychotria.} Shrub 9 to 10 feet.

30 P. \textit{cuneifolia} (D. C. prod. 4. p. 507.) glabrous; leaves obovate, cuneate at the base, and ending in a short cuspate point at the apex; stipulas small, deciduous; panicles erect, shorter than the leaves, with opposite branches. \(\gamma.\) S. Native of Peru, at Guayaquil. P. glabrata, Bartl. in herb. Hanke, but not of Swartz. Flowers unknown. Berries ovate-globose, 10-striped in the dried state. Seeds semi-ovate.

\textit{Wedge-leafed Psychotria.} Shrub.

31 P. \textit{Henkei} (D. C. prod. 4. p. 507.) glabrous; leaves oval-oblong, acuminate at both ends; stipulas bifid on both sides, acuminate; peduncle a little shorter than the leaves; cymes contracted. \(\gamma.\) S. Native of Guayaquil, and probably of Mexico. P. pedunculata, Bartl. in herb. Hanke. Allied to P. pedunculata, Swartz, but differs in the stipulas being much more acuminate, in the leaves being narrower, and more acuminate at both ends. Cymes obconical. Flowers and fruit unknown.

\textit{Hanke's Psychotria.} Shrub.

32 P. \textit{trifida} (Ruíz et Pav. fl. per. 2. p. 60. t. 209. f. b.) smoothish; branchlets bluntly tetragonal; leaves lanceolate, acuminate, shining above, but downy along the nerves and veins beneath; stipulas connate at the base, acutely bifid at the apex; cymes sessile, tripartite, with the branches again trifid; flowers sessile, by threes at the tops of the branchlets of the cyme; corollas downy; berries roundish-turbinate. \(\gamma.\) S. Native of the Andes of Peru, in mountain groves. Leaves 3 inches long. Throat of corolla villous. Berries black.

\textit{Trifid-cymed Psychotria.} Tree 18 feet.

33 P. \textit{capitata} (Ruíz et Pav. fl. per. 2. p. 59. t. 206. f. a.) smoothish; branchlets slightly tetragonal; leaves oblong, acuminate, very veiny, downy beneath; stipulas bifid, obtuse; panicles shorter than the leaves, ovate, terminal, on short peduncles; peduncles bracteate, opposite; flowers crowded. \(\gamma.\) S. Native of Peru, on the Andes in groves. Cephal\'is Peruviana, Spreng. syst. 1. p. 749. Stipulas hispid, glandular on the inner side at the base. Bracteas lanceolate; bracteoles ovate, acute. Berries ovate, blackish, umbilicate.

\textit{Capitate-flowered Psychotria.} Shrub 9 to 10 feet.

34 P. \textit{villo\'a} (Ruíz et Pav. fl. per. 2. p. 59. t. 207. f. a.) branchlets, peduncles, petioles, and nerves of leaves clothed with rufous villi; leaves attenuated at both ends, glabrous above in the adult state, downy on the nerves beneath; stipulas ovate-oblong, acute, caducous; panicles pedunculate, with the branches and branchlets opposite; flowers by threes, glabrous. \(\gamma.\) S. Native of the Andes of Peru, in mountain groves. Bartl. in herb. Hanke. Knots of branches pilose. Leaves 4-5 inches long. Bracteas small, acuminate. Berries red, globose, rather compressed, size of small peas. Allied to \textit{P. micrantha} and \textit{P. hirsuta.}

\textit{Villo\'a Psychotria.} Shrub 9 to 10 feet.

35 P. \textit{micrantha} (H. B. et Kunth, nov. gen. amer. 3. p. 363. t. 284.) hairy from rufescent vili; branchlets terete; leaves obovate-elliptic, acuminate, cuneate at the base, rather coriaceous; stipulas oblong, awnedly bidentate; cymes pedunculate, of 6 rays, diffuse; flowers glomerate; corollas hairy on the outside; fruit globose, elliptic, hairy. \(\gamma.\) S. Native of Peru, ex Kunth, or at the river Magdalena, ex Wild. P. rufescens, Willd. in Rom. et Schultes, syst. 5. p. 192. but not of Kunth.

\textit{Small-flowered Psychotria.} Shrub.

36 P. \textit{subsutomentosa} (Ruíz et Pav. fl. per. 2. p. 61. t. 210. f. a.) clothed with downy tomentum; branchlets bluntly tetragonal; leaves lanceolate-oblong, acute; stipulas connate at the base, acutely bifid at the apex; corymb pedunculate, trifid, bearing almost sessile crowded flowers at the tops of the branchlets; corollas hairy. \(\gamma.\) S. Native of the Andes of Peru, in mountain groves. Leaves 3 inches long, white beneath. Stipulas glandular. Calyx and corolla blue. Bracteas subulate. Cephal\'is subtomentosa, Spreng. syst. 1. p. 749.

\textit{Subtomentose Psychotria.} Shrub 4 to 6 feet.

** Species natives of Brazil.

37 P. \textit{Alba} (Ruíz et Pav. fl. per. 2. p. 58. t. 205. f. a.) smoothish; branchlets compressed; leaves elliptic-oblong, acute at both ends, beset with rows of hairs along the nerves beneath, and often foveolate in the axis of the nerves; stipulas ovate-oblong, undivided, rather concrete; panicles pedunculate, terminal, shorter than the leaves, with the branchlets opposite; calyx short, truncate; berries ovate. \(\gamma.\) S. Native of South America, especially in tropical Brazil, Guayaguay, and Andes of Peru. Cham. et Schlecht. in Linnaea. 4. p. 19. P. ardisiaefolia, H. B. et Kunth, nov. gen. amer. 3. p. 359. Bartl. in herb. Hanke. P. densiflora, Willd. in Rom. et Schultes, syst. 5. p. 189. P. pátula, Willd. in Rom. et Schultes, syst. 5. p. 189. P. ardisiaefol\'ia, P. pátula, and P. álba, Spreng. Leaves 6-8 inches long. Stipulas obovate, hairy at the base. Bracteas conning, ovate, acute. Flowers and berries white.

\textit{Var. \beta. tóneo} (Cham. et Schlecht. in Linnaea. 4. p. 10.) leaves glabrous, nearly obovate, few-veined. \(\gamma.\) S. Native of Brazil, near Rio Janeiro.

\textit{White-berried Psychotria.} Shrub 12 feet.

38 P. \textit{leiocha\'ra} (Cham. et Schlecht. in Linnaea. 4. p. 22.)
smoothish; leaves narrow-lanceolate, acuminated at both ends, membranous; stipulas rather concrete, bidentate on both sides; cymes pedunculate, terminal; with the branchlets slender, opposite or verticillate, downy; flowers tetradrous, rarely pentadrous; calyx 5-lobed; fruit globose, ribless. \( \text{S.} \) Native of tropical Brazil.

**Var. \( \beta \) extratropical** (Cham. et Schlecht. in Linnaea. 4. p. 22.) cymes quite glabrous; flowers triandrous or tetradrous; calycine teets unequal. \( \text{S.} \) Native of the south of Brazil, without the tropic. Perhaps a proper species.

**Smooth-fruited Psychotria.** Shrub 4 to 6 feet.

39 P. *nîlīdu* (Cham. et Schlecht. in Linnaea. 4. p. 25.) quite glabrous; leaves lanceolate, acuminated, on very short petioles; stipulas triangular, acute, at length bident, permanent; cymes terminal, pedunculate, length of 5 leaves compressed rays, 4 of them in a whorl, and the other in the center of these 4; calyx acutely 5-toothed. \( \text{S.} \) Native of tropical Brazil. Leaves 3-4 inches long, and 10-18 lines broad. Flowers small, deciduous. Fruit unknown.

**Shining-leaved Psychotria.** Shrub 4 to 6 feet.

40 P. *fôrmosa* (Cham. et Schlecht. in Linnaea. 4. p. 24.) leaves glabrous, obovate or elliptic, short-acuminated, cuneated at the base, of the consistence of parchment; stipulas ovate, acute, small, deciduous; panicles terminal, pedunculate, loose, smaller than the leaves, downy or hairy; lobes of the corolla acute, bidentate at the base. Very like *P. álba*, and the calicarites of the stipulas are beset with rufous villi, as in it.

**Beautiful Psychotria.** Shrub 6 to 8 feet.

41 P. *cûspidâta* (Bred. ex Willd. in Rœm. et Schultes, syst. 5. p. 192.) smooth and glabrous; leaves oval, cuneated at the base, acuminated at the apex, seriociliately villous in the axils when old; stipulas bidentate, truncate; panicles terminal, pedunculate, 3 times shorter than the leaves, with compressed branches, which are dilated at the ramifications. \( \text{S.} \) Native of tropical Brazil, and at Caracass. Allied to *P. nonatêloides* and *P. cornifôlia*.

**Cuspidated-leaved Psychotria.** Shrub 5 to 6 feet.

42 P. *nonatêloides* (Cham. et Schlecht. in Linnaea. 4. p. 26.) smooth and glabrous; branchlets compressed; leaves lanceolate, acute at the base, and long-acuminated at the apex, membranous; stipulas 2-lobed, permanent; cymes racemose, terminal, one-half shorter than the leaves; pedicels 3-flowered; middle flower and one of the lateral ones tricreate. \( \text{S.} \) Native of tropical Brazil, and at Caracass. P. involucrata, Wild. herb. Fruit unknown. Habitat of *P. cornifôlia*.

**Nonatêlo-leaf Psychotria.** Shrub.

43 P. *nôxia* (St. Hil. pl. rem. bras. p. 234. t. 21. f. a.) branchlets compressed, furnished with 2 rows of hairs; leaves lanceolate, acuminated, at short petioles, approximate, glabrous; stipulas short, biserate; flowers 2-4 in a fascicle, sessile, bracteate, terminal, and axillary; bracteae acuminated, ciliated; fruit elliptic. \( \text{S.} \) Native of Brazil. Leaves a span long, and 3-4 inches broad, of a vivid black colour in the dried state.

**Elder-like Psychotria.** Shrub.

44 P. *lonifôlia* (Hoffmanns. ex Willd. in Rœm. et Schultes, syst. 5. p. 190.) leaves ovate-lanceolate, acuminated, petiolate; stipulas deciduous; branches of the panicle glabrous, verticillate, 3 times shorter than the leaves. \( \text{S.} \) Native of Brazil. Leaves a span long, and 3-4 inches broad, of a vivid black colour in the dried state.

**Great-leaved Psychotria.** Shrub.

45 P. *grandifôlia* (Hoffmanns. ex Willd. in Rœm. et Schultes, syst. 5. p. 190.) leaves ovate, acute; stipulas bident, obtuse; flowers panicked. \( \text{S.} \) Native of Brazil. Leaves half a foot long. Corollas yellow. Very like *P. latifôlia*, but differs in the form of the stipulas.

**Great-leaved Psychotria.** Shrub.

* * * Species natives of Guiana.

51 P. *mapûria* (Rœm. et Schultes, syst. 5. p. 187.) glabrous; leaves obovate, each in a short blunt acumen, cuneated at the base; stipulas ovate-roundish, deciduous; panicles terminal, shorter than the leaves; fruct ovate-globose, striate. \( \text{S.} \) Native of French Guiana, on the banks of rivers.


**Mapûria** Psychotria. Shrub 7 to 8 feet.
leaves elliptic, cuneated at the base, short-acuminated at the apex; stipulas obvate, foliaceous, deciduous, length of the petioles; panicles rising from the forks of the branches, pedunculate, hardly shorter than the leaves; fruit ovate, striated. \( \bullet \). S. Native of French Guiana, where it was collected by Patris. Very nearly allied to \( P. \) *Mapouria*. but differs from that species in the above characters, besides in the longer leaves, larger stipulas, and in the peduncle of the fruiciferous panicle being 4 inches long.

*Mapouria*-like *Psychotria*. Shrub 5 to 6 feet.

53 \( P. \) *Simira* (Raem. \& Schultes, syst. 5. p. 187.) glabrous; leaves elliptic-ovate, abruptly acuminated, with parallel veins, paler beneath; stipulas ovate, acuminated, deciduous; panicles erect, on short peduncles, one-half shorter than the leaves; berries oval. \( \bullet \). S. Native of French Guiana, in humid parts of woods. Simira tinctoria, Aubl. guian. 1. p. 170. t. 65. P. parviflora, Wild. spec. 1. p. 962. Bark red on the inside. Leaves 14 inches long, and 6 broad, with the nerves red beneath. Branches of the panicle short. Corolla white, with rounded segments, ex Aubl., but acute segments, ex Rich., shorter than the stamens. The bark of this shrub is used to dye silk and cotton of a red colour. *Simira* is the Guiana name of the tree.

*Simira* *Psychotria*. Shrub 10 to 12 feet.

54 \( P. \) *Patrisii* (D. C. prod. 4. p. 510.) glabrous; leaves elliptic-oblong, acuminated at both ends; stipulas elliptic, acutish, deciduous; panicles pedunculate, a little shorter than the leaves, having the branches and branchlets opposite; fruit nearly globose, striated, truncate at the apex. \( \bullet \). S. Native of French Guiana, where it was collected by Patris, along with many other species. Branches terete. Leaves 5-6 inches long, and 2 or 3½ broad. From the stipulas and liabi, this species comes near to \( P. \) *Mapouria*.

*Patris*’s *Psychotria*. Shrub 6 to 8 feet.

55 \( P. \) *sororia* (D. C. l. c.) glabrous; leaves elliptic-oblong, acuminated at both ends; stipulas triangularly-elliptic, acute, deciduous; panicles terminal, pedunculate, hardly shorter than the leaves, with the branches and branchlets opposite; fruit nearly globose, striated, truncate at the apex. \( \bullet \). S. Native of French Guiana, where it was collected by Patris. Very nearly allied to \( P. \) *Patrisii*, but the berries are fewer, and larger round, without horns, and crowned by the 5 small teeth of the calyx.

*Sister* *Psychotria*. Shrub 6 to 8 feet.

56 \( P. \) *pissonia* (D. C. prod. 4. p. 510.) glabrous; leaves oval, acuminated at both ends; stipulas oblong, acuminated, deciduous; panicles pedunculate, longer than the leaves, having the branches and branchlets opposite; fruit ovate, striated. \( \bullet \). S. Native of French Guiana, where it was collected by Patris. The buds and stipulas are oblong and acute, and very much like those of the fig-tree. Peduncle of the panicle 3 inches long. Fruit small. Allied to \( P. \) *Simira*.

*Fig-budded* *Psychotria*. Shrub 5 to 6 feet.

57 \( P. \) *racemosa* (A. Rich. act. soc. hist. nat. par. 1792. p. 107.) glabrous; leaves elliptic-oblong, acuminated at both ends, shining beneath; stipulas bifid, with the lobes acuminated; racemes terminal, pedunculate, straight, one half shorter than the leaves; racich of the raceme angular, downy; fruit compressed, coarsely ribbed. \( \bullet \). S. Native of French Guiana. Leaves 10 inches long, and 3 broad, on petioles which are nearly an inch long. Flowers unknown.

*Racemose*-flowered *Psychotria*. Shrub.

58 \( P. \) *flexuosa* (Wild. spec. 1. p. 966.) glabrous, subherbaceous; branches compressed; leaves oval, acuminated, on short petioles, membranous; stipulas bipartite, acuminated, equal in length to the petioles; panicles terminal, racemose, pedunculate, shorter than the leaves; berries globose, compressed, rather didymous. \( \bullet \). S. Native of Cayenne, in stereile places. Nonatelia paniculata, Aubl. guian. 1. p. 181. f. 70. f. 2. Flowers white. Berries violaceous.

*Flexuous* *Psychotria*. Shrub 2 feet.

59 \( P. \) *deleixa* (D. C. prod. 4. p. 510.) glabrous; branches and peduncles compressed; leaves ovate-lanceolate, or oval-lanceolate, acuminated at the apex, and acute at the base, membranous; stipulas twin on both sides, lanceolate, hardly joined at the base; panicles pedunculate, shorter than the leaves, with reflexed compressed branchlets, which are bearded in the axils; flowers small, tetraterous. \( \bullet \). S. Native of French Guiana, where it was collected by Patris. Very nearly allied to \( P. \) *flexuosa*, but differs in the flowers being tetraterous and tetradiomous.

*Deflexed*-peduncled *Psychotria*. Shrub 1 to 2 feet.

60 \( P. \) *paniculata* (Wild. spec. 1. p. 970.) glabrous; leaves ovate, acuminated at both ends, veiny; stipulas connate, bidentate; panicles terminal, erect; berries globose, compressed, subdidymous. \( \bullet \). S. Native of Surinam and other parts of South America.

*F. var. oblongata* (D. C. prod. 4. p. 510.) leaves oblong; panicles weak. \( \bullet \). S. Native of French Guiana, where it was collected by Patris. Nerves of the leaves and peduncles yellowish. Panicles the length of the leaves.

*Panicled*-flowered *Psychotria*. Tree, tall.

61 \( P. \) *bracteata* (D. C. prod. 4. p. 510.) glabrous; leaves oblong, acuminated, almost sessile, stiff, shining above, with revolute margins; stipulas twin on both sides, linear, acuminated, longer than the petioles, which are very short; cymes trichotomous, on short peduncles; bracteas oblong, many, under the flowers; fruit nearly globose, striated. \( \bullet \). S. Native of French Guiana, where it was collected by Patris. This is a very distinct species. Leaves 3 inches long, and 8-9 lines broad. Petioles 1-2 lines long. Peduncle of the cyme compressed, 9-10 lines long.

*Bracteate*-flowered *Psychotria*. Shrub 4 to 6 feet.

62 \( P. \) *flattypoda* (D. C. l. c.) glabrous; leaves oval or oblong, acuminated, with parallel nerves; stipulas connate, short, bidentate on both sides; cymes terminal, 4-parted, on very short peduncles, girded by 4 large ovate bracteas, having the branches compressed so much as to be 2-edged, the secondary branches bearing the flowers at their tops; fruit round, depressed, coarsely ribbed. \( \bullet \). S. Native of French Guiana, where it was collected by Patris. The leaves and peduncles become yellowish on drying. Leaves 5-6 inches long, and 2-3 broad. Petioles 4-6 lines long.

*Broad-peduncled* *Psychotria*. Shrub 6 to 8 feet.

63 \( P. \) *breveipes* (D. C. prod. 4. p. 511.) glabrous; branchlets compressed; leaves elliptic, acuminated at both ends, shining above; stipulas twin on both sides, linear, acuminated, hardly joined at the base; cymes irregularly branched, on short peduncles, rather bracteate; fruit roundish, compressed, profusely ribbed. \( \bullet \). S. Native of French Guiana. Fructiferous cymes equal in length to the attenuated part of the base of the leaves. Leaves 5 inches long, and 2 broad. Petioles 1-3 lines long.

*Short-peduncled* *Psychotria*. Shrub.

**** Species natives of Columbia.

64 \( P. \) *Carthagenensis* (Jacq. amer. 65. t. 174. f. 22.) glabrous; leaves obovate or elliptic, rather coriaceous, attenuated at both ends; stipulas ovate, rather membranous, Rufous, deciduous; peduncles elongated, corymbose, trichotomous, rising from the forks of the branches; throat of the corolla villous;
berries ovate. ∎ S. Native of Carthagen@, among bushes, ex Jacq.; and of St. Domingo, ex Bertero.  P. Carthagenensis, Spreng. ex Balb. Corollas white, having the tube much exceeding the limb, which is said to be 6-7-cleft, and the stamens are 6-7, according to Jacquin. Berries red, crowned by the calyx, which is of the same colour. Willdenow says that the stipulas are emarginate; but they are probably entire and obtuse.

**Carthagen@** Psychotria. Shrub 5 to 6 feet.

65 P. ? cymata (H. B. et Kunth, nov. gen. amer. 3. p. 356.) glabrous; branchlets compressed; leaves lanceolate or oblong, long-acuminated, narrow at the base, membranous; stipulas oblong, obtuse; corymbs pedunculate, trichotomous, spreading; calyces cucullately spathaceous, cleft on one side. ∎ S. Native of New Granada. Calyx campanulate, 5-toothed, one half shorter than the corolla. On account of the form of the calyx, this plant does not agree with the present genus, but the fruit is unknown.

**Large-calyxed** Psychotria. Shrub.

66 P. salicifolia (H. B. et Kunth, nov. gen. amer. 3. p. 360. but not of Willd.) glabrous; branchlets compressed; leaves lanceolate, acuminate at both ends, membranous; stipulas aculeate, acute, fasscescent; panicles pedunculate, with opposite, much-spreading branchlets; fruit spherical. ∎ S. Native of New Granada.

**Willow-leaved** Psychotria. Shrub.

67 P. ? uncia (H. B. et Kunth, nov. gen. amer. 3. p. 360.) glabrous; branches 2-edged; leaves oblong, acuminate at both ends, shining above, scrobiculate in the axils of the veins beneath; stipulas ovate, acute-cuspidate; cymes pedunculate, trichotomous, spreading; flowers sessile, usually by threes; fruit ovate. ∎ S. Native of New Granada, in temperate places, near the cataract of Tocantams.

**Two-edged-branchled** Psychotria. Shrub.

68 P. ? indica (H. B. et Kunth, nov. gen. amer. 3. p. 371. t. 288. but not of Willd.) glabrous; branches 2-edged; leaves lanceolate-oblong, acuminate at both ends, coriaceous, shining above; stipulas ovate, acute, decussate; corymbs pedunculate, dichotomous, spreading; bracteoles and teeth of the calyx ciliated; fruit nearly globose. ∎ S. Native of New Granada, on the banks of the river Magdalena, near Honda. P. viburnoides, in Rom. et Schultes, syst. 5. p. 189. but not of Kunth. Flowers usually by threes, sessile, about the size of those of the privet.

**Shining-leaved** Psychotria. Tree 20 feet.

69 P. cornificola (H. B. et Kunth, nov. gen. amer. 3. p. 362.) glabrous; branchlets terete; leaves almost sessile, ovate-rhomboid, acuminate, cuneate at the base, membranous; corymbs pedunculate, terminal, bifid, divaricate; fruit roundish, compressed. ∎ S. Native on the banks of the Orinoco, near Maypures. Stipulas and flowers unknown. Perhaps a distinct genus.

**Dogwood-leaved** Psychotria. Shrub.

70 P. viburnoides (H. B. et Kunth, nov. gen. amer. 3. p. 361. but not of Willd.) glabrous; branchlets compressed; leaves oblong, acuminate at both ends, coriaceous, shining above; stipulas ovate, acute, deciduous; cymes pedunculate, of 4 rays, spreading; bracteoles and teeth of the calyx ciliated. ∎ S. Native on the banks of the Orinoco, near the cataract of Atures. Very like P. lucida.

**Viburnum-like** Psychotria. Shrub.

71 P. borjensis (H. B. et Kunth, nov. gen. amer. 3. p. 557.) smoothish; branchlets compressed; leaves lanceolate, acuminate at both ends, membranous, with undulated margins, shining a little; stipulas ovate, acute; cymes pedunculate of 5 rays, spreading, the rays clothed with powdery down. ∎ S. Native in woods, on the banks of the Orinoco, near San-Borja. P. lugistria, Willd. in Rœm. et Schultes, syst. 5. p. 188. Nearly allied to P. rugulosa, but the flowers are smaller, &c. Leaves glabrous on both surfaces according to Kunth, but according to Willdenow the leaves are downy underneath.

San-Borja Psychotria. Shrub.

72 P. glaucescens (H. B. et Kunth, nov. gen. amer. 3. p. 558.) branchlets terete, hairy; leaves oblong or lanceolate-oblong, acuminate, acute at the base, with sub-undulated margins, rather coriaceous, glabrous, glaucescent beneath, five-lobed in the axils of the veins beneath, and downy on the veins; cymes pedunculate of 5 spreading rays; pedicels hairy; fruit nearly globose-elliptic. ∎ S. Native on the banks of the Orinoco, and near the city of Angostura. P. divariata, Willd. in Rœm. et Schultes, syst. 3. p. 191.

**Glaucescens** Psychotria. Shrub 10 to 15 feet.

73 P. rufescens (Spreng. syst. 1. p. 741.) branchlets, stipulas, peduncles, petioles, and nerves of the leaves clothed with rusty hairs; leaves ovate-oblong, acuminate, narrow at the base; stipulas ovate, obtuse; cymes sessile, of 3-4 rays or branches, the rays bearing almost sessile, crowded flowers at their tops. ∎ S. Native of South America.

Var. a. ferruginea (D. C. prod. 4. p. 518.) branches sub-trigonal; flowers conglomerate; stipulas acutish, half an inch long. ∎ S. Native of New Andalusia, near Caripe. The corolla is said to be white, with a villous throat and reflexed lobes. Fruit unknown. P. rufescens, H. B. et Kunth, nov. gen. amer. 3. p. 364. but not of Willd. Bertiëra ferruginea, Willd. in Rœm. et Schultes, syst. 5. p. 287.


Var. c. Haenkea (D. C. l. c.) branchlets compressed; stipulas obtuse, hairy in the young stage, and glabrous in the adult stage; flowers conglomerate; corollas hairy outside; berries ovate-oblong. ∎ S. Native of Mexico. P. rufescens, Bartl. Rufescens Psychotria. Shrub.

74 P. diervilloides (H. B. et Kunth, nov. gen. amer. 3. p. 558.) clothed with fine hairy tomentum; branchlets compressed; leaves ovate-acuminate, rounded at the base, membranous, glabrous above; stipulas oblong, obtuse; cymes pedunculate of 4 spreading rays; pedicels and calyces hairy. ∎ S. Native of South America, near Angostura. Petioles glabrous. Stipulas equal. Lobes of the corolla revolutely reflexed. Fruit unknown.

**Diervilla-like** Psychotria. Shrub.

75 P. orinocensis (D. C. prod. 4. p. 512.) leaves on short petioles, roundish-ovate, acute, shining; stipulas 2-lobed; corymbs divaricate. ∎ S. Native on the banks of the Orinoco. P. cornificola, Willd. in Rœm. et Schultes, syst. 5. p. 191, but not of Kunth.

**Orinoco** Psychotria. Shrub.

76 P. latifolia (Willd. in Rœm. et Schultes, syst. 5. p. 189.) leaves ovate, acute at both ends, ribbed; stipulas acutely bidentate; panicles terminal, elongated. ∎ S. Native on the banks of the Orinoco, in shady places. Humb. et Bonpl. Leaves a foot long, very broad, shining on both surfaces, downy on the veins beneath. Branches of the panicled crowed, erect, ex Spreng.-syst. 1. p. 745.

**Broad-leaved** Psychotria. Shrub.

77 P. levigata (Willd. in Rœm. et Schultes, syst. 5. p. 190.) leaves oblong-ovate, petiolate, tapering at the base, glabrous; stipulas bidentate; panicle terminal. ∎ S. Native of South
America, at the river Atabapo. Humb. et Bonpl. This is said to be the same as *Palicourea speciosa*, by Spreng.

Smooth Psychotria. Shrub.

78 P. Hundos (Willd. in Rœm. et Schultes, syst. 5. p. 189.) leaves oblong, acuminate at both ends, rather membranous; stipulas oblong, obtuse; panicle trichotomously corymbose. 

* S. Native of New Granada, on the banks of the Magdalena, near Honda, or Hueno. *Palicourea mitis* is joined with this by Spreng, but for what reason we know not.

*Honda* Psychotria. Shrub.

79 Cumanus (Willd. in Rœm. et Schultes, syst. 5. p. 191.) leaves oblong; stipulas ovate, acute; cymes few-flowered. 

* S. Native of Cuman, Humb. et Bonpl.; and Trinidad, G. Don.

Flowers yellow.

*Cuman* Psychotria. Clt. 1824. Shrub 10 feet.

80 P. sessiliflora (Willd. in Rœm. et Schultes, syst. 5. p. 191.) herbaceous; leaves oblong, acuminate at both ends; stipulas emarginately bidentate; flowers terminal, crowded, sessile. 

* S. Native on the banks of the Orinoco, Humb. et Bonpl. Herb half a foot high. Flowers white.

*Sessile-flowered* Psychotria. Pl. half a foot.

* *** A species native of Panama.

81 P. furcata (D. C. prod. 4. p. 512.) smooth; branches bifurcate, terete; branchlets compressed; peduncles, pedicels, and nerves of the leaves roughish; leaves ovate-oblong, acuminate at both ends; stipulas bidentate, small, acute; heads on short peduncles; pedicels thick, very short; bracteae 4, linear, spreading. 

* S. Native of Panama, where it was collected by Hœnke. *Cephalis furcata*, Bartl. in herb. Hœnke. Fruit ovate-globose, compressed, furrowed. Flowers unknown. Habit of *Cephalis oblonga*, but the inflorescence and fruit are like that of *P. platypoda*.

Forked-branched Psychotria. Shrub.

* *** Species natives of Mexico.

82 P. biaristata (Bartl. in herb. Hœnke, ex D. C. prod. 4. p. 513.) glabrous; branchlets a little compressed; leaves oblong, or ovoblate-oblong; attenuated at both ends, coriaceous; stipulas short, broadly ovate, biaristate, deciduous; cymes on short peduncles of 3-6 rays, much shorter than the leaves; fruit nearly globose. 

* S. Native of Mexico. Leaves 2 inches long, and 9 lines broad. Petioles 1-2 lines long.

Two-awned-stipulated Psychotria. Shrub 1 to 2 feet.

83 P. molis (Poir. dict. 5. p. 702. ? Bartl. in herb. Hœnke, ex D. C. prod. 4. p. 513.) branchlets nearly terete; peduncles and nerves of leaves downy; leaves elliptic-oblong, acuminate at both ends, membranous, when young downy, but in the adult state glabrous above; stipulas ovate, acutely bidentate; panicle corymbose, crowded, pedunculate, shorter than the leaves; corolla with a short tube, blunt erect lobes, and a hairy throat. 

* S. Native of Mexico. Allied to *P. horizontalis* var. *P. molis*, Spreng. in herb. Balb. should be excluded from the present order. The plant of Poiret is probably distinct from that of Bartl.

Soft Psychotria. Shrub.

84 P. herbiclada (D. C. prod. 4. p. 513.) branchlets, pedicles, panicles, and nerves of leaves downy; leaves elliptic-oblong, acuminate at both ends; stipulas acutely bifid; panicles erect, ovate, with the rachis compressed, and the branches opposite. 

* S. Native of Mexico. *P. pubescens*, Bartl. in herb. Hœnke. It differs from *P. pubescens* in the stipulas being more acute, in the panicles not being corymbose, in the rachis of the panicles being compressed, and in the bracteoles being shorter. Flowers unknown. Berries globose, compressed, downy, crowned, striated in the dry state.

Hairy-branched Psychotria. Shrub.

85 P. aureola (Bartl. in herb. Hœnke, ex D. C. prod. 4. p. 513.) clothed with velvety down; branchlets from compressed to terete; leaves oblong-lanceolate, attenuated at both ends; veins parallel, and are as well as the nerved yellowish; stipulas broad, ovate, drawn out each into a septicete acumen at the apex, which is sometimes undivided, and sometimes biaristate; corymbs pedunculate, trichotomous; calyx 5-toothed, and are, as well as the corollas, downy. 

* S. Native of Mexico. Branches and leaves yellowish in the dried state. Leaves 2 or 2½ inches long, and 9-10 lines broad. Petiole a line long.

Golden Psychotria. Shrub.

86 P. scabriuscula (Bartl. in herb. Hœnke, ex D. C. prod. 4. p. 513.) branchlets a little compressed; young leaves and peduncles clothed with very fine down; leaves oblong-lanceolate, attenuated at both ends, and length glabrous on the upper surface; stipulas ovate, biaristate, shorter than the petioles; corymbs trichotomous, pedunculate, shorter than the leaves; fruit globose didymous. 

* S. Native of Mexico, about Acauleo. Allied to *P. auricula*. Peduncles often changed into lateral elongated pseudo-axillary branches.

Roughish Psychotria. Shrub.

87 P. Mexicana (Willd. in Rœm. et Schultes, syst. 5. p. 192.) leaves oblong, acuminate at both ends, rather membranous; stipulas bipartite, acute; panicles narrow, terminal. 

* S. Native of Mexico. Humb. et Bonpl. This plant is referred to *Palicourea fastigiata* by Sprengel, who is probably correct.

Mexican Psychotria. Shrub.

88 P. radiofolia (Willd. in Rœm. et Schultes, syst. 5. p. 189.) leaves oblong, acuminated, pilose on the veins beneath; stipulas bipartite, linear-subulate; panicles corymbose, terminal. 

* S. Native of Mexico, about Xalappa. Humb. et Bonpl.

Bird-cherry-leaved Psychotria. Shrub.

* *** A species native of Florida.

89 P. lanceolata (Nutt. in Sill. amer. journ. 5. p. 290.) branches and under sides of leaves clothed with rusty down; leaves lanceolate, acuminated at both ends; stipulas stem-clasping, roundish, deciduous, spathulate; corymbs terminal, trichotomous from the base. 

* S. Native of Eastern Florida. Leaves 2-3 inches long. Berries ovate, red.

*Lanceolata-leaved* Psychotria. Shrub.

* *** A species native of the Bahamas.

90 P. undata (Jacq. hort. selcenhbr. 3. p. 5. t. 260. fragm. 101.) glabrous; leaves oval-lanceolate or oblong, acuminated at both ends, undulated; stipulas connate, ovate, deciduous, a little shorter than the pedioles; cymes terminal, sessile, tripartite, with trichotomous branches; corolla with a naked throat, but the tube is villous at the origin of the filaments. 

* S. Native of the Bahamas. Leaves acute at both ends, wavy, shining above, 3-4 inches long. Corollas white, with reflexed segments. Berries small, roundish, red.


* *** Species natives of the West India Islands.

91 P. floribunda (H. B. et Kunth. nov. gen. amer. 3. p. 359.) glabrous; branchlets compressed; leaves elliptic-oblong, acuminated at both ends, coriaceous; stipulas oblong, obtuse; cymes pedunculate, of 6 rays, much branched, diffuse; the rays again divided into 4-5 rays; bracteas and calycine teeth hairy; stamens length of the lobes of the corolla. 

* S. Native of South America, in the province of Carthagen near Turbaco? ex
Kunth; in the Island of Martinico, ex Sieb; and of Guadaloupe, ex Perrottet.

**Bundle-flowered Psychotria.** Shrub.

92 P. **tenuifolia** (Swartz, prod. p. 43. fl. ind. occ. 1. p. 402.) glabrous; leaves oblong, acuminate at both ends, membranous; stipulas ovate, deciduous, bifid, with acuminate lobes; panicles erect, almost sessile, shorter than the leaves; throat of corolla villous. ♂ S. Native of Hispaniola, among bushes. Leaves with an obtuse acumen, ex Swartz. Panicles trichoto- mous. Flowers small, white. Berries oblong, glabrous. — P. glabrata, Sieb. fl. mart. no. 73. does not differ from the plant of Swartz, unless in the leaves being acutely acuminate. P. laurifólia, Bertero, collected in Hispaniola, has the leaves acute at the apex, and the nerves of the leaves beset with rusty down underneath. In both, however, there are rufous cilia in the axils of the leaves and stipulas.

**Thin-leaved Psychotria.** Shrub 3 to 4 feet.

93 P. **nervosa** (Swartz, prod. p. 43. fl. ind. occ. 1. p. 403.) glabrous; leaves ovate, acute at the base, and acuminate at the apex, veined, a little undulate; stipulas oblong, acuminate, emarginate, deciduous; corymb terminal, tripartite from the base, trichotomously panicked branches; throat of corolla villous; berries oblong. ♂ S. Native of Jamaica, among bushes. P. stipulacea, Swartz, in herb. L’Her. Branches a little compressed. Panicles terminal and axillary, shorter than the leaves. Stipulas large, rusty.

**Nerved-leaved Psychotria.** Shrub 3 to 6 feet.

94 P. **la'na** (Swartz, fl. ind. occ. p. 407. but not of Ruiz et Pav.) glabrous; leaves ovate, acuminate, hardly nerved, on very short petioles; stipulas ovate, acuminate, deciduous; corymb terminal, tripartite from the base, trichotomous, having the branches and pedicles rather capillary and loose; berries oblong. ♂ S. Native of Jamaica, among bushes on the moun- tains. Stipulas small, subelliptic. Fruit oblong, acuminate at both ends. Branches terete. Leaves 1-2 inches long.

**Loose-corymbed Psychotria.** Shrub 4 to 6 feet.

95 P. **o'lo'o'trîcha** (D. C. prod. 4. p. 514.) glabrous; leaves elliptic, acuminate at both ends, membranous, hairy in the axils of the veins; stipulas ovate, membranous, rufous, deciduous; corymb sessile, tripartite, having the branches trichotomous; throat of corolla bearded. ♂ S. Native of Jamaica, Porto-Rico, Martinique, &c. P. **horizontalis**, Spreng. in herb. Balb. It differs from P. **horizontalis** in the nerves of the leaves being glabrous, in the throat of the corolla being bearded, not naked; and in the corymb being sessile, not pedunculate. Very nearly allied to P. undata and P. chimarrhoides.

**Few-haired Psychotria.** Shrub 4 to 6 feet.

96 P. **chimarrhoides** (D. C. prod. 4. p. 514.) glabrous; leaves oblong-lanceolate, acuminate at both ends, membranous; stipulas ovate, obtuse, rusty, deciduous, length of the petioles; cymes terminal, sessile, tripartite; with the branchlets 3 times shorter than the leaves. ♂ S. Native of Guadaloupe and Trinidad, ex Sieb. fl. trin. no. 256; and of Cuba. Fruit ovate, striated, crowned by the 5-toothed calyx. Leaves 3 or 3 1/2 inches long, and 7-9 lines broad. Very nearly allied to P. undata, but differs in the leaves being flat, and one-half narrower; and in the fruit being oval, not spherical.

**Chimarrhoid-like Psychotria.** Shrub 5 to 6 feet.

97 P. **capitellata** (D. C. prod. 4. p. 514.) branchlets compressed, glabrous; leaves elliptic, a little cuneate at the base, and acuminate at the apex, membranous, glabrous; stipulas drawn out into 2 setaceous ligulae; peduncles terminal, hairy, bearing three nearly sessile downy bracteate leads of flowers, one-half shorter than the leaves. ♂ S. Native of Trini- dad. Sieb. fl. trin. no. 236. Habit different from any other species.

**Capitellate-flowered Psychotria.** Shrub.

98 P. **oilo'antlta** (D. C. l. c.) leaves oblong, cuneate at the base, nervèd; nerves prominent beneath, rather roughish; stipulas bifid, with triangular acute lobes; peduncles terminal, shorter than the leaves, 2-flowered at the apex; fruit ovate. ♂ S. Native of St. Domingo. P. lineata, Spreng. in herb. Balb.; and in syst. 1. p. 746. exclusive of the synonyms. Leaves 2-3 inches long, and 9-10 lines broad. Pedicels 1/2 inch long. Flowers unknown. Berry striated a little.

**Few-flowered Psychotria.** Shrub 4 to 6 feet.

99 P. **postoronica** (D. C. prod. 4. p. 515.) branches, pedioles, nerves of leaves, and pedicules clothed with rusty hairs; leaves elliptic, acuminate at both ends, and clothed with velvety down on both surfaces; stipulas ovate, large, membranous, rufous, deciduous; cymes terminal, sessile, tripartite, with the branches trichotomous; throat of corolla villous. ♂ S. Native of Porto-Rico, in woods by the sea-side, where it was collected by Bertero. P. hirsuta from Porto-Rico, Spreng. syst. 1. p. 744. It differs from P. villosa and P. hirsuta in the inflorescence being a sessile cyme, not a pedunculate panicle.

**Porto-Rico Psychotria.** Shrub 5 to 6 feet.

100 P. **berteraiana** (D. C. prod. 4. p. 515.) leaves ovate-oblong, acuminate at both ends, glabrous above, downy on the nerves beneath, and branches of the panicle; stipulas twin on both sides, ovate, acute, hardly joined at the base; branches and branchlets of panicle opposite; tube of corolla short. ♂ S. Native of St. Domingo and Porto-Rico. Nonatélia pubescens, Spreng. syst. 1. p. 751. Leaves membranous, 7 inches long, and 3 inches broad. Petioles 9-10 lines long; axils of leaves somewhat ciliated. Fruit globose, pubescent.

**Bertero’s Psychotria.** Shrub.

101 P. **brachiat'a** (Swartz, prod. p. 45. fl. ind. occ. p. 415.) leaves ovate-oblong, acuminate at both ends, glabrous, downy on the nerves beneath, and branches of the panicle; stipulas twin on both sides, ovate, acute, hardly joined at the base; branches and branchlets of panicle opposite; tube of corolla short. ♂ S. Native of Porto-Rico, from high mountains, ex Swartz; and of St. Domingo, ex Bertero. Nonatélia officinalis, Spreng. in herb. Balb. Leaves downy on the veins beneath. Flowers dirty white. Fruit deep blue, oblong.

**Brachiate-panicled Psychotria.** Clt. 1793. Sh. 6 to 7 feet.

102 P. **rubescens** (Swartz, prod. p. 44. fl. ind. occ. 1. p. 424.) branches, petioles, leaves (especially underneath), and pedicules downy; leaves ovate, acuminate at both ends; stipulas with 2 short acute teeth; panicles cymose, spreading, length of leaves. ♂ S. Native of Jamaica and St. Domingo, in hedges and waste places. Psychotrophium, P. Browne, jam. 161. no. 5. Panicles trichotomous, with usually a sessile flower in each fork. Pedicels furnished with linear opposite bracteae. Flowers greenish yellow, downy outside; throat of corolla vil- lous. Berries downy, roundish, didymous, black, containing bluish juice.

**Downy Psychotria.** Clt. 1812. Shrub 5 to 6 feet.

103 P. **horizontalis** (Swartz, prod. p. 44. fl. ind. occ. p. 410.) branches terete, horizontal, smooth, leaves ovate-lanceolate, acute, downy beneath on the nerves, as well as the petioles and panicles; stipulas small, ovate, deciduous, minute; pedicules shorter than the leaves; panicles erect, with the branches horizontal, and tripartite at the apex; throat of corolla naked. ♂ S. Native of St. Domingo, in chalky dry places. The leaves are said by Swartz to be downy beneath, and villous on the petioles and nerves. Flowers small, dirty white; anthers white. Berries oblong.

**Var. **cuspidata** (D. C. prod. 4. p. 515.) stipulas broad, short, cuspitate, marcescent; throat of corolla hairy. ♂ S.
Native of St. Domingo, where it was collected by Bertero. Perhaps a proper species.  

**Horizontal-leaved Psychotria.** Shrub 3 to 4 feet.  

104 P. corymbosa (Swartz, prod. p. 44. fl. ind. occ. 1. p. 423.) glabrous; leaves ovate-lanceolate, acuminate, shining; stipulas bidentate; teeth lanceolate; corimbis trichotomous, erect, shorter than the leaves; peduncles and pedicels coloured; throat of corolla naked.  

105 P. nucifera (Swartz, prod. 4. p. 515.) glabrous; leaves lanceolate, acute, nerved; stipulas bidentate, marcescent, deciduous, acute; corymb terminal, pedunculate, trichotomous, shorter than the leaves, erect when bearing the flowers, but nutant when bearing the fruit.  

106 P. congesta (Spreng. in herb. Balb. ex D. C. prod. 4. p. 516.) glabrous; leaves lanceolate, acute at the base, and acuminate at the apex; stipulas deciduous; panicles pedunculate, trichotomous, loose; ultimate branches of the panicle bearing 3-4 flowers in a heap; throat of the corolla bearded; anthers inclosed.  

107 P. Weistrich (D. C. prod. 4. p. 516.) glabrous; leaves lanceolate-ovate, acute, roughish, membranous, denticulate; stipulas bidentate; pedicels shorter than the leaves; panicles second, with spreading branches; throat of the corolla naked.  

108 P. myrtiphylum (Swartz, prod. p. 44. fl. ind. occ. 1. p. 405.) glabrous; leaves lanceolate-ovate, nerveless, shining, stiff; stipulas ovate, deciduous; branches second; racemes compound, terminal; throat of the corolla villous; panicles oblong.  

109 P. Polyandra (Swartz, prod. p. 43. fl. ind. occ. 1. p. 398.) plant sarmentose, radicant, and glabrous; leaves ovate, acuminate, villous, rather succulent; stipulas stem-clasping, reniform, persistent; corollas terminal and axillary, pedunculate; throat of the corolla downy; panicles nearly globose.  

110 P. Margaritaria (Swartz, prod. p. 43. fl. ind. occ. p. 400.) glabrous; leaves lanceolate-ovate, acute, margined with cartilaginous bristles; stipulas ovate, acuminate, entire, deciduous, length of pedioles; panicles loose, pedunculate; anthers inclosed; berries ovate.  

111 P. hispida (Swartz, prod. p. 43. fl. ind. occ. 1. p. 396.) branches, panicles, pedicels, and leaves clothed with rusty hairs; leaves lanceolate-ovate, acute; stipulas lanceolate, undivided, deciduous; panicles pedunculate, spreading; throat of corolla villous; berries ovate, downy.  

112 P. floribunda (Swartz, prod. p. 43. fl. ind. occ. 1. p. 396.) glabrous; leaves lanceolate-ovate, acute; stipulas ovate, acuminate, deciduous, entire; panicles pedunculate, much spreading, with reflexed filiform divisions; throat of corolla villous; anthers oblong, among the villi in the throat; berries oblong.  

113 P. Weistein (D. C. prod. 4. p. 516.) glabrous; branches terete; leaves oblong-elliptic, attenuated at both ends, membranous; stipulas deciduous; corimby pedunculate, trichotomous, loose, diverging, having the ultimate branches 3-flowered; throat of corolla naked; corolla oblong; anthers linear; fruit nearly globose, crowned by the calyx.  

114 P. Weistric (D. C. prod. 4. p. 516.) glabrous; stipulas ovate, acuminate; leaves elliptic, acuminate at both ends, thick, membranous; panicles on long peduncles, trichotomously branched; throat of corolla bearded; stamens glabrous; anthers exerted.  

115 P. Citrirostris (Swartz, prod. p. 43. fl. ind. occ. 1. p. 398.) glabrous; leaves elliptic, acuminate, rather coriaceous; stipulas ovate, acuminate, permanent; pedicels short; branches of panicle opposite, trichotomously branched; throat of corolla villous; berries glabrous.  

116 P. Laurifolia (Swartz, prod. p. 43. fl. ind. occ. 1. p. 392.) glabrous; leaves lanceolate-ovate, thickish, shining; stipulas ovate, acuminate, deciduous; panicles cymose, erect, 4 G
trichotomous; filaments ciliated; anthers inclosed in the bearded throat; berries roundish. ])/ S. Native of Jamaica and Hispaniola. Corolla white, with acute lobes. Stipulas downy. Berries red, shining. Said to be allied to P. glabrata.

**Laurel-leaved Psychotria.** Fl. June, July. C1t. 1818. Shrub 4 to 5 feet.

117 P. BROWNIE (Spreng. syst. 3. p. 743.) glabrous; leaves elliptic, attenuated at both ends, rather coriaceous, paler beneath; stipulas ovate, hardly mucronate, caducous, length of petioles; panicles pedunculate, trichotomous, rising from the forks of the branches; berries ovate. ])/ S. Native of Porto-Rico, St. Thomas, and Jamaica. Browne, jam. p. 160. no. 17. f. 2. P. Asiatica, Lam. ill. t. 161. f. 1. Allied to P. Carthageniensis, but differs from it in the fruit being ovate, not oblong, and in the stamens being inclosed, and in the throat of the corolla being glabrous, ex icon. Browne.

**Browne's Psychotria.** Fl. July. C1t. 1806. Sh. 4 to 5 feet.

118 P. BALBISA (D. C. prod. 3. p. 517.) glabrous; leaves elliptic, acute at both ends, rather acuminated, stiffish; stipulas ovate, deciduous; peduncles rising from the forks of the branches or from their tops, equal in length to the leaves, corymbose and trichotomous at the apex; corolla with a villous throat, and having the lobes shorter than the tube. ])/ S. Native of Jamaica, where it was collected by Bertero. P. 1cida, Spreng. in herb. Balb. Leaves 3 inches long and 1½ broad. Corolla glabrous, except the throat, which is villous, 3 lines long. Berries ovate.

**Bals's Psychotria.** Shrub 4 to 6 feet.

119 P. REVOLUTA (D. C. prod. 3. p. 517.) glabrous; leaves elliptic, tapering to both ends, coriaceous, with revolute margins; stipulas oblong, rufous and membranous, deciduous; corollas terminal, pedunculate, trichotomous, hardly longer than the leaves; corolla with a subvillous throat, and having the lobes shorter than the tube. ])/ S. Native of St. Domingo, where it was collected by Bertero. P. glabra, ex Hispaniola, Spreng. syst. 1. p. 745. no. 65. Leaves 2 or 2½ inches long, and 12-15 lines broad. Petioles 3-4 lines long. Berries ovate.

**Revolute-leaved Psychotria.** Shrub 4 to 6 feet.

120 P. GLABRA (Swa7unt, prod. 3. p. 43. fl. ind. occ. 1. p. 390.) glabrous; leaves ovate, obtuse, shining; stipulas small, ovate, and acute, rusty, deciduous; panicle erect, with opposite branches; margin of calyx almost entire. ])/ S. Native of the interior of Jamaica, among rocks on the mountains. P. glabra, ex Jamaica, Spreng. P. Asiatica a, Poir. dict. 5. p. 696. but not of Lin. Allied to P. Asiatica, but is distinct according to Swartz. Corolla small, white, with a villous throat. Berries oblong.

**Glabrous Psychotria.** Fl. June, July. C1t. 1810. Shrub 4 to 6 feet.

121 P. EXSERTA (D. C. prod. 3. p. 517.) glabrous; leaves oblong, bluntish, cuneated at the base, coriaceous, shining above; stipulas lancelolate, acute, rather connate at the base, deciduous; corollas glabrous; anthers exerted. ])/ S. Native of St. Domingo, where it was collected by Bertero. P. coriacea ex Hispaniola, Spreng. syst. 1. p. 742. exclusive of the synonyms. Corolla tubular, 3 lines long, with very short bluntish lobes.

**Exserted-stamened Psychotria.** Shrub 3 to 4 feet.

122 P. PLATYPHYLLA (D. C. prod. 3. p. 517.) glabrous; stipulas bipartite, with triangular acute lobes; leaves elliptic, acuminate at both ends, membranous; branches tetragonal; panicles racemose, rather downy, one-half shorter than the leaves, with opposite branches; throat of corolla glabrous. ])/ S. Native of Porto-Rico. P. macrophylla, Vent. in herb. Deless. Leaves 8 inches long and 3 broad. Petioles 15-18 lines long. Flowers white.

**Broad-leaved Psychotria.** Shrub.

123 P. ORAPINIS (Swa7unt, prod. 3. p. 43. fl. ind. occ. 1. p. 471.) glabrous; leaves obovate, short-acuminate, cuneated at the base; stipulas deltoid, with revolute margins, subulate at the apex, permanent; branches angular; panicles large, pedunculate, with subverticillate branches. ])/ S. Native of Jamaica, in the interior and western parts of the island, among bushes on the mountains; and of Mexico, ex herb. Hamke. Leaves a foot and more long, and 3 inches broad. Branches of panicle compressed, usually ternately verticillate. Flowers numerous, small, white. Throat of corolla villous. Berries ovate.

**Great Psychotria.** Shrub 12 to 15 feet.

124 P. PEDUNCULATA (Swa7unt, prod. 3. p. 44. fl. ind. occ. 3. p. 427.) glabrous; leaves ovate-lanceolate, acute at the base, and acuminate at the apex, rather wrinkled; stipulas shorter than the petioles, bidenticate on both sides, permanent; peduncles longer than the leaves, cymose at the apex, dense-flowered. ])/ S. Native of the interior of Jamaica, in mountain woods. P. attenuata, Wild. Psychotropium, P. Browne, jam. p. 160. no. 4. Branches rather angular. Branches of panicle trichotomous, approximate. Corolla large, cylindrical, yellowish, with a naked throat. Berries glabrous, dark purple.

**Pedunculate Psychotria.** Fl. June, July. C1t. 1810. Tree 16 to 20 feet.

125 P. ANGUSTIFOLIA (Poir. dict. 5. p. 703.) glabrous; leaves narrow-lanceolate, usually obtuse at the base, and acuminate at the apex; stipulas bidenticate, acuminate; panicles erect, trichotomous at the apex, shorter than the leaves; berries glabre. ])/ S. Native of St. Domingo. Flowers unknown. Nerves of leaves and pedicels yellow. Leaves 2-3 inches long, and an inch broad. Border of calyx hardly toothed. Berries glabrous, dark purple.

**Narrow-leaved Psychotria.** Shrub 4 to 6 feet.

126 P. BARBATA (Poir. dict. 5. p. 704.) plant subherbaceous, glabrous; leaves ovate, acuminate, membranous; branches compressed, rather angular; panicles pedunculate, spreading; lobes of corolla obtuse; throat of corolla villous; anthers exerted. ])/ S. Native of Martinico. Leaves 2 inches long. Ramifications of panicle tern or dichotomous. Fruit unknown.

**Bearded-flowered Psychotria.** Shrub.

127 P. N'COLOR (Bredem. ex Wild. mss. in Rom. et Schultes, syst. 5. p. 191.) glabrous; leaves oblong-lanceolate, on short petioles; stipulas bidenticate, setose; flowers panicled; peduncles copper-coloured. ])/ S. Native of Martinico, on the banks of mountain streams. Perhaps the same as Psychotria cuneata.

**Two-coloured Psychotria.** Shrub.

* * * * * * * * * Species natives of South America, but in what particular localities is unknown.*

128 P. PHYTOLACCA (Poir. dict. 5. p. 704.) glabrous; leaves ovate, short-acuminate, petiolate, rather fleshy; panicles short, cymose; flowers crowded; fruit globose. ])/ S. Native of South America, ex Poir., St. Domingo, ex herb. Desf. Leaves like those of Phyto
caca. Flowers numerous, disposed in an irregular order.

**Phytolacca-leaved Psychotria.** Shrub.

129 P. CORIACEA (Poir. dict. 5. p. 703.) glabrous; leaves ovate-lanceolate, very coriaceous, shining; panicles few-flowered, much shorter than the leaves, dichotomous; corolla tubular; teeth of calyx and lobes of corolla obtuse. ])/ S. Native of South America. Stems blackish. Leaves 3-4 inches long, and 2 broad. Panicles yellowish, divided into 3-4 compressed branches, which are bifurcate at the apex. Perhaps a species of *Psychotria*.

**Coriaceous-leaved Psychotria.** Fl. June, Aug. C1t. 1810. Shrub 4 to 6 feet.

130 P. ARISTA (Wild. in Rom. et Schultes, syst. 5. p.
leaves oblong, acuminate at both ends, shining above, but downy on the veins beneath; stipulas connate, aristately dentate; panicles terminal, elongated; peduncles and pedicels hairy. \(? S. Native of South America, where it was collected by Humb. and Bonpl., but is unknown to Kunth.

**Armed-stipuled Psychotria.** Shrub.

131 P. spe'rendens (Spreng. syst. 1. p. 747.) leaves lanceolate, narrowed at the base, bluntish, shining; stipulas deciduous; corymbbs few-flowered, pedunculate, terminal. \(? S. Native of South America, at the Rio Negro, where it was collected by Humb. and Bonpl., but is unknown to Kunth. P. lucida, Willd. in Rœm. et Schultes, syst. 5. p. 189.

**Glittering-leaved Psychotria.** Shrub.

132 P. lamprophy'lla (Spreng. syst. 1. p. 747.) leaves narrow-lanceolate, elongated, tapering to both ends, coriaceous, shining above, quite glabrous and veinless beneath; stipulas short, caducous; panicles terminal, tripartite. \(? S. Native of South America. P. salicifolia, Willd. in Rœm. et Schultes, syst. 5. p. 190. The rest unknown.

**Shining-leaved Psychotria.** Shrub.

133 P. atten'ua'ta (Willd. in Rœm. et Schultes, syst. 5. p. 192.) leaves ovate-elliptic, long-acuminate, membranous; stipulas bidentate; cymes terminal. \(? S. Native of South America, where it was collected by Humb. and Bonpl., but is unknown to Kunth. It is joined with P. pedunculata by Sprengel, who is probably right.

**Attenuated-leaved Psychotria.** Shrub.

134 P. dich'o'toma (Willd. in Rœm. et Schultes, syst. 5. p. 518.) leaves ovate-oblong, acute; stipulas bifid; spikes dichotomous. \(? S. Native of South America, where it was collected by Humb. and Bonpl.

**Dichotomous-spiked Psychotria.** Shrub.

135 P. commu'na'ta (D. C. prod. 4. p. 518.) leaves elliptic, acute at both ends, rather membranous; stipulas oblong, obtuse, stem-clasping; cyme corymbose, terminal. \(? S. Native of South America. Humb. and Bonpl. P. elliptica, Willd. in Rœm. et Schultes, syst. 5. p. 189. but not of Ker.

**Changed Psychotria.** Shrub.

136 P. membrana'ce'a (Willd. in Rœm. et Schultes, syst. 5. p. 189.) leaves obovate-oblong, acuminate, membranous; stipulas ovate, acute. \(? S. Native of South America, where it was collected by Humb. and Bonpl.

**Membranaceous-leaved Psychotria.** Shrub.

******* Species natives of Africa.********

137 P. nu'beca (Caill. et Delli. pl. afr. p. 66.) leaves elliptic, glabrous above, acutish at both ends, with the nerves on the under surface prominent and downy; stipulas triangular; cyme terminal, with trifid crowded branches, which are downy, as well as the corollas; style much exerted. \(? S. Native of the north of Africa, in Nubia, at Singue. Teeth of calyx 5, obtuse, very short. Stigma turbinate, bifid. Tube of corolla campanulate. Fruit unknown.

**Nubian Psychotria.** Shrub.

138 P. ? pa'tho'bo'des (D. C. prod. 4. p. 518.) glabrous; leaves oblong, acute at both ends, coriaceous, petiolate; stipulas ovate, obtuse, deciduous, 4 times shorter than the petioles; panicles terminal, shorter than the leaves, with opposite branches; calyx truncate; corolla divided beyond the middle. \(? S. Native of the Mauritius, where it was collected by Bory de St. Vincent. The flowers are not well known; and the fruit is perfectly unknown.

**Paithura-like Psychotria.** Shrub.

139 P. ? obtusif'o'lia (Lam. ill. t. 161. f. 4. Poir. dict. 5. p. 67.) glabrous; leaves obovate, cuneate, very blunt, tapering into the very short petioles; stipulas twin on both sides, some-what concrete at the base, ending in linear points; corymbbs trifid, pedunculate, much shorter than the leaves, with the branchlets bearing crowded sessile flowers at the apex. \(? S. Native of Madagascar, where it is called *Maron-Pontou*. Leaves 4-5 inches long and 2 broad. Berries ovate, striated.

**Blunt-leaved Psychotria.** Shrub.

140 P. angustif'o'lia; leaves erect, nearly simple; leaves oval-lanceolate, entire, acuminate; flowers panicled, terminal. \(? S. Native of Sierra Leone, on the banks of rivulets. Flowers pale red.

**Narrow-leaved Psychotria.** Shrub.

******* Species natives of Asia.********

141 P. se'rendens (Lin. mant. p. 204.) plant suffruticose, much branched, twisted, glabrous; branchlets rather compressed, but at length becoming terete; leaves ovate, acute at both ends, coriaceous; stipulas ovate, obtuse, undivided, brown, deciduous; corymbbs pedunculate, triehotonous, terminal, having the peduncles and branchlets 2-edged; berries ovate. \(? G. Native of China and the East Indies.

**Serpentine-branched Psychotria.** Shrub 2 to 6 feet.

142 P. roxbur'ghii (D. C. prod. 4. p. 519.) branchlets opposite, complanate, downy, but becoming smooth at length; leaves elliptic, acuminate at both ends, membranous, shining above, downy on the nerves beneath, which are parallel; stipulas oval, about equal in length to the petioles, recurved at the apex, acutely bifid; panicles terminal, on short peduncles; pedicels downy, compressed, umbellate; lobes of calyx ciliated. \(? S. Native of the Moluccas. P. Asiatica, Lin. spec.? exclusive of the synonyms. Roxb. fl. ind. 2. p. 160. Leaves 8-10 inches long. Flowers very small, greenish. Bracteas small, lanceolate. Throat of corolla villous; anthers inclosed. Berries oval, 10-nerved (conforming to that in the figures of *Gaertn. fruct. 1. t. 25*, and Browne, jam. t. 17. f. 2.), deep red.

**Roxburgh's Psychotria.** Shrub.

143 P. spheroca'rina (Wall. in Roxb. fl. ind. 2. p. 161.) glabrous; branchlets compressed; leaves ovate-elliptic, acuminate, coriaceous, with parallel veins; stipulas ovate, about equal in length to the petioles, recurved at the apex, and acutely bifid; corymbbs pedunculate, compact, villous; teeth of calyx subulate; berries globose, smooth. \(? S. Native of the East Indies, on the hills near Silhet. Leaves 8-12 inches long, shining above. Flowers very small, crowded. Corolla densely bearded at the throat. Berries pale red, without ribs.

**Round-fruited Psychotria.** Shrub.

144 P. tru'xuca'ta (Wall. in Roxb. fl. ind. 2. p. 162.) glabrous; axils of petioles pilose; branchlets somewhat compressed; leaves elliptic, acute, attenuated at the base, coriaceous, foveolate in the axils of the veins beneath; stipulas broad-ovate, undivided, coriaceous, deciduous; corymbbs terminal, small, pedunculate, fleshy, bracteolate; limb of calyx truncate; throat of corolla bearded. \(? S. Native of the East Indies. Leaves 6-8 inches long and 6 broad. Petioles submarginate. Backs of stipulas depressed. Flowers rather large, by threes, intermediate ones sessile.

**Truncate-calyced Psychotria.** Shrub.

145 P. connu'atta (Wall. in Roxb. fl. ind. 2. p. 163.) glabrous; branchlets compressed; leaves lanceolate, acuminate, tapering much at the base, almost sessile, coriaceous; stipulas ovate, acutely cuspidate, longer than the petals, rather recurved at the apex; corymbbs terminal, ovate, long peduncles, with the first ramifications umbellate, the rest trichotonous; bracteas connate at the base, ciliated, slightly lobed; flowers by threes, sessile; throat of corolla bearded. \(? S. Native of the East Indies. Leaves foveolate in the axils of the nerves beneath. Peduncles rather compressed. Berries ovate, almost black, angular when dried.
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Connette-bracteate Psychotria. Shrub.

146 P. stipulacea (Wall. in Roxb. fl. ind. 2. p. 164.) glabrous; leaves oblong-lanceolate, acuminate, coriaceous, nerved, tapering at the base, almost sessile, smooth; stipules broad, triangular, expanded into foliaceous lamina at the apex; petals terminal, trichotomous, shorter than the leaves; pedicels compressed; flowers by threes, sessile; lobes of calyx obtuse. S. Native of Pulo-Penang. Leaves 7-10 inches long, somewhat glandular in the axils of the veins beneath. On the inside of the base of the stipules there is a tuft of hairs, which remains some time after the stipules have fallen. Corolla with a very short tube, and a bearded throat. Stamens exerted.

Large-stipuled Psychotria. Shrub.

147 P. reevesii (Wall. in Roxb. fl. ind. 2. p. 164.) glabrous; leaves oblong-lanceolate, acute at both ends, smooth, glaucous, coriaceous; stipulas broad-ovate, adpressed, with a rounded apex; petals terminal, oval, small, with decussate branches; limb of calyx truncate; corolla short, with a densely bearded throat. S. Native of China, from which place it was sent to the botanic garden at Calcutta by Mr. Reeves. Branches beset with copious small whitish dots, having the upper extremities slightly compressed. Leaves 6-7 inches long, a little wrinkled, foveolate in the axils of the veins beneath. Petals almost sessile. Bracteas deciduous. Flowers small, by threes, pea-green. Stamens concealed among the hairs in the throat of the corolla.

Reeves's Psychotria. Shrub.

148 P. aurantiaca (Wall. in Roxb. fl. ind. 2. p. 165.) glabrous; branches flattened; leaves lanceolate, acuminate, smooth, on short petioles; stipulas ovate, acuminate, deciduous; petals terminal, pedunculate, erect, with whorled branches; flowers by threes, middle ones sessile; limb of calyx truncate; corolla with a long tube, and a villose throat. S. Native of Pulo-Penang, Java, and Nusa-Kambanga. Blum. bijdr. p. 962. Leaves 5-7 inches long, dotted beneath. Stipulas ending in a long subulate acumen each. Peduncles compressed. Stamens exerted. Berries obovate, as large as a cherry stone, orange-coloured, ex Wall, but ovate, and 10-ribbed according to specimens from Java.

Orange-coloured-fruited Psychotria. Shrub.

149 P. denticulata (Wall. in Roxb. fl. ind. 2. p. 520.) stem ascending, with a creeping base, compressed at the apex; leaves ovate, short-acuminate, coriaceous, shining; stipulas ovate, acuminate, deciduous; subulate, with a toothed apex, downy outside, about equal in length to the petioles; petiolar sheaths many flowered, downy; teeth of calyx subulate; corolla rather rotate. S. Native of Nepaul, in the forest of Sanko. Stem purplish, undivided, or sparingly dichotomous. Leaves from 6-10 inches long, upper surface dark green, under pallid. Stipulas villous within at the base. Petiolar sheaths, downy. Throat of corolla slightly hairy. Teeth of calyx subulate. Berries globular, purple, size of currants.

Denticulated-stipuled Psychotria. Shrub creeping.

150 P. adenophylla (Wall. in Roxb. fl. ind. 2. p. 166.) glabrous; leaves lanceolate, acuminate, shining, with parallel nerves, which are glandular in the axils; stipulas ovate, blunt, connate at the base, deciduous; racemes terminal, cylindrical, a little branched at the base; peduncles compressed; bracteas rather acuminate. S. Native of the East Indies, in Silhet. The uppermost branches, dichotomous, and a little compressed. Leaves 3-4 inches long, pallid beneath. Pedicels flattened. Flowers greenish, in heaps, almost sessile. Corolla with a short tube, a villose throat, and acute segments.

Glandular-leaved Psychotria. Shrub.

151 P.? curviflora (Wall. in Roxb. fl. ind. 2. p. 167.) glabrous; branchlets terete; leaves lanceolate-oblong, long-acuminated, tapering much to the base, on long petioles, membranous, shining above, and pubescent on the nerves beneath, and glandular in the axils; stipulas ovate, obtuse, connate at the base, sometimes furnished with 1-2 teeth at the apex, with a series of adpressed hairs within their insertion, deciduous; racemes small, terminal, oval, compact, on short peduncles, much shorter than the leaves; corolla long, slender, tubular, with an incurved border. S. Native of Pulo-Penang. Petioles long. Racemes smooth, consisting of opposite approximate more or less compound fascicles of long sessile flowers. Corollas nearly an inch long, with lanceolate acute lobes, and a naked throat. Antlers exerted. Filaments inserted near the middle of the corolline tube. Perhaps a species of Chasalia or Palicourea.

Cupular-flowered Psychotria. Shrub.

152 P. ohioxyloides (Wall. in Roxb. fl. ind. 2. p. 168.) smooth, climbing, dichotomous; leaves lanceolate, on short petioles, acuminate; stipulas ovate, drawn out at the apex into an acumen, which is often bifid; corollas terminal, deciduous; corollas long, slender, tubular, with incurved lobes. S. Native of Silhet, in the East Indies. Leaves smooth, acute at the base, about 5 inches long. Perhaps a species of Chasalia or Palicourea.

Snake-wood-like Psychotria. Shrub cl.

153 P. polynneura (D.C. prodr. 4. p. 520.) glabrous; branchlets and peduncles compressed; leaves elliptic-ovate, short-acuminate, coriaceous, with usually 2 pairs of opposite lateral nerves; stipulas ovate, drawn out into a long setaceous acumen, deciduous; corollas terminal, pedunculate, one half shorter than the leaves; limb of the calyx 5 short teeth; corolla short, with a smoothish throat. S. Native of Nepaul, where it was collected by Wallich. It agrees with P. aurantiaca in the stipulas, but differs from that plant in the short corollas, &c.; and from P. nervosa in the teeth of the calyx being acute, not obtuse, nor membranous.

Many-nerved-leaved Psychotria. Shrub.

154 P. Wallischiaca (Spreng. err. p. 79.) leaves ovate, acuminate, serrated, nervd, glabrous; corolla simple; teeth of the calyx rounded, membranous; petiolar sheaths, glomerate. S. Native of Nepaul, Wallich. P. nervosa, D. Don, prodr. fl. nep. p. 137, but not of Swartz.

Wallich's Psychotria. Shrub.

155 P. vaginatis (D.C. prodr. 4. p. 520.) glabrous; leaves ovate-oblong, cuspidate at the apex, attenuated at the base; stipulas entire, foliaceous, combined into a sheath-like tube, which is bifid at the apex, having the lobes bidentate at the apex, in front of the leaves; peduncles terminal, pedunculate, downy, with the rachis compressed, and the branchlets opposite; limb of the calyx broadly campanulate, truncate. S. Native of Ceylon. Ophioxyylon arboreum, Koen. in herb. Royen. Bracteas short, acuminate, spreading. Fruit unknown. Perhaps a species of Chioecica.

Sheathed-stipuled Psychotria. Shrub.

156 P. Malaya (Jack, in mal. misc. 1. no. 1. p. 3.) leaves broad-lanceolate, stipulas undivided; peduncles terminal, coriaceous; throat of the corolla bearded. S. Native of Pulo-Penang, where it is called Byunumba by the Malayas. Corolla white, with a greenish limb.

Malaya Psychotria. Shrub.

157 P. turritis (Blum. bijdr. p. 958.) stem herbaceous, creeping at the base; leaves ovate-oblong, attenuated, smooth above, reticulated beneath, and rather tomentose; stipulas ovate, bifid; cymes compound, pedunculate, axillary, rarely terminal; flowers secund; peduncles 1-ribbed. S. Native of Java, on the mountains, in humid places. Berries globose, ribbed. Perhaps belonging to the first section of the genus.
Twisted-stemmed Psychotria. Pl. creeping.

158 P. dicervis (Blum. bijdr. p. 95b.) leaves oblong-lanceolate, acuminate at both ends, coriaceous, glabrous above, pubescent below, and downy on the veins; stipulas bifid, ciliated, rather shorter than the petioles; corymb terminal, trichotomous; corollas funnel-shaped; drupes oval, dry, ribbed. S. Native of Java, on the higher mountains, in woods. P. divaricata, Blum. cat. hort. bult. p. 53. but not of Swartz.

Diverging Psychotria. Shrub.

159 P. le'aida (Blum. bijdr. p. 950.) leaves lanceolate-oblong, acuminate, rather membranous, glabrous; stipulas broad-ovate, short, bidentate, adpressed; corymb terminal, trichotomous; flowers densely crowded, sessile; calyxes obliquely 5-toothed, and are, as well as the peduncles, coloured; tube of the corolla elongated; drupes globose. S. Native of the West of Java, frequent in humid, shady places. Peduncles thickened at length. Pyrenea 1-ribbed on the back, and fenestrate inside. Newly allied to P. corymbosa and P. sphaerocarpa.—There is a variety of this with oblong-lanceolate leaves.

Lurid Psychotria. Shrub.

160 P. pandarussaefolia (Blum. bijdr. p. 960.) leaves on short petioles, linear-lanceolate, acuminate at both ends, membranous, glabrous; stipulas ovate, acute, bidentate; cymes terminal and axillary, dense, trifid. S. Native of the Island of Java, in the province of Bantam, among bushes. Leaves 5 inches long, and 6-7 lines broad.

Gandarussa-leaved Psychotria. Shrub.

161 P. montana (Blum. bijdr. p. 960.) leaves oblong, acuminate at both ends, membranous, glabrous; stipulas intraxillary, membranous, clasping the petioles; flowers terminal, umbellately corymbose; limb of the calyx urceolate, obliquely 5-toothed; corolla with a short sub-cylindrical tube; drupes elliptic-globose; pyrenea wrinkled, with one furrow on the back. S. Native of the Island of Java, in shady places, on Mount Salak. Allied to P. montana and P. tetrandra.

Beaked Psychotria. Shrub.

162 P. tetrandra (Blum. bijdr. p. 961.) leaves on short petioles, oblong-lanceolate, much acuminate, membranous, glabrous; stipulas short, rather connate; cymes pedunculate, terminal, 3-5 parted; flowers sub-umbellate; calyxes obliquely 5-toothed; tube of the corolla somewhat campanulate; drupes nearly globose, furrowed when dry. S. Native of Java, in mountains.

Mountain Psychotria. Shrub.

163 P. rostrata (Blum. bijdr. p. 961.) leaves on short petioles, oblong-lanceolate, much acuminate, membranous, glabrous; stipulas short, rather connate; cymes pedunculate, terminal, 3-5 parted; flowers sub-umbellate; calyxes obliquely 5-toothed; corolla with a short cylindrical tube; drupes nearly globose; pyrenea smooth, obliquely 1-ribbed. S. Native of Java, in shady places, on Mount Salak. Allied to P. montana and P. tetrandra.

Beaked Psychotria. Shrub.

164 P. tetrandra (Blum. bijdr. p. 961.) leaves on short petioles, oblong, acuminate at both ends, membranous, glabrous, reticulated beneath; stipulas short, acute; cymes pedunculate, terminal; flowers tetrandrous; drupes nearly globose, ribbed in the dry state. S. Native of Java, in woods on Mounts Salak and Seribu, &c. Sides of the leaves unequal.

Tetrandrous-flowered Psychotria. Shrub.

165 P. rhinoceros (Reinw. in Blum. bijdr. p. 961.) leaves cuneate-oblong, acute, coriaceous, glabrous above, tomentose beneath; corymb terminal, tomentose; stipulas bifid, or trifid; flowers capitate; tube of the corolla sub-campanulate; drupes ovate-globose, furrowed in the dried state. S. Native of Java and Nusa-Kambanga, in humid parts of woods.

Rhinoceros Psychotria. Shrub.

166 P. rostrata (Blum. bijdr. p. 962.) leaves obovate, or cuneate-oblong, acuminate, coriaceous, glabrous; stipulas intraxillary, acuminate, connate at the base, and clasping the petioles; panicles terminal, with whorled branches; limb of the calyx urceolate, obliquely 5-toothed; tube of the corolla short, cylindrical. S. Native of Java, on the mountains. P. latifolia, Blum. cat. hort. bult. p. 54. but not of Wild.

Robust Psychotria. Shrub.

167 P. viridiflora (Reinw. in Blum. bijdr. p. 963.) leaves oblong-lanceolate, acuminate at both ends, membranous, glabrous; stipulas ovate, obtuse, with membranous margins, ciliated at the base; corymb terminal, divaricately trichotomous; calyxes oblong; tube of the corolla short, cylindrical; drupes nearly globose, somewhat 10-ribbed in the dry state. S. Native of Java, in humid places among bushes. Allied to P. stipulacea, Wall.

Green-flowered Psychotria. Shrub.

168 P. expansa (Blum. bijdr. p. 963.) leaves elliptic-oblong, acuminate at both ends, membranous, connate at the base; cymes pedunculate, terminal, 3-5 parted; flowers sub-umbellate; calyxes obliquely 5-toothed; tube of the corolla short, cylindrical. S. Native of Java, at the foot of Mount Salak. Leaves rather large.

Expanded Psychotria. Shrub.

169 P. laxiflora (Blum. bijdr. p. 964.) stem radicant and climbing; leaves on short petioles, elliptic-oblong, attenuated at both ends, membranous, glabrous; stipulas connate; corymb terminal, divaricately, trichotomous; tube of the corolla funnel-shaped; drupes elliptic-globose, furrowed when dry. S. Native of Java, in mountain woods.

Lax-flowered Psychotria. Shrub.

170 P. sarmantosa (Blum. bijdr. p. 964.) stem radicant and climbing; leaves on short petioles, lanceolate, acuminate at both ends, finely veined, coriaceous, glabrous; stipulas connate; corymb terminal, divaricately, trichotomous; tube of the corolla funnel-shaped; drupes elliptic-globose, furrowed when dry. S. Native of Java, in woods on the higher mountains. Allied to P. parasitica, Swartz.

Sarmantino Psychotria. Shrub.

171 P. leucopappa (Blum. bijdr. p. 964.) stem radicant and climbing; leaves on short petioles, oblong-lanceolate, acuminate at both ends, coriaceous, glabrous, terminal ones verticillately approximate; stipulas connate; corymb terminal, trifid; flowers capitate; drupes globose; pyrenea smooth on the back. S. Native of Java, in woods on the mountains of Seribu. Allied to P. sarmantosa.

White-fruited Psychotria. Shrub.

172 P. parviflora (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 522.) glabrous; branchlets compressed; leaves narrow-oblong, acute, tapering much at the base, rather coriaceous, glaucous; stipulas lanceolate, elongated, deciduous; corymb terminal, trifid to the base, having the branches bearing from 1 to 3 flowers; calyx truncate; fruit obovate. S. Native of the Island of Luzon. Colour of the leaves and habit almost of P. alba.

Few-flowered Psychotria. Shrub.

173 P. ixoroides (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 522.) glabrous; branchlets compressed; leaves oblong, tapering much at the base, short-acuminate at the apex, glaucous, hardly veined beneath; stipulas triangularly ovate, acute, deciduous; corymb terminal, downy, pedunculate, trifid, with compact many-flowered branches; limb of the calyx with 5 short acute teeth; fruit globose. S. Native of the Island of Luzon.

Izora-like Psychotria. Shrub.
shorter than the leaves, twice trifid; flowers sessile in the forks, and on the tops of the branches of the cyme; limb of the calyx campanulate, truncate, or bluntly toothed, and at length cleft irregularly. Ê. S. Native of Marianne Island. Corolla short, campanulate, but obovate in the bud state. Fruit unknown. Marianne Psychotria. Shrub.

175 P. MEMBRANIFOLIA (Bartl. in herb. Henke, ex D. C. prod. 4. p. 522.) glabrous; leaves ovate-oblong and oval, short-acuminated, membranous, veiny beneath; stipulas membranous, acutely bidentate, erosive; panicles terminal, contracted, corymbiform, almost sessile, much shorter than the leaves; anthers exserted. Ê. S. Native of the Islands of Luzon and Sozogon, in the Philippine Archipelago. The leaves in the specimens from the Island of Luzon are more oblong and more acuminate at both ends than those from Sozogon.

Membrane-leaved Psychotria. Shrub.

176 P. LINEARIS (Bartl. in herb. Henke, ex D. C. prod. 4. p. 522.) branches terete, and are, as well as the panicles, petals, and leaves, especially on the nerves on the under surfaces, beset with rusty hairs; leaves long-linear, glabrous above; stipulas membranous, ovate, acuminate, caducous; flowers crowded in terminal fascicles, on short pedicels; calyx rather truncate; corolla villous, fruit obovate. Ê. S. Native of the Island of Manilla, near Sozogon.

Linear-leaved Psychotria. Shrub.

177 P. MANILLENSIS (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 522.) glabrous; branches rather compressed; leaves elliptic-oblong; acuminate, attenuated at the base, rather coriaceous, of a different colour beneath; stipulas ovate; acute, combined into a short ring at the base, deciduous; corollas tripartite, hardly pedunculate, with elongated branches, which are twice trifid at the apex; fruit obovate-oblong. Ê. S. Native of the Island of Manilla, near Sozogon.

Manilla Psychotria. Shrub.

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* * * * * * * * * Species natives of Australia.

178 P. COLLINA (Labill. sert. caled. p. 47. t. 47.) glabrous; branches nearly terete; leaves lanceolate-oblong, attenuated at both ends; stipulas ovate, caducous; corymbs terminal, on short peduncles, shorter than the leaves, trichotomous; peduncles compressed; style bifid beyond the middle; berries roundish. Ê. S. Native of New Caledonia.

Hill Psychotria. Shrub.

179 P. LONICEROIDES (Sieb. nov. holl. exsic. no. 263.) every part of the plant is clothed with rusty hairs; leaves elliptic or oblong, acutish at both ends; stipulas lanceolate, acuminate, deciduous; panicles terminal, a little shorter than the leaves, with opposite distant branches, which are trifid, or twice trifid at the apex, with a sessile flower in each fork; bracteas ovate, acute; berries ovate, crowned by the 5-toothed calyx. Ê. S. Native of New Holland. It is very like P. hissuta of Swartz, with which it is joined by Sprengel, in his cur. post., but is still very distinct.

Honeysuckle-like Psychotria. Shrub.

180 P. SPECIOSA (Först. prod. 89.) arborescent; leaves oblong-lanceolate, involucrum terminal, usually 3-flowered. Ê. S. Native of Otaheite. Cephalis especiosa, Spreng. syst. 1. p. 749.

Showy Psychotria. Shrub.

181 P. DAPHNOIDES (Cunningh. in bot. mag. 3228.) shrub dichotomous, glabrous; branches very leafy at ends; leaves ob-ovate; stipulas nearly orbicular, bidentate, small; corollas terminal, few-flowered; mouth of corolla villous. Ê. G. Native of New Holland. Flowers pure white.


Cult. All the species of Psychotria are of the most easy culture and propagation. They grow best in a mixture of loam, peat and sand; and cuttings will strike root readily, if planted in sand, with a hand-glass over them. Some of them bear handsome foliage, but the flowers of all are insignificant.

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CLXII. ANTONIA (named in compliment to the Archduke Antony of Austria, a promoter of botany). Pohl, pl. bras. 2. p. 13. t. 109.

L. syn. PENTANDRIA, MONOGYNIA. Calyx with an oblong-cylindrical tube, which is covered by scales, and a 5-parted limb. Corolla funnel-shaped, with a bearded throat, and a 5-parted limb; segments lanceolate, acute, at length reflexed. Stamens 5, exserted, bearded at the base. Style long, filiform, thickened towards the apex; stigma bifid, obtuse. Berries oblong, 2-celled.—Shrub middle-sized. Leaves decussately opposite. Stipulas interpetiolar. Cymes terminal, many-flowered. Flowers by threes, white.

1 A. OVA'TA (Pohl, l. c. 2. p. 14. t. 109.) leaves ovate-elliptic, quite glabrous, as well as the branches. Ê. S. Native of Brazil, among bushes in dry places, about Joxe de Tocantins, in the province of Goiay.

Ovate-leaved Antonia. Shrub 5 feet.

Cult. For culture and propagation see Psychotria above.

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L. syn. PENTANDRIA, MONOGYNIA. All as in Psychotria, but differing in the corolla being tubular, nearly cylindrical, curved or gibbous on one side at the base, shortly 5-cleft at the apex, and bearded beneath the middle inside. Teeth of the calyx and lobes of the corolla sometimes rather unequal.—Glabrous shrubs, all natives of America. Leaves opposite, rarely verticillate, usually large. Stipulas connected in various ways. Panicles terminal, sometimes elongated, sometimes thyrsoïd, and sometimes cymose, sessile, but usually pedunculate. Corollas yellow or white. Anthers exserted or inclosed, either inserted in the bottom, middle, or upper part of the tube of the corolla. Flowers variable, rarely with a 3-celled ovary and 3-lobed stigma.

§ 1. Flowers corymbose or cymose.

1 P. SELLOWIANA (D. C. prod. 4. p. 532.) glabrous; branches terete; leaves elliptic, acute at both ends, with undulated margins, on long pedios; stipulas bluntly bidentate, with a large blunt recess; panicles cymose, fastigiate, with angularly compressed branches; corollas glabrous; stamens inclosed; fruit roundish-ovate. Ê. S. Native of Brazil, about Rio Janeiro, where it was collected by Sello. P. fastigiata, Cham. et Schlcht. in Linnaea. 4. p. 16. but not of Kunth.

Sello's Palicourea. Shrub 6 to 8 feet.

2 P. FASTIGIATA (H. B. et Kunth, nov. gen. amer. 3. p. 368. but not of St. Hil.) glabrous; branches rather tetragonal; leaves elliptic, or ovate-oblong, acuminate, acute at the base, membranous; stipulas bidentate; corymbs pedunculate; flowers on long pedicels, somewhat fastigiate, glabrous; fruit ovate, nearly globose. Ê. S. Native on the banks of the Orinoco, near Aruas. Psychotria fastigiata, Spreng. syst. 1. p. 742. exclusive of the synonyme of Willd.

Fastigiate-flowered Palicourea. Shrub 6 to 8 feet.

3 P. TABERNFOLIA (D. C. prod. 4. p. 532.) glabrous; branches terete; leaves large, soft, lanceolate, acuminate, petiolate; stipulas unknown; panicles almost cymose, short; segments of the calyx subulate; tube of the corolla slender, with
lanceolate lobes. 7 S. Native of St. Domingo. Psychotria tabernaemontana. Poir. dict. 5. p. 704. Flowers cream-coloured, hardly half an inch long.

Tent-leaved Palicourea. Shrub 4 to 6 feet.

4 P. reevesiana (D. C. l. c.) glabrous; branches terete; leaves elliptic-oblong, acuminate, acute at the base; stipulas twin on both sides, acute, small, hardly joined by a ligula; pedicels pedunculate, terminal; peduncles trichotomous, compressed; corollas bluntly 4-cleft, clothed with powdery tomentum. 7 S. Native of Brazil.

Hairy-flowered Palicourea. Shrub.

5 P. margarettii (St. Hil. pl. rem. bras. p. 281. t. 122. f. A.) branches somewhat tetragonal; leaves oblong, acuminate, bluntest at the base, on short petioles; stipulas trifid?; cymes pedunculate, downy; racis and branches angular; corollas cylindrical, with 5 very short blunt teeth, clothed with papillose tomentum. 7 S. Native of Brazil, on the edges of woods. Ero da rato, Marcr. bras. 60. f. 2. Galvânia, no. 2. Vell. miss. ex St. Hil. Galvânia Velllosi, Rum. et Schultes, syst. 5. p. 193. Peduncles of a coppery scarlet colour. Corollas of a yellowish colour at the base, purple and at the apex.

Var. β, pubescens (D. C. prod. 4. p. 525.) leaves downy beneath. 7 S. Native along with the species. St. Hil. l. c. and Cham. et Schliecht. in Linnaea. vol. 4.

Marcgrav's Palicourea. Shrub 2 to 3 feet.

6 P. apicata (H. B. et Kunth, nov. gen. amer. 3. p. 367. t. 283.) glabrous; branches terete; leaves oblong, short-acuminate, narrow at the base, coriaceous; stipulas connate, binate, longer than the petioles; pedicels cymose, sessile; corollas glabrous; fruit rather turbinate, crowned by a permanent urceolus. 7 S. Native of Caracas, on Mount Silla de Caracas. Psychotria lineata, Willd. in Rum. et Schultes, syst. 5. p. 191. Corolla evidently venose at the base. Fruit sometimes 3-celled, and the stigma trifid.


7 P. pavetta (D. C. prod. 4. p. 525.) glabrous; branches terete; leaves ovate-lanceolate, acuminate, thin, nervled; stipulas membranous, binate; corymbs terminal, pedunculate, with bracteate trichotomous branches; corolla funnel-shaped, curved a little; anthers inclosed; fruit roundish, didymous. 7 S. Native of Jamaica, on the mountains in woods. Psychotria pavetta, Swartz, prod. 45. Lam. ill. t. 161. f. 3. Pavetta pentandra, Swartz, fl. ind. occ. p. 1. 293. Ceitron nervosum, Mill. dict.—Sloane, hist. jam. 2. t. 202. f. 2.—Plum. ed. Burm. t. 156. f. 1. Flowers white, very sweet-scented, with spreading acute lobes. This is certainly not a species of Pavetta, from the style not being exserted, nor a Psychotria, from the tube of the corolla being elongated and a little curved.

Pavetta-like Palicourea. Shrub 2 to 3 feet.

8 P. tinctoria (Rum. et Schultes, syst. 5. p. 194.) glabrous; leaves oblong, acuminate, coriaceous, foveolate in the axils of the veins beneath; stipulas lanceolate, connate at the base; pedicels on short peduncles, sub-corymbose, bractiace, throat of the corolla bearded; filaments hairy, fruit roundish. 7 S. Native of Peru, in forests on the Andes, ex Ruiz et Pav.; and at Guayaquil, ex Henke. Psychotria tinctoria, Ruiz et Pav. fl. per. 2. p. 62. t. 211. f. a. Spreng. syst. 1. p. 745. exclusive of the synonyme of Burtli. in herb. Henke. Stipulas glandular at the base. Peduncles rather tetragonial. Bracteae small, acute. Flowers sessile, usually by threes. Calyx yellowish. Corollas white or cream-coloured, with a reflexed limb. Fruit globose, rufescent. This species yields a red dye.

Var. β; leaves ovate. 7 S. Native about Guayaquil, ex Henke.

Dyers' Palicourea. Tree 18 to 28 feet.

9 P. xanthina (D. C. prod. 4. p. 525.) glabrous; branches terete; leaves ovate or oval-lanceolate, acute at the base, acuminate at the apex, membranous, on short petioles; stipulas very short, somewhat binate; corymbs pedunculate, terminal, rarely axillary, trichotomous, bracteless; corollas downy on the outside, curved; anthers a little exerted. 7 S. Native of French Guiana, where it was collected by Patris. Branches and peduncles yellow. Berries nearly globose, didymous, ribbed.

Yellow Palicourea. Shrub 5 to 6 feet.

10 P. fusca (D. C. prod. 4. p. 526.) glabrous; branches nearly terete, rufescent; leaves oblong-lanceolate, acute, shining on both surfaces; stipulas twin on both sides, subulate, connected by a short ligula; pedicels corymbose, pedunculate, of a scarlet colour; corollas urceolate; berries roundish, didymous. 7 S. Native of Peru, in forests on the Andes. Psychotria punicea, Ruiz et Pav. fl. per. 2. p. 62. t. 42. f. a. Leaves 9 inches long, undulated. Bracteae subulate. Flowers glomerate. Corolla of a purplish scarlet colour, with a short tube, and ovate acute segments.

Scarlet-corymbed Palicourea. Shrub 6 feet.

11 P. crocea (Rum. et Schultes, syst. 5. p. 193.) glabrous; leaves ovate or oval-lanceolate, acuminate, stiillus; stipulas connected by a short ligula, twin on both sides, linear, acuminate, one half shorter than the petioles; pedicels corymbose, terminal; corollas obconically tubular; anthers exserted from the tube, but shorter than the limb; berries rather didymous. 7 S. Native of Porto-Rico, Trinidad, Cuba, Guadaloupe, &c. Psychotria crocea, Swartz, fl. ind. occ. p. 429. Sieb. fl. trin. no. 28. Meyer, eseq. 1. p. 105.?—Browne, jam. t. 13. f. 1. Leaves with prominent veins. Pedicels and peduncles suffused salmon-colored.


12 P. pedunculosa (D. C. prod. 4. p. 526,) glabrous; leaves elliptic-oblong, acuminated at both ends, and somewhat cuspidate at the apex, stiillus; stipulas ovate, deciduous; pedicels corymbose, on long peduncles, with opposite branches; corolla funnel-shaped, glabrous, with revolute lobes; fruit ovate-globose. 7 S. Native of French Guiana, where it was collected by Patris. Psychotria pedunculosa, Rich. act. soc. hist. nat. par. 1792. p. 107.?—Pâlicéria Cayennennsis, Desv. in Ham. prod. fl. ind. occ. p. 29.?

Long-peduncled Palicourea. Shrub 4 to 6 feet.

13 P. chona'nta (D. C. l. c.) glabrous; leaves ovate, ending in a short point at the apex, hardly acute at the base, stiillus; stipulas ovate, at length deciduous; pedicels corymbose, pedunculate, shorter than the leaves, with opposite branches; corolla funnel-shaped, glabrous, on the outside; anthers exserted; fruit obovate, pear-shaped, ribbed. 7 S. Native of Brazil, about Bahia, where it was gathered by Saltmann, G. Don, &c. Corollas snow-white, tubular, with linear-lanceolate lobes, and a villoz throat. Stigma bifid. Lobes compressed.

Snow-flowered Palicourea. Shrub 4 to 6 feet.

14 P. umbellata (D. C. l. c.) glabrous; branches trigonal or tetragonal; leaves elliptic-oblong, acuminated, attenuated at the base, stiillus, nervled, on short petioles; stipulas connected, sheathing, short, coriaceous, with 2 short teeth on both sides; corymbs pedunculate, sub-umbellate, composed of 5-7 branches, which rise almost from the same point, and are corymbose branched at their tops; calyx acutely 5-toothed. 7 S. Native of French Guiana, where it was collected by Patris. On the same branch there is often opposite leaves, or 3-4 in a whorl. Stigma 3-cleft in many of the flowers.

Umbellate-corymbed Palicourea. Shrub 4 to 6 feet.
§ 2. Flowers panicled.  

* Leaves disposed in whorles.  

15 P. trifylla (D. C. prod. 4. p. 526.) glabrous; leaves in a whorl, elliptic-oblong, acuminate at both ends, hardly petiolate; stipulas twin on both sides, linear-subulate, hardly joined at the base, longer than the petioles; racemes terminal, pedunculate, downy, somewhat paniculate, longer than the leaves.  

* S. Native of French Guiana, where it was collected by Patris. Leaves 4-5 inches long, and ½ broad. Raceme, along with the peduncle, 6 inches long. Fruit rather compressed, coarsely ribbed. Corolla unknown, hence the genus is doubtful.  

Three-leaved Palicourea. Shrub.  

16 P. verticillata (D. C. l. c.) branchlets tetragonal, glabrous; leaves in a whorl, lanceolate-oblong, quite glabrous, on short petioles; stipulas bifid; panicles pedunculate, downy; rachis of the panicle triquetrous, and the branchlets are angularly compressed; corollas glabrous; fruit orbicular-oblong.  


Whorled-leaved Palicourea. Shrub 5 to 6 feet.  

17 P. quadrifolia (Rudge, pl. guian. p. 27. t. 42.) stem tetragonal; leaves in a whorl, oblong-lanceolate, acuminate; stipulas intratetraphyllous, sheathing; coriaceous many-flowered; peduncles a little shorter than the leaves.  

* S. Native of French Guiana.  

Four-leaved Palicourea. Shrub.  

18 P. tetrapterxa (Cham. et Schlecht. in Linnae. 4. p. 171.) branchlets bluntly tetragonal, smooth; leaves in a whorl, ovate, or lanceolate-oblong, attenuated at both ends, softish, on short petioles, glabrous above, and downy beneath; stipulas bifid, with the lobes lanceolate, acute, and ciliate; panicles terminal, pyramidal, large, pedunculate, downy; corollas glabrous on the outside.  

* S. Native of tropical Brazil.  

Tetraphyllous Palicourea. Shrub 4 to 6 feet.  

** Leaves opposite, more or less petiolate.  

19 P. macrobotrys (D. C. prod. 4. p. 527.) branchlets tetrate, glabrous; leaves long-lanceolate, acuminate, clothed with velvety down beneath; stipulas twin on both sides, hardly connected at the base, ovate-lanceolate; panicles elongated, much longer than the leaves, clothed with velvety down; rachis somewhat tetragonal.  


Long-racemed Palicourea. Shrub 10 to 12 feet.  

20 P. macrocarpa (H. B. et Kunth, nov. gen. amer. 3. p. 369.) branchlets tetrate, glabrous; leaves obovate-oblong, short-acuminated, cuneated at the base, rather coriaceous, glabrous above, and hairy on the veins beneath; stipulas bifid, glabrous; panicles pedunculate, spreading; corollas glabrous; fruit nearly globose.  

* S. Native of New Granada, in hot places. Psychotria anacardifolia, Willd. in Reem. et Schultes, syst. 5. p. 190. Distinct from P. macrobotrys, with which it is joined by Sprengel.  

Long-fruited Palicourea. Shrub 6 to 7 feet.  

21 P. amethystina (D. C. prod. 4. p. 527.) branchlets somewhat tetragonal, rather hairy; leaves oblong-lanceolate, acuminate, glabrous above, and villous on the nerves and veins beneath; stipulas connected together almost to the middle into a sheath, and drawn out into 2 subulate teeth on each side; panicles hairy, a little longer than the leaves; bracteoles subulate; fruit oval.  


Blue-berried Palicourea. Shrub 10 to 12 feet.  

22 P. longibracteata (D. C. prod. 4. p. 507.) branchlets slightly tetragonal, smoothish; leaves oblong, acuminate, on short petioles, clothed with villous down on both surfaces; stipulas connate at the base a little way, twin on both sides, linear, acuminate; panicles longer than the leaves, hairy; bracteoles elongated, rather foliaceous; berries roundish, compressed.  

* S. Native of Panama. Psychotria amethystina longibracteata, Bartl. in herb. Henke. Very like P. amethystina, but differs in the petals being 1-2 lines long, not 11-12; and in the stipules not being glandular at the base, and connected only a very short way. Berries glosseye, blue. Corollas blue?  

Long-bracteate Palicourea. Shrub 6 to 8 feet.  

23 P. obovata (D. C. l. c.) branchlets bluntly tetragonal; leaves obvolute, acuminate, large, veiny, downy on the nerves and veins beneath; stipulas connected, ovate, with 2 short blunt lobes on each side; panicles thyrsoid, downy, bractiate, longer than the leaves; calyx ciliatis; corolla tubular; berries glabrous.  

* S. Native of Peru, on the Andes in forests at Chincho and Pilião. Psychotria obovata, Ruíz et Pav. fl. per. 2. p. 58. t. 204. f. a. Leaves a foot long. Stipulas glabrous at the base. Corollas purple, villous inside. Berries purple, almost globular.  

Obovate-leaved Palicourea. Shrub 8 to 10 feet.  

24 P. sitris (D. C. l. c.) branchlets bluntly tetragonal; leaves lanceolate, acute at both ends, very soft and probably velvety above, and glabrous beneath; stipulas connate at the base, ovate, emarginate, with very blunt teeth; panicles divaricate, hardly longer than the leaves; corollas funneled-shaped.  


Mild-leaved Palicourea. Shrub.  

25 P. l½x (Reem. et Schultes, syst. 5. p. 195.) glabrous; branchlets tetragonal; leaves oblong, acuminate, shining above; stipulas smooth, bifid, with ovate obtuse lobes; panicles long, loose, when in flower erect, but when bearing the fruit pendulous; bracteas long, reflexed.  


Loose-flowered Palicourea. Shrub 8 to 10 feet.  

26 P. hyacinthiflora (Reem. et Schultes, syst. 5. p. 194.) glabrous; branchlets bluntly tetragonal; leaves large, obovate, acuminate; stipulas bifid, with the lobes ovate, obtuse; panicles length of leaves; peduncles bractiate; bracteas small, oval; corolla funnel-shaped, with long revolute lobes.  


Hyacinth-flowered Palicourea. Shrub 10 to 12 feet.  

27 P. ceure (Reem. et Schultes, syst. 5. p. 194.) glabrous;
leaves lanceolate, acuminate, spreadingly deflexed; stipulas ovate, undivided, one-half shorter than the petioles; branches of panicle opposite, lower and ultimate ones rising from the axils; flowers crowded at the tops of the branches of the panicle; corolla funnel-shaped, with revolute lobes; berries turbinate. 5. S. Native of Peru, on the Andes in forests at Vitoe. Psychotria bellflora., Ruiz et Pav. fl. per. 2. p. 56. t. 213. f. b. Branchlets terete. Leaves 8-9 inches long. Corollas yellowish. Stamens inserted below into the middle of the tube. Berries blue, pear-shaped, size of peas.

Blue-berryed Palicourea. Shrub 9 to 10 feet.

28 P. sulphurea (D. C. prod. 4. p. 528.) glabrous; branchlets bluntly tetragonal; leaves obovate-cuneated, terminating in a short blunt point, coriaceous, nerving, shining above; stipulas bluntly 2-lobed, somewhat connected at the base; panicle loose, rather longer than the leaves; corollas funnel-shaped; fruit roundish. 5. S. Native of Peru, on the Andes in forests. Psychotria sulphurea., Ruiz et Pav. fl. per. 2. p. 56. t. 203. f. a. Leaves yellowish, 6 inches long. Bractens subulate. Corolla sulphur-coloured, having the tube villous inside below the throat. The shrub is very villous, and affords a yellow dye, which is used by the natives in the places of its natural growth.

Sulphur-coloured-flowered Palicourea. Shrub 10 to 12 feet.

29 P. flavescens (H. B. et Kunth, nov. gen. amer. 3. p. 366.) branchlets rather tetragonal, villous; leaves oblong, acuminate, narrowed at the base, rather coriaceous, downy or hairy above, and clothed with golden yellow hairy tomentum beneath, and particularly so on the nerves; stipulas villous, combined, terete; teeth subulate; panicles sessile; corolla hairy. 5. S. Native of Peru, in temperate places. Psychotria flavescens, Spreng. syst. 1. p. 744.

Yellowish Palicourea. Shrub 8 to 10 feet.

30 P. thyrsiflora (D. C. prod. 4. p. 528.) glabrous; branchlets bluntly tetragonal; leaves lanceolate, acute; stipulas twin on both sides, short, tooth-formed, connected by a ligula; panicles thyrsoid, brachiate, longer than the leaves; berries ovate. 5. S. Native of Peru, on the Andes in forests at Cuchero. Psychotria thyrsiflora., Ruiz et Pav. fl. per. 2. p. 57. t. 304. f. b. Leaves 5 inches long. Stipulas tridentate, the middle tooth ovate ciliated, and the lateral ones subulate. Calyxes yellowish. Corollas yellow, villous inside. Berries ovate, dark purple.

Thyrse-flowered Palicourea. Shrub 10 to 12 feet.

31 P. alpina (D. C. prod. 4. p. 528.) branchlets tetragonal; leaves ovate-lanceolate, membranous, reticulate, a little ciliated; petioles downy; stipulas twin on both sides, linear, rather ciliated, connected by a short ligula; panicles terminal, erect, usually shorter than the leaves; corollas terete, elongated, diaphanous; anthers inclosed in the throat. 5. S. Native of Jamaica, on the Blue Mountains. Psychotria alpina, Swartz, prod. p. 44. fl. ind. occ. p. 431. The leaves and branches are said to be glabrous. Peduncles rufescent. Corolla rather venetiose at the base, yellow, red, purple, and white. Berries nearly globose.

Alpine Palicourea. Shrub.

32 P. eriantha (D. C. prod. 4. p. 528.) branchlets terete; leaves elliptic, acute at the base, accumulated at the apex, glabrous above, hairy on the petioles and nerves beneath; stipulas twin on both sides, subulate, joined by a membrane; panicles terminal; calyx acutely 5-toothed, glabrous; corolla tubular, very hairy outside. 5. S. Native of St. Domingo. Psychotria alpina, Poir. dict. 5. p. 702. exclusive of the synonyme of Desf.

Wolly-flowered Palicourea. Shrub 8 to 10 feet.

33 P. speciosa (H. B. et Kunth, nov. gen. amer. 3. p. 368.) branches glabrous, terete; leaves oblong, acuminate, acute at the base, membranous, roughish, shining; stipulas glabrous; panicles pedunculate, with angular branches, which are as well

as the corollas downy. 5. S. Native of New Granada, near Santa Anna. Form of stipulas and fruit unknown. According to Sprengel, this is the same as Psychotria lavigata, Willd. but not of Kunth.

Showy Palicourea. Shrub 6 to 8 feet.

34 P. elliptica (H. B. et Kunth, nov. gen. amer. 3. p. 369.) branchlets tetragonal, smoothish; leaves roundish-elliptic, acute, rounded at the base, coriaceous, stiff, glabrous above, and hairy or downy beneath; panicles on short peduncles, with short dichotomous smoothish branches; corollas glabrous. 5. S. Native on the banks of the Orinoco. Psychotria circumetiata, Willd. in Rœm. et Schultes, syst. 5. p. 190, ex Spreng. syst. 1. p. 744. Distinct from Psychotria elliptica of Ker. and Willd.

Elliptic-leaved Palicourea. Shrub.

35 P. longiflora (D. C. prod. 4. p. 528.) branches terete, smooth; leaves ovate-lanceolate, acuminate, large, coriaceous, rather downy beneath, on short petioles; panicles one-half shorter than the leaves, with alternate horizontal branches; corolla with a very long tube, which is attenuated at the base, and short straightish lobes. 5. S. Native of Cayenne. Psychotria longiflora, Poir. dict. 5. p. 194. but not of Willd. Nerves of leaves and branches of panicle yellowish. Stipulas unknown. In the specimens of the museum preserved at the royal museum at Paris, the leaves appear to be quite glabrous on both surfaces. Leaves 6-8 inches long.

Long-flowered Palicourea. Shrub.

36 P. domingensis (D. C. prod. 4. p. 529.) glabrous; branches terete; leaves ovate-lanceolate, acute, shining, petiole; panicles terminal, usually with flowers sessile, cylindrical, incurved; berries shining. 5. S. Native of St. Domingo, on the banks of the mountain streams in shady humid places. Psychotria Domingensis, Jacq. amer. p. 66. Leaves 5 inches long. Corollas white. Berries dark, shining, with a watery pulp.

St. Domingo Palicourea. Shrub 5 to 6 feet.

37 P. tinifolia (D. C. prod. 4. p. 529.) glabrous; branches terete; leaves obovate-oblong, acute, reticulately veined beneath, rather coriaceous, shining; stipulas bifid, obtuse; panicles stiff, with angular thickened branches; corollas salver-shaped; stamens inclosed. 5. S. Native of South America. Psychotria tinifolia, Willd. in Rœm. et Schultes, syst. 5. p. 190. Colladonia tinifolia, Spreng. syst. 1. p. 516. and 757. Berries 3-celled, 3-seeded, probably from the same cause as those of Palicourea pimpina.
glabrous; branches terete; leaves lanceolate-oblong, acuminate, acute at the base, membranous, shining; stipulas cadu-
cous; panicles sessile; corollas smoothish. \( \text{S.} \) Native of New Granada, near Santa Anna. This is a very distinct plant
from Psychotria longifolia, Willd., with which it has been con
founded by Sprengel in his syst. 1. p. 744.

**Long-leaved Psychotria.** Shrub.

41. \textit{P. Angustifolia} (H. B. et Kunth, nov. gen. amer. 3. p. 367.) branches hairy; leaves oblong-lanceolate, acuminate, acute at the base, membranous, stiff, discoloured, glabrous, rather hairy on the nerves and veins; stipulas glabrous, biden
tate; teeth subulate; panicles pedunculate, hairy; corollas hairy; fruit nearly globose, didymous. \( \text{S.} \) Native of South America, on the banks of the Orinoco or Rio Negro. Psychot
ria stenophylla, Spreng. syst. 1. p. 744.

**Narrow-leaved Palicourea.** Shrub.

42. \textit{P. Nicotianæfolia} (Cham. et Schlecht. in Linneaa. 4. p. 18.) branches, panicles, stipulas, and under surfaces of leaves clothed with minute down; leaves ovate-lanceolate, acuminate at both ends, membranous, glabrous above; stipulas truncate, drawn out into 1 lanceolate-linear teeth each; panicles elongated, contracted; corollas tubular, downy on the outside while young. \( \text{S.} \) Native of equinoxxial Brazil. Segments of the corolla rather unequal, pilose at the apex. There are also 5 fascicles of hairs in the tube of the corolla. Berries nearly orbic
ular, flattened.

**Tobacco-leaved Palicourea.** Shrub 6 to 8 feet.

43. \textit{P. Calophylllum} (D. C. prod. 4. p. 520.) glabrous; branches terete; leaves oblong, acute at the base, acuminate at the apex, on short petioles; stipulas combined at the base, tine on both sides, lanceolate, acuminate; panicles erect, contracted, shorter than the leaves, with very short few-flowered downy branches; corollas clothed with powdery tomentum. \( \text{S.} \) Native of French Guiana, where it was collected by Patris. Leaves 6-8 inches long, and 2 or 2 1/2 broad. Nearly allied to \textit{P. nicotianæfolia}, but differs in the leaves being glabrous be
neath, in the different form of the stipulas. The lobes of the stipulas appear as if they were verticillate, 2 being axillary, and the other 2 between the petioles.

**Beautiful-leaved Palicourea.** Shrub 5 to 6 feet.

44. \textit{P. Petiolæris} (H. B. et Kunth, nov. gen. amer. 3. p. 370.) glabrous; leaves elliptic-oblong, acuminate, cuneated at the base, membranous, on long petioles; stipulas connate, acutely bifid at the apex; panicles erect, clothed with very minute down; calyx glabrous, with acutish lobes. \( \text{S.} \) Native of New Andalusia, on Mount Tumiriqui. Psychotria petiolæris, Spreng. syst. 1. p. 745. Corolla unknown. Leaves 6-7 inches long. Petioles 1 or 1 1/2 inch long. Panicles 3-4 inches long. Said to be nearly allied to \textit{P. Guianænæs}.

**Petiolær Palicourea.** Tree 60 feet.

45. \textit{P. Guianænæs} (Aubl. guian. 1. p. 173. t. 66.) glabrous; leaves oval, short-acuminate, hardly acute at the base, mem

**Guiana Palicourea.** Shrub 7 to 8 feet.

46. \textit{P. Hænkeæna} (D. C. prod. 4. p. 530.) branches bluntly tetragonal; leaves petiolate, elliptic, acute at the base, and very blunt at the apex, or hardly cuspidate, glabrous, velutine beneath on the middle nerve and veins; stipulas triangular, acute; pa
nicles terminal, pedunculate, much branched, equal in length to the leaves, with opposite or alternate spreading branches; corollas glabrous. \( \text{S.} \) Native of Peru, on the mountains about the Guanoco, where it was collected by Hænke. Cincéhna Hæn
keæna, Bartl. in herb. Hænke. Corollas purplish, 4 lines long. Fruit unknown. Habit very like that of \textit{P. Guianænæs}.

**Hænkeæ’s Palicourea.** Shrub 6 to 8 feet.

47. \textit{P. Barbinæævia} (D. C. prod. 4. p. 530.) branches terete, glabrous; leaves oval, acute at the base, cuspitate at the apex, stiltish, glabrous, with the nerves rather prominent beneath, and bearded on both sides; stipulas intransilience, adpressed, very blunt, somewhat 2-lobed; panicles pedunculate, rather longer than the leaves, large, much branched, having the rachis angular, and the branches somewhat verticillate, spreading, and many
flowered; corollas clothed with powdery tomentum. \( \text{S.} \) Native of Porto-Rico, and probably of St. Domingo. Psychot
ria macrophylla and Psych. lutea, Spreng. in herb. Balb. A very beautiful species, nearly allied to \textit{P. Guianænæs}, but very distinct.

The nerves of the leaves become naked at length.

**Bearded-nerved Palicourea.** Shrub 6 to 7 feet.

48. \textit{P. Costata} (H. B. et Kunth, nov. gen. amer. 3. p. 366.) branches villous; leaves oblong, acuminate, acute at the base, membranous, glabrous, discoloured beneath, and hairy on the nerves and veins; stipulas hairy, bifid, with the segments linear, and about equal in length to the petioles; panicles pedunculate, hairy; corollas hairy on the outside, and bearded inside. \( \text{S.} \) Native of South America, on the banks of the Orinoco and Rio Negro. Said to be nearly allied to \textit{Psychotria reticulata}. Perhaps the same as \textit{Psychotria aristata}, Willd. in Kzem. et Scheultes. syst. vol. 5. to which it is referred by Sprengel.

**Ribbed-leaved Palicourea.** Shrub.

49. \textit{P. Noxia} (Mart. réis. ex Linneæa. 5. p. 39.) glabrous; leaves membranous, oblong, acuminated, rounded at the base on short petioles; panicles divaricate; pedicels usually trifid; cor
ollas velvety. \( \text{S.} \) Native of Brazil. The rest unknown, as in the following species.

**Poisonous Palicourea.** Shrub.

50. \textit{P. Sönans} (Mart. l. c.) glabrous; leaves coriaceous, ob
long, attenuated at both ends, acuminated or retuse; racemes subcorimbosus, disposed into a large pyramidal panicle. \( \text{S.} \) Native of Brazil. Corollas velvety.

**Sounding Palicourea.** Shrub.

51. \textit{P. Durëticæ} (Mart. l. c.) leaves with thickened revolute margins, velvety beneath between the ribs and veins; racemes disposed into a subcorimbosus panicule; flowers clothed with fine velvety down. \( \text{S.} \) Native of Brazil.

**Duretic Palicourea.** Shrub.

52. \textit{P. Officinaæris} (Mart. l. c.) shrub clothed with harsh yellow down in every part; leaves narrow-elliptic, on short petioles, acute or rounded at the apex, with a murone, tapering a little at the base; corollas disposed into a coarctate panicule. \( \text{S.} \) Native of Brazil.

**Official Palicourea.** Shrub.

53. \textit{P. Abruææta} (Mart. l. c. p. 40.) leaves \( \frac{4}{4} \) in a whorl, mem
branous, stiltish, oblong or obovate, on long petioles, bluntish, glabrous, of a golden yellow colour beneath; racemes disposed in a coarctate panicule; corollas clothed with fine velvety down. \( \text{S.} \) Native of Brazil.

**Swallow-tailed Palicourea.** Shrub.

54. \textit{P. Streæææns} (Mart. l. c.) bark corky; leaves coriaceous, stiff, glabrous on both surfaces, almost sessile, broad-ovate, obtuse at both ends, with thickened revolute margins, yellowish beneath; corollas disposed into a pyramidal panicule; corollas clothed with fine velvety down. \( \text{S.} \) Native of Brazil. Perhaps the same as \textit{P. rigida}.
RUBIACEÆ. CLXXIV. CLALICOURÆA. CLXXV. CHASALIA. 603


LIN. SYST. Pentändria, Monoçymia. Calyx with an ovate tube, and an urceolate rather tubular limb, with an entire or 5-toothed border; lobes or teeth joined together at length. Corolla with an elongated terete equal tube, and 3 short acutish erect or spreading lobes, which are usually callyus at the apex, and vate in aestivation. Anthers 5, inserted in the middle or top of the tube of the corolla, inclosed or sometimes a little exserted. Stigmas 2, linear. Berries ovate, crowded by the limb of the calyx, containing 2 pyrene, hardly ribbed even in the dry state; pyrene coriaceously-chartaceous or horny, oblong, marked by a furrow inside, convex on the outside, and furnished by a longitudinal crest in the middle, which is extended beyond the base, 1-seeded. Seed erect, with the transverse section arched, lunate, and compressed. Embryo at the base of a horny albumen.—Glabrous shrubs, all natives of the Mauritius. Leaves opposite or 3 in a whorl. Stipulas ovate, undivided or combined into a 4-cleft sheath. Flowers tubular, crowded and sessile on the tops of the branches, or disposed in terminal panicked corymbs. This genus differs from Psychotria in the corolla being elongated, and from Palicouræa in the corolla not being gibbous at the base, and from both in the urceolate or campulate calyx. The habit is that of Garriniæ, but the characters are very different.

* Flowers sessile, and crowded on the tops of the branches. Leaves opposite.—Chasalía, Juss. 1 C. capitata (D. C. prod. 4. p. 531.) leaves opposite, oval, or obovate, terminating in a very short point; stipulas ovate, acuminate, permanent, longer than the petioles; flowers disposed in spicate heads at the tops of the branches, fascicled, sessile. J. S. Native of the Mauritius. Psychotria capitata, Sieb. fl. maui. no. 56. Corolla tubular, 8-10 lines long, with acute hardly open lobes. Leaves 2 inches long, and 12-15 lines broad. Stipulas 8-9 lines long. Fruit unknown. Perhaps the same as Chasalia Commersoni described by Jussieu.

Capitate-flowered Chasalía. Shrub. ** Flowers disposed in terminal panicked corymbs. Leaves opposite.

2 C. psychotrioides (D. C. prod. 4. p. 531.) leaves opposite, obovate-oblong, bluish, coriaceous, cuneate at the base, on very short petioles; stipulas ovate, obtuse, about equal in length to the petioles; panicles corymbose, pedunculate: rachis and branches compressed, opposite. J. S. Native of the Mauritius. Psychotria? Sieb. fl. maui. 2. no. 57. Internodes half an inch long. Leaves 3/4 to 3 inches long, and 15 lines broad. Corolla in the unexpanded state 7 lines long. Calyx bluntly 5-toothed.

Psychotria-like Chasalía. Shrub. 3 C. coffeoides (D. C. l. c.) leaves opposite, oblong, bluish, cuneate at the base; stipulas ovate, acute, a little longer than the petioles; panicles terminal, pedunculate, somewhat corymbose, with the rachi and peduncles compressed, and the branches opposite. J. S. Native of the Mauritius. Coffea capitata, Sieb. fl. maui. exsic. no. 335. Leaves 33 to 4 inches long, and 12-15 lines broad. Stipulas 5 lines long. Calyx with 5 acute short teeth. Corolla in the unexpanded state 5 lines long.

Coffee-like Chasalía. Shrub. 4 C. Fontanesii (D. C. l. c.) leaves opposite, obobo-oblong, bluish, attenuated at the base; stipulas oval, obtuse, deciduous, shorter than the petioles; panicles terminal, pedunculate, rather corymbous, with the rachi and branches compressed. J. S. Native of the Mauritius, and probably of the island of Bourbon. Coffea cymbosa, Willd. in Rœm. et Schultes, syst. 5. p. 201. Very nearly allied to C. coffeoides, but the stipulas are different. Petioles 4-6 lines long. Fruit ovate, crowned by the calyx. Flowers unknown.

Desfontainei's Chasalía. Shrub. 5 C. stipulaecea (D. C. prod. 4. p. 532.) leaves opposite, obovate, acutish, cuneate at the base; stipulas combined in the middle into a 4-cleft sheath, equal in length to the petioles or longer than them; lobes acuminate, 2 of which are within the leaves, and 2 between the leaves; corymbs terminal, trichotomous, with elongated branches, which bear a head of the flowers each at their tops. J. S. Native of the Mauritius. Psychotria, Sieb. fl. maui. 2. no. 271. Leaves 6 inches long. Corolla 6-7 lines long. Limb of calyx short, 5-toothed.

Large-stipulated Chasalía. Shrub. 6 C. divaricata (D. C. l. c.) leaves opposite, obobo-oblong, acutish, cuneate a long way at the base, and petiole; stipulas ovate, obtuse, membranous, deciduous, 2 or 3 times shorter than the leaves; panicles corymbose, one-half shorter than the leaves; lobes of corolla short, acute, straight. J. S. Native of the Mauritius. Coffea divaricata, Tausch. ex Sieb. fl. maui. 2. p. 271. in herb. Dunant. Missæ'nda lanceolata, Poir. dict. 4. p. 392.? and hence the Chasalía Bourbonnii, Comm. ? Leaves 6 inches long, and 15 lines broad. Petioles about an inch long. Calyx urceolate, bluntingly and shortly 5-toothed. Corola 6 lines long.

Divaricate Chasalía. Shrub. ** Flowers disposed in terminal panicked corymbs. Leaves 3 in a whorl.

7 C. Boryana (D. C. prod. 4. p. 532.) leaves 3 in a whorl, elliptic, acute at both ends, on long petioles; stipulas deciduous; panicles trichotomous, a little shorter than the leaves; lobes of corolla short, ovate, spreading; anthers exerted a little from the throat; calyx subtruncate. J. S. Native of the Mauritius and the Island of Bourbon, where it was collected by Bory de St. Vincent. Sieb. fl. maui. 2. no. 253. Petioles 12-16 lines long. Leaves 4 inches long and 2 broad, with the nerves often white. Corolla 6 lines long.

Bory de St. Vincent's Chasalía. Shrub. 8 C. grandifolia (D. C. l. c.) leaves 3 in a whorl, elliptic, acuminate at both ends, rather membranous, on long petioles; stipulas ovate, acuminate, rather longer than the petals; panicles thyrsoid, terminal, on short peduncles. J. S. Native of the Mauritius. Psychotria grandifolia, Sieb. fl. maui. 2. no. 55. but not of Rœm. et Schultes. Branchlets bluntly trigonal. Petioles 7-10 lines long. Leaves 5 inches long and 1 1/4 broad. 4 and 2.
Limb of calyx short, hardly 5-toothed. Corolla 10-12 lines long. Anthers at the throat.

**Great-leaved Chasalia. Shrub.**

9 C. clusiæfolia (D. C. 1. c.) leaves 3 in a whorl, obovate-oblong, obtuse, coriaceous, attenuated at the base; stipulas twin on both sides, ovate, obtuse, adpressed, shorter than the petals; peduncles arising by threes from the tops of the branches, angularly compressed, and densely coriaceous at the apex; bracteac numerous, short. L. S. Native of the Mauritius. Nona-tellia clusiæfolia, Reich. in Sieb. fl. mär. no. 89. Branchlets angular. Leaves 2-3 inches long and 1 or 1 3/4 broad. Petioles nerves long. Bracteas one at the base of each pedicle, and 2 on each. Corolla 5 lines long in the unexpanded state. **Var. β**; leaves opposite. L. S. Growing along with the species.

**Clusia-leaved Chasalia. Shrub.**

**Cult.** For culture and propagation see Psychotria, p. 599.

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**CLXXV. JACKIA (named in memory of the late William Jack, a surgeon in the service of the East India Company, whose well known indefatigable labours in natural history have long ago entitled him to the highest respect).** Wall. in Roxb. fl. ind. 2. p. 321. D. C. prod. 4. p. 621.

**Lin. syst. Pentändria, Monogynia.** Limb of calyx unilateral, trifid. Corolla funnel-shaped, with a filiform tube, and a campanulate 5-cleft border; segments lanceolate, valvate in activation. Anthers filiform, sessile in the throat of the corolla, semi-exserted. Style long, hairy in the middle; stigma 2-lobed. Capsule crowned by 3 unequal unilaterals, 1-celled, and 1-seeded.—Tree tall. Leaves large, opposite, on short petioles, elliptic-obovate, cuspidate, clothed with rustly hairs beneath, as well as the branches, which are obscurely quadrangular. Stipulas combined, sheathing, fringed, interpetiolar. Panicles large, axillary, opposite, pendulous, on very long peduncles, hairy, and villous, with spreading opposite slender branches, each terminated by a corymb of crowded subdichotomous spikes. Peduncles slender, compressed, partial ones each supported by a pair of ample fringed conuate bracteas, which sometimes grow out at the margins into opposite small floral leaves. Flowers white, inodorous, sessile, alternate, distributed in short unilateral spikes, and each flower is supported by an oval densely villous toothed permanent bractea, and these bracteae are somewhat imbricated on the back of the spikes.

1 J. oina'ta (Wall. in Roxb. fl. ind. 2. p. 321. pl. asiatic. rar. 3. p. 68. t. 293.) L. S. Native of the East Indies, in several of the small islands in the immediate vicinity of Singapore. A very large branching unbranched tree. Leaves 6 to 10 or even 14 inches long, crowded at the tops of the branches.

**Decked Jackia.**—Tree large.

**Cult.** See Psychotria, p. 599, for culture and propagation.

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**SUBTRIBE II. CEPHAELIDAE (the plants contained in this subtribe agree with the genus Cephaelis in the flowers being disposed in involucrated heads).** D. C. prod. 4. p. 532.—Cephaelidæ, Cham. et Schlcht. in Linn.æa. 4. p. 139. Flowers disposed in fasciculate heads; the heads involucrated by bracteas.


**Lin. syst. Pentändria, Monogynia.** Calyx with an obovate tube, and a very short 5-toothed limb. Corolla funnel-shaped, with 5 small bluntish lobes. Anthers inclosed. Stigma bifid, usually exerted. Berries obovate, oblong, 2-celled, 2-seeded, crowned by the vestiges of the calyx.—Shrubs and herbs, natives of America. Leaves ovate, acute, petiolate. Stipulas twin on both sides, free or combined, and sometimes bidentate or bipartite. Heads of flowers terminal or axillary, sessile or pedunculate, involucrated by 2-8 bracteas, which are disposed in a cruciately opposite manner; there are also bracteoles or pales among the flowers.—Perhaps the species with dry berries, and those with fleshy berries, ought to be separated into distinct genera. Perhaps Evea is properly joined with this genus, not withstanding its tetrandrous flowers. Probably Callicocca might be joined with this genus, but for its exerted stamens.

**SECT. I. TAPAGOMEA (Tapogomea is the Guiana name of the first species).** D. C. prod. 4. p. 533. Heads of flowers involucrated by 2 large spreading connate coloured bracteas.

1 C. tomentosa (Willd. spec. 1. p. 977.) branches, petioles, peduncle, leaves, and involucra hairy; stipulas acuminate, villous; heads of flowers on long peduncles; leaves of involucre broad, ovate-cordate, wide at the apex.—L. S. Native of Guiana, Trinidad, and probably of Mexico (if C. cyanocarpa, Moc. et Sesse, fl. mex. icon. ined. be the same), in open spaces of woods, and about way sides. Tapogomea tomentosa, Aubl. guian. 1. p. 160. t. 61. Cephaelis tomentosa, Vahl, ecol. 1. p. 19. Callicocca tomentosa, Gmel. syst. 1. p. 371. Peduncles axillary and terminal. Bracteas or involucrum scarlet, or of a vermilion-colour, large, sometimes long-acuminate, and sometimes only cuspidate. Branches obscurely tetragonal. Berries striated, ex Aubl., but blue and smooth according to the fig. in fl. mex. There are therefore 2 species probably confused. In Trinidad we have seen this shrub growing in great abundance, and where it makes a very elegant appearance from its scarlet bracteas; the flowers, as far as we can remember, are brownish, and the berries bluish.

**Woolly Cephaelis.** Fl. June, Sept. Clt. 1825. Sh. 4 feet.


**Tall Cephaelis.** Clt. 1793. Shrub 12 to 15 feet.

4 C. ruelliefolia (Cham. et Schlcht. in Linnæa. 4. p. 134.) every part of the plant is clothed with short hairs; leaves broad-lanceolate, acute, attenuated at both ends, on short petioles, membranous; stipulas triangular, bifid at the apex; heads of flowers terminal, almost sessile, solitary or by threes; floral leaves connate and dilated; bracteae recticulately nerved, lanceo-
late, longer than the calyx.  7. S. Native of equinoctial Brazil.

* Rubellia-leaved Cephalis. Shrubs 4 to 5 feet.

** Sect. II. Callioco'eca (from καλλίστος, kallistes, the most beautiful, and κοκκός, kokkos, a berry; the berries are blue or purplish). D. C. prod. 4. p. 533. Heads of flowers involucred by distinct ovate or oblong erectly adpressed bracteas.

* Shrubs. Heads of flowers pedunculate.

5 C. Justice'fola (Rudge, pl. guian, 1. p. 28. t. 43.) glabrous; branches dependent, knotted; leaves oval-lanceolate; stipulas truncate, bidentate; heads on long peduncules, involucred by broad-lanceolate bracteas; calyx nearly entire. 8. S. Native of Guiana, on the banks of rivers. Peduncules downy. Bracteas fulvous. Corolla with a bearded throat. Flowers sessile on a disk formed by the bases of the bracteas.

Justice'ica-leaved Cephalis. Shrubs 6 to 8 feet.

6 C. stipula'cea (Blum, bijdr. p. 1005.) stem suffruticose, nearly simple; leaves cuneate-oblong, acuminate, glabrous; stipulas semiorbiculate; heads on very short peduncules, axillary, and terminal, involucred by roundish bracteas. 8. S. Native of Java, on the mountains. Stipulas large, membranous. Margin of calyx truncate, entire. Berries dry, 2-celled, compressed, the commissure drawn out into a prominent angle on both sides.

Stipulaceous Cephalis. Shrubs 1 to 2 feet.

7 C. lil'garis (Rich. miss. ex D. C. prod. 4. p. 533.) glabrous; leaves petiolate, oval, acutish; stipulas broad, emarginate; pedunules compressed, solitary, involucred by 9-10 ligulate bracteas; calyx hardly 4-toothed. 8. S. Native of French Guiana. Schardera lilgaris, Rudge, pl. guian. 1. p. 29. t. 815. Tratt. tab. t. 84. According to Richard, the ovum is 2-celled, and the cells 1-seeded, and therefore it is a true species of Cephalis.

Ligular-bracteate Cephalis. Shrubs.

8 C. salicif'o'lia (H. B. et Kunth, nov. gen. amer. 3. p. 376.) glabrous; leaves almost sessile, lanceolate, acuminate. shining; stipulas subulate, combined at the base; heads of flowers pedunculate, terminal, involucred by 4 ovalecordate leaves or bracteas. 8. S. Native of New Andalusia, in arid places on Mount Cocoliar. Involucre green. Branches compressed while young.

Willow-leaved Cephalis. Tree 20 feet.


Glabrous Cephalis. Shrubs 2 to 3 feet.

10 C. bran'ceocar'dia (D. C. prod. 4. p. 534.) branches terete, clothed with velvety down while young, but glabrous in the adult state; leaves elliptic-oblong, tapering to both ends, downy on the veins beneath; stipulas twin on both sides, subulate, joined a little way at the base; heads of flowers pedunculate, terminal, downy, involucred by 4-6 acute bracteas, which are cordate at the base. 8. S. Native of French Guiana, where it was collected by Patris; and of Brazil, in the province of Bahia by Salzmann.

Var. a; bracteas acuminate, purplish.—Native of Guiana.

Var. b; bracteas pale, less acuminate. Native of Brazil at Bahia. Corollas flesh-coloured.

Var. c; bracteas pale, hardly acuminate, rather ovate at the base.—Native of Guiana.

Heart-bracteate Cephalis. Shrubs 2 to 3 feet.

11 C. amb'gua (D. C. prod. 4. p. 534.) branches terete, downy, compressed while young; leaves elliptic-oblong, tapering to both ends, downy on the veins beneath; stipulas twin on both sides, subulate, joined together a little way at the base; heads pedunculate, terminal, smoothish, involucred by 4-6 bracteas, which are hardly cordate at the base, and very blunt at the apex. 8. S. Native of Brazil, near Bahia, in shady valleys, where it was collected by Salzmann. Involucre violaceous.

Ambiguous Cephalis. Shrubs 2 to 3 feet.

12 C. cr'oece (Meyer, essq. p. 107.) glabrous; branches rather tetragonal; leaves ovate, short-acuminate at both ends; stipulas linear, twin; heads terminal, globose, on short peduncules, involucred by 8 oblong-linear bracteas, and without any paleae among the flowers. 8. S. Native of Dutch Guiana, at Essequibo. Corolla saffron-coloured, villus outside. Leaves of involucre ciliated, yellowish.

Saffron-coloured-flowered Cephalis. Shrubs.

13 C. Humboldt'ia (Cham. et S. et Schlcht. in Linneus. 4. p. 156.) glabrous; leaves elliptic-lanceolate, tapering to both ends, on short petioles, firm and shining; stipulas tooth-formed on both sides at the base of the petioles; heads terminal, pedunculate, nearly globose, loose; bracteas membranous, nerved: outer ones roundish-ovate: inner ones more acute. 8. S. Native of South America, at Jativa, in shady places.

Humboldt's Cephalis. Shrubs.

14 C. dich'ota (Rudge, pl. guian. 1. p. 29. t. 44.) glabrous; branches dichotomous; leaves on short petioles, ovate-lanceolate; stipulas bidentate; heads terminal, on short peduncules, involucred by nearly orbicular bracteas. 8. S. Native of French Guiana, and of Brazil, near the river Ilheos, if C. dich'ota, Nees et Mart. nov. act. horn. 12. p. 17. be the same. Bracteas fulvous. Calyx obsolutely 5-cleft. Fruit furrowed, as in the genus Psychotria.

Dichotomous Cephalis. Shrubs 6 to 8 feet.

15 C. Swartz'zi (D. C. prod. 4. p. 534.) glabrous; branchlets rather tetragonal; leaves ovate-lanceolate, acuminate, nerved, petiolate; stipulas broad, combined, acuminate, at length ciliated; heads terminal, globose, pedunculate, involucred by 5 ovate-concave bracteas; paleae among the flowers obtuse. 8. S. Native of the West India Islands, and of St. Lucia, &c. C. violacea, Swartz, prod. p. 45. fl. ind. ascra. 439. exclusive of the synonyms. Peduncules an inch long, quadrangular. Corollas bluish. Berries blue. Bracteas violaceous. It differs from the true C. violacea in the heads of the flowers being pedunculated, in the stipulas being ciliated, and in the paleae among the flowers being obtuse.

Swartz's Cephalis. Shrubs 4 to 6 feet?

16 C. Marah'ma'nesis; leaves broad-oblong, acuminate, membranous, glabrous; heads of flowers terminal and axillary. 8. S. Native of Maranham, on the banks of rivulets. Shrubs branched. Flowers violaceous.

Maranham Cephalis. Shrubs 4 feet.

17 C. ferrugine'a; climbing, villous; leaves oblong-lanceolate, acuminate, rusty beneath, petiolate; peduncles axillary, elongated, villous; heads involucred by many leaves. 8. S. Native of Sierra Leone, on the banks of rivulets.

Rusty Cephalis. Shrubs cl.

18 C. pendul'u'ca (Salisb. cr. Lond. 2. t. 99.) stem terete, swelling below the joints; leaves oblong-lanceolate, glabrous, tapering to both ends; stipulas twin on both sides, combined almost to the top, keeled; heads of flowers pedunculate, terminal, or in the forks of the branches; outer bracteas reductly toothed; calyx bearded; segments of calyx horns on the back. 8. S. Native of Sierra Leone. Flowers white.

Rubiaceæ. CLXXVI. Cephalis.

19. C. coriacea; leaves oblong, coriaceous, dark green; heads on long peduncles, involucred by many leaves. Ӿ. S. Native of Sicra Leone, on the edges of woods.

Coriaceæ-leaved Cephalis. Shrub 2 to 3 feet.

* * Shrubs. Heads of flowers sessile.

20. C. violacea (Willd. spec. 1. p. 977. exclusive of the synonyme of Swartz.) glabrous; branches nearly terete; leaves oval, acuminate, on short pedioles; stipulas broad, somewhat concrenct, obtuse, rather scarious at the apex; heads of flowers terminal, globose, sessile, declinate, involucrated by 5 ovate, roundish bracteas; paleæ among the flowers acute. Ӿ. S. Native of French Guiana, in woods, where it is called Eve by the natives. Évea Guianensis, one of the Society Islands. It seems to approach C. speciosa, Sprengel, from Ota- hiti. Corollas red.

Fragrant Cephalis. Tree 20 feet.

27. C. Eve'a (D. C. prod. 4. p. 535.) glabrous; branchlets rather tetragonal; leaves oval-oblong, on short pedioles; stipulas oblong, undivided; heads axillary, sessile, involucrated by 4 ovate, obtuse, dilatate bracteas; flowers tetramerous and tetradromous.

Ӿ. S. Native of French Guiana, in woods, where it is called Eve by the natives. Évea Guianensis, one of the Society Islands. It seems to approach C. speciosa, Sprengel, from Ota- hiti. Corollas red.

28. C. purpura (Willd. spec. 1. p. 978.) stems creeping, ascending, hispid from rufescent hairs at the tops; leaves oblong, acuminate, hispid on the nerves beneath, and ciliated on the edges; stipulas twin, hispid; heads terminal, almost sessile, involucrated by 2 oblong bracteas, which are, as well as the paleæ among the flowers, ciliated. Ӿ. S. Native of French Guiana, in woods, and of Maranham. Tapogomea purpura, Aubl. guian. 1. p. 106. t. 99. Lam. ill. t. 39. Cephalis triandra, Willd. spec. 1. p. 979. Paleæ among the flowers acute. Corollas white.

Évea Cephalis. Shrub.

* * * Herbaceous plants.


Purple-flowered Cephalis. Fl. April, June. Pl. creeping.

30. C. Ipecacuanha (A. Rich, bull. fac. med. 1818. pol. 4. p. 92. dict. sc. med. vol. 26. with a figure) stems ascending at first, but at length becoming erect, rather downy at the apex; leaves oblong-obovate, scabrous above, and clothed with fine down beneath; stipulas setaceous clefts; heads terminal, pendentulate, erect at first, but at length becoming pendulous, involucrated by 4 subordinate bracteas. Ӿ. S. Native of Brazil, in woods and valleys on the mountains. Tuss. in Desv. journ. bot. 4. p. 247. Mart. mat. med. bras. 1. p. 4. t. 1. St. Hil. pl. usuol. bras. t. 6. Steph. et Church. 2. t. 62. C. emetica, Pers. encl. 1. p. 203. exclusive of the synonyme Callicocca Ipecacuanha, Brotn. in Lin. trans. 6. p. 137. t. 11. Ipecacuanha officinalis, Arrud. disc. p. 44. ex. St. Hil.—Pis. bras. 291.—Maregr., brs. 17. Root creeping, annular, brown or grayish, and is the Ipecacuanha of the shops of Europe, and the Pojas of those of Brazil. Leaves crowded at the tops of the stems, which are simple, and obscurely tetragonal. Flowers white, downy outside.

Although the root of ipecacuanha has been long employed as a valuable article of the Mater Medica, yet the botanical characters of the plant which produced it remained unknown till Professor Brotero, of Coimbra, determined the genus to which it ought to be referred, with the assistance of observations made in Brazil, on living plants, by Bernardino Gomez, a resident medical botanist. The plant is a native of moist woods near Pernambuco, Bahia, Rio Janeiro, and other provinces of Brazil. It is called Ipecacuanha by the natives of some parts of Brazil;
Poia do Matto by those of the southern provinces; and Cipo by others, which is the name often given to it by the Portuguese settlers. The root is simple, or a little branched, and furnished with a few short radicles, irregularly bent, externally brown, wrinkled from rings.

It appears to be a native of Brazil, whose name was Michael Tristan, was the first who brought ipecacuanha into use. He speaks of it as a remedy for dysentery. Piso afterwards describes it, and speaks of two sorts (hist. nat. bras. p. 101.), the white and brown, which he says were given for fluxes, and as vomits. But we are indebted to Helvetius for bringing it into general use, under the patronage of Louis XIV., from whom he received a thousand pounds, to reveal the secret medicine with which he so successfully treated dysentery. Besides the brown ipecacuanha, there is another sort, brought from Brazil, which varies in appearance from the former; and some have supposed that these differences are owing to accidental circumstances, such as the place of growth, the kind of soil, &c.; but, on the authority of M. Gomez, the common brown ipecacuanha of the shops, is yielded to be *Cephaëlis ipecacuana*, while the white is the root of *Richardsonia scabra* and *R. rosea*, which is exported largely to Portugal. Besides these, the name of ipecacuanha, which, in the language of South America, means vomiting root, is given to various species of *Cynanchum, Asclepias, Euphorbia, Drasena*, and *Ruella*; and with regard to their comparative power, De Candolle says that vomiting is produced by 22 grains of *Cynanchum*; by 24 of *Physostigma emetica*; by from 60 to 72 of *Viola calceolaria*; and by from 1 to 3 drachms of *C. ipecacuana*. Linneus, in a paper published in the third volume of "Amenitates Academicae," gave ipecacuanha, as a trivial name, to a species of *Euphorbia*, a native of Virginia and Carolina, the root of which is there used as an emetic. But this was soon discovered not to be real ipecacuanha. In his second "Mantissa" he gave the trivial name to a species of *Viola*, a native of Brazil, the root of which he supposed to be the white ipecacuana of the shops. De Candolle, in a paper published in "Bulletin des Sciences par la Société Philomatique," and re-published entire in the "Nouveau Dictionnaire d' Histoire Naturelle," says there are three species of *Viola* which produce the white ipecacuana; the *V. calceolaria*, a native of Guiana and the Antilles; the *V. ipecacuana*, and the *V. parviflora*, both natives of Brazil. The roots of these, and especially the last, are sometimes mingled in common with the true, or brown, ipecacuana; but they are a fraudulent adulteration, and do not possess its active properties. They may be distinguished by their colour, but most certainly by the size of the woody part, which in these is always considerably thicker than the bark; whereas in the true ipecacuana it is much less, and, as described by Brotero, is only a fibre.

The black or striated *Ipecacuanha* (*Physostigma emeticum*) is exported from Carthagena to Cadiz, and is also said to be the Peruvian *grey ipecacuana*. The root is black within and without, fusiform, articulated, striated, and not annulated. The white *ipecacuana* is described by Gomez to be the root of *Richardsonia scabra*; it is of a dirty white, and turns brown by drying; it is simple, or a little branched, often 5 or 6 lines thick, 3 inches long and upwards, variously twisted, and tapering at its extremities, with transverse annular rugosities, larger than those of the brown *ipecacuana*. The common *brown ipecacuana* is exported from Rio Janeiro to Portugal. Its colour varies from different degrees of grey and brown; but it is characterized by being contorted, wrinkled, and unequal in thickness; having a thick brittle bark, deeply fissured transversely, covering a central, very small white wood, so as to give the idea of a number of rings strung upon a thread.

Qualities and chemical properties.—Powdered ipecacuana has a sickly odour, and a bitterish acid taste; and on those who pulverize it, sometimes excites such powerful effects as to produce nausea, faintings, and spitting of blood. It has been subjected to various chemical investigations, and Dr. Irvine ascertained that it contains a gum resin. MM. Pelliot and Magendie, while pursuing their investigation on ipecacuana, discovered that the power of the various kinds of ipecacuana depended on a peculiar principle, to which the name emetine has been given; and they think that it might upon all occasions be substituted with advantage, being much more active than ipecacuana itself, without possessing its disagreeable taste and smell. The latter quality resides in a gummy substance, quite distinct from its emetine virtue; for M. Caventon swallowed it with impunity to the extent of 6 grains.—All vegetable astringents, as infusion of galls and vegetable acids, weaken or destroy the power of ipecacuana; and Dr. Irving found that half a dram, administered in 2 ounces of vinegar, had little effect.

Medical properties and uses.—The utility of ipecacuana is generally known, and properly appreciated. As an emetic, it operates in doses of from 5 to 30 grains, surely and efficiently, without depressing the system at large, like many other emetics, or injuring the mucous membrane of the stomach; it is therefore to be preferred as a mere evacuant of that organ; and it can be given in the fullest doses with perfect safety, and without exciting much nausea. Its power as an emetic has been rather undervalued in one particular view; for if opium be taken, recourse is generally had to violent remedies, which, by simple contact with the stomach, when in a torpid condition, cannot fail to produce injurious results. Ipecacuana is sometimes employed in a full dose after the accession of a paroxysm of intermittent fever; and, by destroying the link which held the chain of diseased sympathies together, it has often succeeded in cutting short the disease. Paroxysms of spasmatic asthma also often yield to the same treatment; and in the more chronic form of that disease, small doses advantageously produce both expectation and perspiration. In chronic dysentery and diarrhoea, it is a most useful medicine in small doses. Given in doses of half a grain, it promotes secretion in the lining membrane of the bowels, whereby a healthy condition is eventually re-established, and is, therefore, frequently prescribed in cases of dyspepsia, attended by a foul tongue. Small nauseating doses are advantageously given to subdue uterine and pulmonary hemorrhages; and combined with opium, the effects of both appear to be modified; so that under the name of Dover's powders, doses of from 5 to 10 grains form one of the most powerful and useful sublunaries that can be employed for acute or chronic rheumatism, and for eruptive diseases that are disposed to recede. Nauseating doses of ipecacuana are also useful for hooping-cough, epilepsy and aneurisma. Two kinds of emetine are obtained from ipecacuana—the coloured emetine and pure emetine; the latter is white and powdery, not acted on by the air, whereas coloured emetine is deliquescent. The cases in which emetine may be given, are the same as those in which ipecacuana is indicated. Pure emetine is much more powerful than the coloured. Two grains are sufficient to kill a large dog. The official preparations are Pulvis ipecacuanha, Compositu and Vinum ipecacuanha. Pectoral lozenges of emetine are useful in chronic pulmonary catarrh, hooping-cough, obstinate diarrhoea, &c.

*Ipecacuana Cephas.* Pl. ½ to 1 foot.

31 C. ruβra (Hoffm. ex Wild. mss. in Rom. et Schultes. syst. 5. p. 214.) stem dichotomous, kneed; leaves ovate, acuminate, petiolate, glabrous above, and downy beneath; stipulas sheathing, bidentate; heads terminal, on short peduncles, involuted by 6 unequal bracteas.

Red-veined-leaved Cephaelis. Pl. 1 foot.

33 C. colorata (Hoffm. ex Willd. mss. in Rœm. et Schultes, syst. 5. p. 213.) stems herbaceous, simple, glabrous; leaves oblong, tapering at both ends, roughish beneath; stipules furnished with 2 bristles on either side; heads terminal, on short peduncles. ½. S. Native of Brazil. Stems thickened at the joints.

Coloured Cephaelis. Pl. 1 foot.

33 C. tubeaeus (Hoffm. 1. c.) stem simple, herbaceous, downy; leaves elliptic, acute at both ends, downy at the veins; heads pedunculate, involucrated by many leaves. ½. S. Native of Brazil, at Bahia.

Downy Cephaelis. Pl. ½ to 1 foot.

34 C. hoffmannseggiana (Rœm. et Schultes, syst. 5. p. 214.) stem herbaceous, branched; branches dichotomous or trichotomous; leaves oblong, narrowed at both ends, acuminate; heads terminal, surrounded by a 4-leaved involucre. ½. S. Native of Brazil. C. dichotoma, Willd. rel. but not of Rudge. Nearly allied to C. rubra, but the stems are much taller.

Hoffmannsegg's Cephaelis. Pl. 2 feet.

† Species not sufficiently known.

35 C. gemmiflora (Willd. rel. and Schultes, syst. 5. p. 213.) leaves obovate, tapering at both ends, glabrous; heads globose, twined on long peduncles, involucrated. ½. S. Native country unknown.

Bud-flowered Cephaelis. Shrub.

36 C. bidentata (Humb. ex Willd. rel. in Rœm. et Schultes, syst. 5. p. 214.) leaves oblong, acuminate, glabrous; heads globose, terminal, involucrum 2-leaved, bidentate. ½. S. Native of Sierra Leone.

Bidentate-involucrated Cephaelis. Pl. ?

Cult. See Psychotria, p. 599. For the culture and propagation of the shrubby species; and Geophila, p. 609. For those of the herbaceous kinds.


Lin. syst. Pentandria, Monogynia. All as in Cephalis, except in the anthers and stigmas, which are a little exerted. Berries dry, bipartite, angularly furrowed, crowned by the small limb of the calyx; seeds or pyrene 1-seeded, smooth on the outside, not striated, as in Cephalis.—Glabrous shrubs, with rather nodose branches. Leaves petiolate, oval, acuminated. Stipulas twin on both sides, combined at the base, and therefore bidentate. Heads of the flowers rising from the axils of the upper leaves, on short peduncles, deflexed, girded by 4 acute bracteas. Corollas white. According to Willdenow, Jussieu, and Richard, this genus should only form a section of Cephælis.


2 C. Patrasii (D. C. prod. 4. p. 536.) stipulas combined, bidentate at the apex; bracteas of the heads of the flowers nearly equal, ovate, acute. ½. S. Native of French Guiana, where it was collected by Patras. Heads terete, dichotomous. Leaves oval-lanceolate, acute at the base, and acuminated at the apex. Heads on very short peduncles, hardly larger than peas. Corolla white, hairy on the inner part of the limb. Anthers linear, exerted.

Patras's Carapichea. Shrub 5 to 6 feet.

Cult. See Psychotria, p. 599. For culture and propagation.

CLXXVIII. SUTERIA (named after John Rudolph Suter, a professor at Bern in Switzerland; author of Flora Helvetica, &c.). D. C. prod. 4. p. 536.—Cephalis species of Lindl.

Linn. Syst. Pentandria, Monogynia. Calyx with an ovate tube, and a tubular angular limb, which is 5 times longer than the ovary, having an unequally 5-toothed border. Corolla salver-slaped, with a terete tube, a naked throat, and 5 ovlobong oblong lobes. Anthers sessile, inclosed. Stigma bilamellate. Fruit 2-celled, 2-seeded.—A glabrous shining shrub, with terete branches. Leaves almost sessile, oblong-lanceolate. Stipulas ovate, deciduous. Heads of flowers axillary, almost sessile, usually 6-flowered, surrounded by ovate-foliate bracteas. Paleæ among the flowers linear. Corollas white, almost like those of jasmine, sweet-scented.—This genus differs from Cephalis in the form of the calyx.


Cult. For culture and propagation see Psychotria, p. 599.

CLXXIX. GEOPHILA (from γη, ge, the earth, and φιλειο, to love; the species creep on the surface of the earth, and the stems never rise beyond it). D. Don, prod. fl. nep. p. 136. but not of Berg. D. C. prod. 4. p. 537.—Psychotria species. Lin.—Cephalis species, Kuntl.

Lin. syst. Pentandria, Monogynia. Calyx with an ovate tube, and a 5-parted limb; segments linear, spreading recurved. Corolla tubular, with a pilose throat, and 5 oval somewhat recurved lobes. Anthers 5, inclosed. Stigma bifid. Berry ovoid, angularly ribbed, crowned by the calyx, 2-celled, 2-seeded.—Perennial depressed creeping herbs. Leaves petiolate, cordate, similar to those of some species of Viola. Stipulas staminal on both sides, undivided. Peduncles rising from the axis of the ultimate leaves, terminal, solitary, bearing many flowers at the apex. Flowers almost sessile, umbellate, involucrated by bracteas, which are shorter than the flowers.

1 G. Reniformis (Cham. et Schlecht. in Linnaea. 4. p. 137.) petioles hairy above; leaves reniform, obtuse, with the lobes at the base approximate; bracteae linear; peduncles 4-6-flowered, shorter than the leaves. ½. S. Native of South America, in shady places; as of Jamaica, Porto-Rico, Cuba, about the Orinocoe, Brazil, Guiana, Society Islands, &c. Psychotria herbaecæ, Lin. spec. p. 245. Jaqc. amer. t. 46. Tuss. ant. t. 8. Psychotrophum herbaecæm, Browne, jan. p. 161. Cephalis reniformis, H. & B. et Kuntl. nov. gen. amer. 3. p. 377. Flowers white. Berries red. There are varieties of this with downy or glabrous stems and leaves. Leaves always glabrous beneath.


2 G. violacea (D. C. prod. 4. p. 537.) petioles hairy above; leaves cordate-reniform, obtuse, glabrous, with the lobes approximate at the base; umbels few-flowered, almost sessile between the ultimate pair of leaves; bracteas linear-lanceolate. ½. S. Native of Cayenne and Guiana, in woods (Aubl.); and of the Isthmus of Panama (Hænke). Psychotria violacea, Aubl. guian.
1. p. 145. t. 55. Bartl. in herb. Haecke, but not of Willd. Very nearly allied to G. reiifórmis, but the petioles are shorter, the umbels are hardly pedunculate, the corollas violaceous, and the berries blue.

**Violaecae-flowered Geophila.** Pl. creeping.

3 G. diversifólia (D. C. prod. 4. p. 587.) petioles and peduncles clothed with short hairs or down; leaves reniformly cordate, rounded or acute, glabrous on both surfaces, paler beneath, with the lobes at the base disarticulate; peduncles about four to five times longer than the calyx. 2. S. Native of Java, on the mountains; and probably of Malabar and Sihet, &c., if the Karinta-Tali, Rheed. Hist. 10. t. 21. be the same. Psychótria herbarécé, Roxb. fl. ind. 2. p. 161. and therefore G. reiifórmis, D. Don, prod. fl. nep. p. 136. Cephalis diversi-fólia, Blum. biol. p. 1004. Flowers white? Berries red?

**Diverse-leaved Geophila.** Pl. creeping.

4 G. violófólia (D. C. l. c.) petioles hairy above; leaves roundish-cordate, acutish, glabrous on both surfaces, with the lobes at the base disarticulate; peduncles about equal in length to the petals; bracteas lanceolate; umbels 6-9-flowered. 2. S. Native of New Granada, on the banks of the river Magdalena, in humid places. Cephalis violófólia, H. B. et Kunth, nov. gen. amer. 3. p. 379. Psychótria hedrácées, Willd. in Rœm. et Schult. syst. 5. p. 191. Corella white, glabrous, 4 times longer than the calyx.

**Violet-leaved Geophila.** Pl. creeping.

5 G. macróphóda (D. Don, prod. fl. nep. p. 136.) petioles roughish; leaves cordate, acute, glabrous; peduncles length of leaves; bracteas linear-lanceolate; umbrellas 3-6-flowered. 2. S. Native of Peru, in groves, along the tract of Pillao to Icazutina. Psychótria macróphióda, Ruiz et Pav. fl. per. 2. p. 63. t. 211. f. b. Psych. cordófólia, Dietr. geot. lex. 1. p. 618. Berries dark purple. Seeds smooth.

**Long-peduncled Geophila.** Pl. creeping.

6 G. grácilis (D. Don, l. c.) petioles striated, beset with retrograde hairs at top; leaves cordate, acute, rather pilose above; peduncles length of petals; bracteas subulate; umbels 6-9-flowered. 2. S. Native of Peru, in forests at Pillao and Pueblo-Nuevo. Psychótria grácilis, Ruiz et Pav. fl. per. 2. p. 63. t. 211. f. c. Corollas pale-violaceous, glabrous inside. Berries ovate, blackish. Seeds trisulate.

**Slender Geophila.** Pl. creeping.

**Cult.** A mixture of vegetable mould and sand, or peat and sand, is the best soil for the species of Geophila; and they are easily increased by detaching their creeping stems.


**Lin. syst.** Tetra-Hexándria, Monogénia. Calyx with an obovate-globose tube, and a very short entire or 4-toothed limb, rarely 5-6-toothed. Corolla with a short nearly terete tube, and 4-6 oblong spreading lobes. Stamens 4-6; anthers sessile within the corolla, and 4-6 anthers; stamens 4-6; anthers sessile within the corolla, and 4-6 anthers. Bilateral, globose, crowned by the nearly closed calyx, smooth, 2-celled, or 2-seeded.

**Glabrous shrubs.** Natives of South America. Leaves on short petioles, oval or ovate, acuminate at the apex. Stipulas broad at the base, and subulate at the apex. Flowers sessile, crowded into heads in the axils of the leaves or tops of the branches. Heads propped by 4 small bimatically opposite bracteas. This genus differs from Psychótria in the capitate inflorescence, in the smooth berries, and in the number of the floral parts being usually quaternary.

1 P. cocánnea (Aubl. l. c.) stipulas undivided; leaves oval, acute at the base; heads of flowers sessile; flowers tetramerous; throat of corolla naked. 2. S. Native of French Guiana, in the woods of Orapu. Lam. ill. no. 1464. t. 65. Cephalís sálzmannii, Willd. spec. 1. p. 979. Flowers red.

**Scarlet Patabea.** Shrub 4 to 5 feet.

2 P. tenuíspéru (D. C. prod. 4. p. 538.) leaves oblong, acute at both ends, membranous; stipulas 4, lanceolate-linear, connate at the base; heads of flowers some sessile, and others pedunculate; corolla with a naked throat, linear lobes, and a slender tube; limb of calyx truncate. 2. S. Native of French Guiana, where it was collected by Patris. Leaves 5-6 inches long and ½ broad. Bracteas small. Fruit unknown.

**Slender-flowered Patabea.** Shrub 4 to 5 feet.

3 P. alba (H. B. et Kunth, nov. gen. amer. 3. p. 375.) leaves ovate, rounded at the base; stipulas bifid at the apex; cymes pedunculate; flowers pentamerous and hexamorous; throat of corolla villous. 2. S. Native of South America, on the banks of the Orinoco, near Maypures, and San Fernando. Cephalís cymósa, Spreng. syst. 1. p. 749. Psychótria Maypunesí, Willd. rel. in Rœm. et Schult. syst. 5. p. 190.? ex Spreng. Calyx violaceous. Corollas white.

**White-flowered Patabea.** Shrub.

**Cult.** See Psychótria. p. 599. for culture and propagation.

**CLXXXI. SALZMANNIA** (named after M. Salzmann, a collector of plants in Mauritius, and afterwards in Brazil). D. C. prod. 4. p. 617.

**Lin. syst.** Tetra-Ándria, Monogénia. Calyx with an oval tube, and a cupularly bluntly 4-toothed or situationally pedunculate. Corolla with a short tube, and 4 oblong lobes. Alabaster tetragonal. Stamens with very short filaments, and very long anthers. Style 1, undivided, or the lobes are combined. Berry dry, crowned by the limb of the calyx, 1-celled in the adult state by abortion, compressed, oval, 1-seeded. Seed compressed.—A glabrous Brazilian shrub. Branches at first tetragonal, but terete in the adult state. Stipulas truncate, very short. Leaves opposite, ovate, on short petioles, shining above, and as if they were varnished. Peduncles axillary, opposite, very short, bearing dense heads composed of 10-12 flowers, girded by 2-4 ovate foliaceous bracteas. Flowers sessile within the bracteas, ovate. This genus appears to come nearest to Cephalís, from which it differs in the very long anthers, in the compressed fruit, and in habit.

1 S. weída (D. C. prod. 4. p. 617.) 2. S. Native of Brazil, about Bahia on arid hills. Corella a line and a half long. Leaves ⅞ inch long and 1 broad, obtuse. Stipulas subulate. Salzmannia. Shrub 5 to 6 feet.

**Cult.** See Psychótria. p. 599. for culture and propagation.

** Tribe X.**

**SPERMACOCŒÆ (this tribe contains plants agreeing with the genus Spermacoce in particular characters).** Cham. et Schlecht. in Linnææ. 3. p. 369. A. Rich. mem. soc. hist. nat. Par. 5. p. 147. D. C. prod. 4. p. 538. Spermacoce bilamellate (f. 100. b.). Fruit dry or hardly fleshy, usually of 2, rarely of 3-4 1-seeded mericarps or nuts, which are sometimes combined, and sometimes separating from each other, indehiscent or dehiscing in various ways. Allumens between fleshy and horny.

—Shrubs or herbs. Leaves opposite. Stipulas membranous at the base, and usually of many bristles at the apex.

**Subtribe I. CEPHALANTHEÆ (this subtribe only contains the genus Cephalanthus).** D. C. prod. 4. p. 538. Flowers and fruit crowded and sessile, upon globose receptacles. Fruit divisible into 2 parts.

Lin. syst. Tetrándria, Monogynia. Calyx with an obversely pyramidal tube, and an angular 4-tonged limb. Corolla with a slender tube, and a 4-cleft limb; lobes erectish. Stamens 4, short, inserted in the upper part of the tube, hardly exerted. Style much exerted; stigma capitate. Fruit inversely pyramidal, crowned by the limb of the calyx, 2-4-celled, and separating into 2-4 parts; cells or parts 1-seeded, indehiscent, and sometimes empty by abortion. Seeds oblong, terminating in a little callous bladder. Albumen somewhat cartilaginous. Embryo inverted in the albumen, with a superior radicle.—Shrubs, with terete branches. Leaves opposite or 3 in a whorl. Stipulas short, distinct, or a little combined. Peduncles naked, rising from the axis of the upper leaves, or from the tops of the branches. Heads globose, in consequence of the flowers being sessile, and seated on a spherical piliferous receptacle.—This genus is badly defined, and should probably be reduced to the American species, which have the fruit 2-celled and 2-seeded, and the rest should probably be thrown back into the genus *Spermacoceae*.

Sect. I. Platanocéphalus (from πλατάνος, platanos, the plane-tree, and κεφαλή, kephele, a head; the heads of flowers resemble those of the plane-tree). D. C. prod. 4. p. 538.—Platanocéphalus, Sálv. act. acad. par. 1722. Glands none in the calyx nor corolla.—American species.

1 C. occidentalis (Lin. spec. 139.) leaves opposite or 3 in a whorl, ovate or oval, acuminated; peduncles much longer than the heads, usually by three at the tops of the branches. S. S. Native of North America, from Canada to Florida, in marshy places. Dus. arb. 1. t. 54. Schkuhr, handb. t. 21. and t. 5. b. fruit. Lois. herb. amat. t. 272.—Plu.s. alm. 336. t. 77. f. 4. C. oppositifolius, Ménéch. math. p. 487. Petioles reddish next the branches. Heads of flowers globular, size of a marble. Flowers whitish-yellow. There are varieties of this species having the branchlets and young leaves either glabrous or downy.

*For. β, brachycéphalus* (D. C. prod. 4. p. 539.) leaves elliptic-oblong, 3 in a whorl, on short petioles. G. G. Native of the North of Mexico, near Rio de la Trinité and Bejar, where it was collected by Berlandier. Petioles 3-4 lines long. There are varieties of this with either glabrous or downy branches.


2 C. Sárdi (Cham. et Schlécht. in Linnaea. 2. p. 610. and 4. p. 147.) leaves opposite or 3 in a whorl, oblong, acuminate, on very short petioles; peduncles hardly longer than the heads, 3-5-together at the tops of the branches. S. S. Native of the south of Brazil, where it is called *Sarandi* by the natives, and where it was collected by Sello; common on the coasts of La Plata and Caraccas; and of Peru, ex Hænke. Búblíea glabrata, Spreng. syst. 1. p. 491. ex Cham. et Schlécht. in Linnaea. Glabrous. Leaves lanceolate or ovate-lanceolate, red beneath while young, and hairy in the axis of the secondary veins. Heads of flowers verticillate in the axis of the upper leaves, and umbellate at the tops of the branches, much smaller than those of the first species.

*Sarandi* Button-wood. Shrub 10 to 15 feet.

3 C. salicifólius (Humb. et Bonpl. pl. equin. 2. p. 63. t. 98.) leaves opposite or 3 in a whorl, linear-lanceolate, on very short petioles; heads of flowers on long peduncles, terminal, solitary. S. S. Native of Mexico, near Acapulco. Stipulas linear-subulate, permanent, twin on both sides. Heads of flowers white.

Willow-leaved Button-wood. Shrub 10 feet.

Sect. II. Naucloïdes (from *Nauclea* and *idea*, like; the species resemble species of the genus *Nauclea*). D. C. prod. 4. p. 539. Glands in the recesses between the lobes of the calyx and corolla.—Indian species.

4 C. naucloïdes (D. C. prod. 4. p. 539.) leaves opposite or 3-7 in a whorl, ovate-lanceolate, acuminate, on short petioles, villos beneath, and on the branchlets; stipulas intrapilose, acuminate; heads terminal, subverticillate. S. S. Native of the East Indies, in Silhet. Nauclea tetrándria, Roxb. fl. ind. 2. p. 195. Peduncles terminal, from 3 to 4 in whorled panicles. Flowers yellow, intermixed with filiform elevate scales. Capsules turbinate, 2-celled, 2-seeded; the cells 2-valved. According to Cham. et Schlécht. in Linnaea. 4. p. 147. this species is more nearly allied to *Cephalanthus* than to *Nauclea*, from the tetrameres flowers, and single seeded cells of the fruit.

Nauclea-like Button-wood. Tree 10 to 20 feet.

† Asiatic species not sufficiently known, and probably ought to be excluded from the genus altogether.

5 C. ? pilu'ifer (Lam. dict. 1. p. 679.) leaves opposite, approximate, ovate, bluntly acuminate, smooth on very short petioles; peduncles axillary, leafy, a little shorter than the leaves. S. S. Native of the East Indies. Fruit and number of the parts of the flowers unknown. Leaves hardly 2 inches long. Heads of flowers hardly the size of peas.


6 C. ? pilu'/íflorus (Wildl. mss. in Räem. et Schultes, syst. 3. p. 525.) leaves elliptic, tapering to both ends, bluntish; heads of flowers terminal and axillary, numerous. S. S. Native of Asia. The rest unknown.


7 C. ? orientalis (Räem. et Schultes, syst. 3. p. 105. but not of Lin.) arborescent; leaves opposite or 3 in a whorl, ovate, acuminate, reflexed, glabrous; peduncles terminal, divided; fruit baccate. S. S. Native of China. C. occidentalis, Lour. coch. p. 67. but not of Lin. Acródryon orientális, Spreng. syst. 1. p. 386. A large tree. Flowers white, tetrameres, and tetrandroso. Berries 1-seeded, red, edible. Perhaps a species of *Morinda*. According to Sprengel, this with the following species will constitute a distinct genus, which he has called *Acródryon*.

Eastern Button-wood. Tree large.

8 C. ? angustifólius (Lour. coch. p. 67.) arborescent; leaves opposite, lanceolate-linear; heads of flowers terminal; lobes of calyx subulate, beset with glandular hairs; fruit baccate. S. G. Native of Cochin-china. Acródryon angustifólius, Spreng. syst. 1. p. 386. Receptacle of flowers villous. Flowers pale, tetramerous and tetrandroso. Berries roundish, crowned, 2-celled, 1-seeded, aggregate into a globose head. Perhaps a species of *Morinda*, or perhaps will form a distinct genus along with the preceding species.

Narrow-leaved Button-wood. Tree.

† † The following two species should be removed from the order altogether.

9 C. ? procum'bens (Lour. coch. p. 67.) stem procumbent; leaves alternate, ovate-lanceolate, tomentose; racemes terminal, interrupted; flowers 5-cleft, dioecious. S. G. Native of Cochin-china. Stílele procumbens, Spreng. syst. 1. p. 418. Flowers violaceous. The female flowers on a naked globular receptacle. Flowers numerous, on long peduncles, forming a ball or head. Stigma simple. This plant ought evidently to be excluded from the order, but it is hardly a species of *Stílele*.

Procumbent Button-wood. Shrub procumbent.
10 C. ? Monan (Lour. coch. 67.) arboreous; leaves alternate, ovate, acuminate, rough above, and tomentose beneath; peduncles axillary, solitary; flowers apetalous, dioecious, 4-cleft; seeds or fruit papose. f. G. Native of China. Flowers green, on solitary axillary peduncles, forming round heads, on naked globular receptacles. Mountain Button-wood. Tree large.

Cult. The first species, C. occidentalis, being hardy, is a very proper plant for the fronts of shrubberies. It thrives best in a peat soil; and is readily increased by layering, or by ripened cuttings under a hand-glass. The rest of the species being tender, their culture and propagation are the same as that recommended for Psychotria, p. 599.

Subtr. II. EUSPERMACOCEÆ (the genera contained in this subtribe agree with Spermacoeae in the distinct flowers, and divisible fruit). D. C. prod. 4. p. 540.—Spermacocea, H. B. et Kunth, nov. gen. am. 3. p. 341. Flowers distinct. Fruit dry, usually separable into 2 parts, rarely into 3 or 4 parts.

CLXXXIII. DEMOCRITAE (so named from Democritos, an ancient philosopher). D. C. prod. 4. p. 540.

Lin. syst. Pentändria, Monogyinia. Calyx with a turbinate rather angular tube, and 5 lanceolate acute stiff lobes. Corolla, stamens, and stigma unknown. Fruit adnate to the tube of the calyx and membranous pericarp at first, but at length becoming ruptured, 2-seeded, 2-celled while young, but at length only 1-celled from the dissepiment having vanished. Seeds free within the pericarp, flat inside, and convex outside. Albumen fleshy. Embryo erect, central.—A Chinese shrub, with the habit of Serissa. Flowers unknown; but the calyx and fruit are very different from those of Serissa. Branches terete, white, when young rather downy. Leaves opposite. Sheaths short, combined with the petioles a little, and bearing each 3 stiff bristles. Flowers in fascicles at the tops of the branches.

1 D. Serrisoides (D. C. prod. 4. p. 540.) f. G. Native of China, where it was collected by Sir George Staunton. Serisaa-like Decidua. Shrub 1 to 2 feet.

Cult. A mixture of loam, peat, and sand will be the best soil for this little shrub; and cuttings will be easily rooted in sand under a hand-glass.

CLXXXIV. OCTODON (from octo, octo, eight, and oöcos oöcos, edos edontos, a tooth; in allusion to the limb of the calyx, which is 8-toothed). Thonn. in Schum. pl. guin. p. 74. D C. prod. 4. p. 540.

Lin. syst. Tetrándria, Monogyinia. Calyx with a clavately obovate tube, and an 8-toothed limb; teeth very short, obtuse. Corolla campanulate, 4-cleft; lobes acute, beset with a few glandular hairs inside. Stamens inserted in the bottom of the tube of the corolla. Stigma globose, obsoletely bifid. Capsule turbinate, obsoletely tetragonal, 2-celled, 2-valved, dehiscing at the dissepiment; cells 1-seeded; valves semi-bifid inside. Seeds oblong.—An erect branched glabrous herb, about a foot high. Stems tetragonal. Leaves filiform, elongated, acute. Stipules sheathing, furnished with 3-4 bristles on each side, which are shorter than the sheath. Heads of flowers verticillate, terminal and axillary ones nearly equal, roundish.—Very nearly allied to Borreria; but differs from it in the calyx being 8-toothed, and in the other characters indicated above.

1 O. filiform (Thonn. l. c.)—Native of Guinea, where it was collected by Thonnion, and in the waters of the Senegambia and Gola by Leprieur and Perrottet. Spermacoea filifolia, Perr. et Lepr. ms.

Thread-leaved Octodon. Pl. 1 foot.

Cult. See Spermacoea for culture and propagation.


Lin. syst. Tetrándria, Monogyinia. Calyx with an ovate tube, and a permanent limb, which is parted into 2-4 teeth. Corolla salver-shaped or funnel-shaped, 4-lobed. Stamens 4, exerted or inclosed. Stigma bifid or unidivided. Capsule crowned by the limb of the calyx, 2-celled, opening from the apex at the dissepiment when mature, but without any free dissepiment; cocce or nuts 1-seeded, opening by a longitudinal chink inside. Seeds ovate-oblong, marked in front by a longitudinal furrow.—Herbs or shrubs; nearly all natives of the hotter parts of America. Stems and branches usually tetragonal. Leaves opposite, or the young ones are disposed in fascicles in the axils of the old ones, and therefore appearing verticillate. Stipulas joined with the petioles, more or less sheathing, fringed by many bristles. Flowers disposed in verticillate heads in the axils of the leaves, or on the tops of the branches, rarely cymose or corymbose, small, white, rarely blue.

§ 1. Flowers disposed in axillary and terminal verticillate heads: the terminal heads are girded by floral leaves, which are longer than them.

* Teeth of calyx only 2.

1 B. globularoides (Cham. et Schlecht. in Linnaea. 3. p. 312.) plant shrubby, erect, glabrous; branches somewhat tetragonal; leaves narrow-lanceolate, acuminate, with scabrous margins, paler beneath; bristles of stipulas longer than the sheath; heads of flowers globose, terminal or lateral; calyx bidentate; genitals exerted. f. S. Native of equinoctial Brazil. Spermacoea fruticosa, Pohl, in litt. Heads of flowers a little larger than peas. Flowers 3 times the size of those of B. verticillata, white. Capsule glabrous; nuts opening but slowly.

Globularia-leaved Borreria. Shrub 1 to 1½ foot.


3 B. houauiquina (Cham. et Schlecht. in Linnaea. 3. p. 311.) plant suffruticoso, glabrous; branchlets tetragonal; leaves oblong-linear, bluntish, mucronate, opposite, but appearing verticillate from clusters of young ones in their axils; bristles of stipulas shorter than the sheath; whorles of flowers globose, terminal, and axillary; capsule downy, crowned by the bidentate calyx. f. S. Native of Senegal and Gambia; and probably


4 B. stricta (Meyer, essq. p. 83. t. 1. f. 1-3. fr.) stems herbaceous, suffruticoso at the base, twiggly, glabrous, smooth, tetragonal at the apex; leaves linear, acute, petiolate, opposite or falsely verticillate; bristles of stipulae shorter than the sheath, which is downy; whorls of flowers globose, terminal, and axillary; capsule glabrous, oblong, crowned by the 2 subulate teeth of the calyx. \& S. Native of Porto-Rico, where it was collected by Ledru and Wydler. Flowers white. Nearly allied to B. verticillata, but differs in the capsule being twice longer. Lower leaves almost lancelolate-linear, rather scabrous on the margins at the top: upper ones usually with revolute margins.

Straight Borreria. Shrub \frac{1}{2} to 1 foot.

5 B. dichotoma (Cham. et Schlecht. in Linnaea. 3. p. 348.) stem suffruticoso, rather compressed, tetragonal; branchlets dichotomous; leaves lancelolate, acutely mucronate, glabrous, with serrulate margins; stipulae hairy, ciliated, with bristles at the apex; heads or whorls of flowers terminal and axillary; capsule scabrous from dots, glabrous, obovate, crowned by the 2 ovate-lanceolate teeth of the calyx. \& S. Native of Peru, near Ayavaca, (Diódia glabra, Willd. herb.), and on Mount Tanqueragua (Knöxía dichotoma, Willd. herb.). Spermacoce dichotoma, H. B. et Kunth, nov. gen. amer. 3. p. 348. Flowers white.

Dichoto-mous-branched Borreria. Shrub 1 to 2 feet.

6 B. podophila (D. C. prod. 4. p. 542.) stem branched, tetragonal, glabrous, rather downy at the nodi; leaves linear, glabrous, opposite, or falsely verticillate, almost veinless, with revolute margins; bristles of stipulae 5-7, longer than the sheath, which is downy; heads of flowers globose, and as if they were pedunculate, in consequence of the lateral branches being naked, except the 4 floral leaves surrounding each head; capsule oblong, glabrous, crowned by the 2 subulate calyceal teeth. \& S. Native of Mexico or of Cuba. This species differs from all the others in the heads of flowers being on long tetragonal peduncules, which are 1-2 inches long, naked and glabrous, sometimes rising from the forks of the branches, then solitary, and sometimes from the axils of the leaves, then opposite.

Stalked-headed Borreria. Pl. 1 foot.

7 B. distans (Cham. et Schlecht. in Linnaea. 3. p. 340.) stems herbaceous, erect, tetragonal, having the angles beset with retrograde prickles; leaves lancelolate, glabrous, with serrulate scabrous margins; stipulae hairy, ciliated with bristles; whorls of flowers capitulate, remote; capsule oblong, villous at the top, crowned by the 2 subulate teeth of the calyx. \& S. Native of Mexico. Spermacoce distans, H. B. et Kunth, nov. gen. amer. p. 344. Spermacoce aequale, Willd. herb. Spermacoce aequalea, Schlecht. in Schultes, syst. 3. p. 531. Flowers white. Very nearly allied to B. verticillata. Corolla funnel-shaped, a little longer than the calyx.

Distant-branched Borreria. Pl. 1 foot.

8 B. densiflora (D. C. prod. 4. p. 542.) stem erect, tetragonal, glabrous; leaves linear, with revolute margins, 1-nerved, glabrous; bristles of stipulae 7-9, longer than the sheath; whorls of flowers dense, sessile, 2-3 axillary, and the terminal one globose, and larger than the axillary ones; floral leaves 4-6, reflexed; capsule linear-oblong, villous at the apex, crowned by the 3 subulate calyceal teeth. \& S. Native of Jamaica. Spermacoce longifolia, L'Her. herb. but not of Auhl. Superior leaves 2 inches long, and 1-2 lines broad. Corollas small, glabrous.

Dense-flowered Borreria. Shrub 1 to 2 feet.

9 B. spinosa (Cham. et Schlecht. in Linnaea. 3. p. 310.) stem erect, herbaceous, simple, glabrous, somewhat tetragonal, with the angles a little mucrticaded; leaves lanceolate-linear, acuminate, attenuated at the base, glabrous, with roughish margins; the mid-rib drawn out into a prickly-formed tubercle at the apex; stipulae membranous, bristly; whorles of flowers capitulate, axillary ones 2-3, and the terminal one surrounded by an 8-leaved involucre; capsule oblong, downy at the apex, crowned by the 2 subulate teeth of the calyx. \& S. Native of the south of Jamaica, in fields; and of Martinique and Mexico. Spermacoce spinosa, Lin. spec. 148. exclusive of the syn. of Jacq. Swartz, obs. p. 45. Flowers white.

Spiny-leaved Borreria. Pl. 1 ft.

10 B. neesiana (D. C. prod. 4. p. 542.) glabrous, erect; stems herbaceous, tetragonal; leaves lanceolate, acute, scabrous on the mid-rib and margins; bristles of the stipulae 5, ciliated; whorles of flowers twin, one of them terminal; calyceal teeth 2, setaceous; throat of the corolla closed with hairs. \& S. Native of Brazil. Spermacoce linifolia, Nees. hor. berl. p. 49 but not of Vahl. Spermacoce Neesiana, Schultes, mant. 3. p. 209. Flowers white. The same as B. Bogotensis, according to Sprengel, but doubtful according to Cham. et Schlecht. in Linnaea. 3. p. 311.

Nees's Borreria. Pl. 1 foot.

11 B. repens (D. C. prod. 4. p. 542.) stems herbaceous, creeping, dichotomous, low, tetragonal, with the angles winged and pilose, and the sides striated; leaves oblong, acute, attenuated at the base, glabrous; bristles of stipulae shorter than the sheath, which is villous; heads of flowers roundish, sessile in the forks, and at the tops of the branches, and nearly in the axils of all the leaves; capsule ovate, rather villous, crowned by the 2 acute teeth of the calyx. \& S. Native of the Mauritius. Bigelovia parviflora, Sieb. fl. maur. exsic. no. 144. but not of Spreng. Flowers white.

Creeping Borreria. Pl. creeping.

12 B. minima (D. C. prod. 4. p. 542.) plant glabrous, herbaceous, small, sparingly branched; stems tetragonal; leaves oblong-linear, acuminate at both ends; bristles of the stipulae rather shorter than the sheath; heads of flowers terminal, involucrated by 4 leaves; calyceal teeth 2, subulate. \& S. Native of Brazil, where it was collected by Pohl. Herb a finger high, erect, or ascending. Corolla and mature fruit unknown.

Least Borreria. Pl. \frac{1}{2} foot.

** Teeth of the calyx 4.

13 B. radiata (D. C. prod. 4. p. 542.) stem herbaceous, erect, branched, terete, hispid from spreading hairs; leaves oblong-linear, acuminate, glabrous, glaucous, smooth, margined by a vein, 1-nerved; bristles of the stipulae longer than the sheath, which is villous; heads of flowers terminal, depressed, girded by 12-16 radiant floral leaves; capsule oblong, downy at the apex, crowned by the 4 short, linear-subulate teeth of the calyx. \& S. Native of Senegal, in sandy places, at Gula and Wala. Spermacoce radiata, Sieb. fl. sen. exsic. no. 8. Flowers white. A very distinct species, agreeing in habit with B. spinosa. Keel or mid-rib of the leaves smooth, and much exserted.

Ray-involved Borreria. Pl. 1 foot.

14 B. asperula (D. C. prod. 4. p. 543.) stem herbaceous, erect, glabrous, rather tetragonal; leaves oblong-linear, acute, glabrous; having the keel rather prickly from small stilt teeth; bristles of the stipulae longer than the sheath, which is membranous; heads of flowers many; verticillate; calyceal teeth 4, 1 or 2 of which are often deciduous, shorter than the ovaryum, which is rather pilose. \& S. Native of Brazil, about Bahia, in dry pastures, where it was collected by Salzmann.

Roughish Borreria. Pl. 1 foot.

15 B. subulata (D. C. prod. 4. p. 543.) plant herbaceous,
glabrous, erect, sparingly branched; stem tetragonal; leaves linear-subulate, with rather scabrous margins; bristles of the stipulas the length of the sheath; heads of flowers terminal, girded each by an erect 8-leaved involucrum; corolla tubular, glabrous; anthers exerted; teeth of the calyx 4, lanceolate, unequal, 2 of which are one half smaller than the other 2.  ○ S. Native of Mexico. Spermacoe subulata, Pav. ined. Flowers white.

**Subulate-leaved Borreria.** Pl. 1 foot.

16 B. gracilima (D. C. prod. 4. p. 543.) plant glabrous, herbaceous, slender, sparingly branched; branches rather tetragonal; leaves linear-subulate; stipulas lanceolate, undivided, or furnished with 3 bristles; heads of flowers terminal, on long peduncles, girded by 2-leaved involucra.  ○ S. Native of Brazil, where it was collected by Pohl. Flowers and fruit hardly known. Habit very much like that of B. subulata.

**Very slender Borreria.** Pl. ½ to 1 foot.

17 B. pusilla (D. C. prod. 4. p. 543.) stem herbaceous, slender, simple or branched, tetragonal, with the angles hairy and winged; leaves ovate, tapering into the petioles at the base, acute, glabrous; bristles of the stipulas few, rather shorter than the sheath; whorles of flowers axillary, sessile, dense; capsule small, ovate, crowned by the 2-3 small teeth of the calyx.  ○ H. Native of the East Indies. Spermacoe ocyrnoides, Burm. fl. ind. 34. t. 13. f. 1. but the angles of the stems are said to be glabrous.

**Basil-like Borreria.** Pl. ½ foot.

20 B. ramisparsa (D. C. prod. 4. p. 543.) smooth-stem; herbaceous, dichotomous, tetragonal; leaves oval-oblong, acute at both ends; bristles of the stipulas membranous, pale, longer than the sheath; whorles of flowers capitate in nearly all the axes, and on the tops of the branches, equal in size, sessile, girded by 2-4 leaves; capsule small-ovate, smooth, crowned by the teeth of the calyx, of which 2 are larger and subulate, and 2 small.  ○ F. Native of Brazil, where it was collected by Pohl. Angles of the stems, nerves of the leaves, and the base of the calyces downy, the rest of the herb glabrous.

**Flowers white.**

**Scattered-branched Borreria.** Pl. ½ to 3 foot.

23 B. parviflora (Meyer, cseq. p. 83. t. 1.) stem herbaceous, erect, tetragonal, with the angles usually hairy, and a little winged below; leaves oval-oblong, tapering to both ends, rather hairy beneath while young, and at length scabrous on the margins; bristles of the stipulas longer than the sheath; whorles of flowers axillary and terminal, dense, small, involucrated by 2-4 leaves; capsule ovate, crowned by the 4 short subulate calycine teeth.  ○ F. Native of the West Indies, as of Porto Rico, Guadaloupe, St. Domingo, &c.; and of Peru. Spermacoe aspera, Vahl, eel. p. 10. but not of Aublet. Spermacoe laevis from Guadaloupe, and Sperm. aspera from Hispaniola, Spreng. syst. 1. p. 401. ex herb. Balu. Perhaps Spermacoe levis, Lam. It differs from B. aspera, Aublet, in the much less scabrous stem, in the shorter leaves, and in the smaller whorles of flowers. Flowers white. Bigelovia alspera, Sieb. is a distinct plant from this. Bristles of the stipulas piliose.

**Small-flowered Borreria.** Pl. 1 to 2 feet.

25 B. alata (D. C. prod. 4. p. 544.) stems herbaceous, diffusely, radicant, branched, glabrous, tetragonal, with winged angles; leaves smooth oval, acuminate; bristles of the stipulas longer than the sheath; heads of flowers terminal, girded by 4 leaves; style bifid to the middle.  ○ F. Native of French Guiana, at the river Aroura. Spermacoe alata, Aubl. guian. 1. p. 60. t. 22. f. 7. Flowers white. Fruit divisible into 2, 1-seeded, dehiscens nuts. It is nearly allied to B. Bartlingiana, but the structure of the fruit and flowers is doubtful. Superior leaves sessile, rather cordate at the base. Stamens didymous, 2 of which are shorter than the corolla. Corollas rather large, blue.

**Winged-stemmed Borreria.** Pl. creeping.

26 B. Bartlingiana (D. C. prod. 4. p. 544.) stem herbaceous, diffuse, radicant, tetragonal, with winged pilose angles,
and the sides between the wings are lined with parallel veins; leaves oval, acutish, beset with bristle-like hairs on both surfaces; whorles of flowers sessile, glomerate, axillary ones numerous, and one terminal, girded by 4 leaves; capsule nearly globose, pilose, crowned by the 4 lanceolate teeth of the calyx.

C. F. Native of Mexico. Bigelovia alata, Bartl. in Herb. Hänke, but differs from B. alata in the wings of the stem being hispid, in the leaves being hispid and much less acute, in the axillary whorls, &c.

_Barling's Borreria._ Pl. creeping.

27 _B. Tampicae (D. C. l. c.)_ plant glabrous, diffuse, branched, herbaceous; branches tetragonal, with smooth angles; leaves oblong-linear, acute, 1-nerved, scabrous on the mid-rib, but not on the margins; whorls of leaves capitate from nearly all the axils, and from the tops of the stems, sessile, involucreted by 4-8 leaves; capsules small, ovate, glabrous, crowned by the 4 short subulate teeth of the calyx. _P. F._ Native of Mexico, at Tampico de Tamaulipas, where it was collected by Berlandier. Very nearly allied to _B. parejiflora_, but the nuts of the fruit are dissimilar, one of them bearing 3 of the calycine teeth, and the other 1.

_Tampico Borreria._ Pl. 1 foot.

28 _B. difflusa (D. C. l. c.)_ glabrous; stem diffuse, dichotomous, rather tetragonal; leaves linear, with revolute margins; stipules setiferous; whorles of flowers capitate, axillary, and terminal, globose, rather compound; floral leaves 4-8, reflexed; capsule oval, smoothish, crowned by the 4 short, subulate teeth of the calyx.—Native of Brazil, where it was collected by Pohl. _Spermacoea diffusa_, Pohl, in litt. but not of Kunth. Corollas small, smoothish, white. Capsule small, membranous, white.

_Diffuse Borreria._ Pl. diffuse.

29 _B. nematifolia (D. C. l. c.)_ stem slender, tetragonal, rather hairy; leaves oblong-linear, almost sessile, acute, scabrous above and on the margins, but downy beneath; bristles of the stipulas downy, a little longer than the sheath, which is villous; whorles of flowers capitate, terminal ones on long peduncles, a very few axillary; lobes of the calyx 4, narrow, acute, unequal, glabrous.—Native of Brazil, where it was collected by Pohl, in litt. but not of Ruiz et Pav.

_Remote-leaved Borreria._ Pl. 1½ to 2 feet.

30 _B. discolor (Bartl. in herb. Hänke, under Bigelowia, ex D. C. prod. 4. p. 545.)_ stem herbaceous, branched, quite glabrous, tetragonal, having the angles winged a little; leaves oval-oblong, or oblong-lanceolate, acute, scabrous above, and clothed with yellowish down beneath; bristles of the stipulas many, longer than the leaves; whorles of flowers axillary, and terminal, small, girded by 2 leaves; capsule nearly globose, rather downy, crowned by the 4 lanceolate teeth of the calyx.—Native of the Island of Manilla, near Sorzogon, where it was collected by Hänke.

_Discorded-leaved Borreria._ Pl. 1 to 2 feet.

31 _B. cornifolia (D. C. prod. 4. p. 545.)_ stem herbaceous, erect, tetragonal, tomentose; leaves petiolate, oblong, acute, with scabrous margins, and having the veins downy beneath; stipulas villous, of many bristles; whorles of flowers dense, 1 axillary, and 1 terminal, the latter girded by 4 leaves; calyx villous, with 4 equal teeth; anthers exserted. _P. F._ Native of Brazil. Spermacoea cornifolia, Fisch. in Nees. Hort. berl. p. 50. Link. Enum. Hort. berl. 1. p. 132. Cham. et Schlecht. Linnaea. 3. p. 313. Allied to _B. brachystemonoides_, but the fruit is unknown.


32 _B. Wyderhi (D. C. l. c.)_ stem herbaceous, ascending, elongated, rather tetragonal, with the angles rather hairy; leaves elliptic-oblong, attenuated at both ends, glabrous above, and downy on the nerves beneath; bristles of the stipulas 7, shorter than the sheath; whorls of flowers 2-3, axillary, distant, almost immersed in the stipular sheaths, and terminal, pedunculate, larger than the axillary ones; involucreted of 4 spreading leaves.—Native of Porto Rico, where it was collected by Wyder. Flowers white or yellow, densely crowded, intermixed with a number of bristles. Very like the following and preceding.

_Wyder's Borreria._ Pl. ascending.

33 _Brachystemonoides (Cham. et Schlecht. in Linnaea. 3. p. 314.)_ stems suffruticose at the base, erect, tetragonal, scabrous from retrograde hairs; leaves elliptic-lanceolate, acute, scabrous on both surfaces, and on the margins white, but glabrous above in the adult state; bristles of the stipulas longer than the sheath, which is villous; heads of flowers terminal, girded by 4 leaves; capsule oblong-conical, villous upwards, crowned by the 2 acute teeth of the calyx, and 1-2 accessory ones. _P. F._ Native of the south of Brazil. Flowers white.

_Brachystemon-like Borreria._ Shrub 1 to 2 feet.

34 _B. capitellata (Cham. et Schlecht. in Linnaea. 3. p. 319.)_ stems fistular; leaves petiolate, ovate, lined, acuminate, rather pilose on both surfaces; bristles of the stipulas 5-7; whorls of flowers axillary and terminal; capsules oblong, elliptic, hairy at the top, crowned by the teeth of the calyx, which are 3 times shorter than it.—Native of New Granada, near Santa Fe de Bogota. Spermacoea capitellata, Willd. in Rom. et Schultes, syst. 3. p. 530. H. B. et Kunth, nov. gen. amer. 3. p. 349, but not of Sprengel. Flowers white? Said to be allied to _B. scabiosoides_. Involucrum clothed with pili.

_Small-leaved Borreria._ Pl. 1 foot.

35 _B. scabiosoides (Cham. et Schlecht. in Linnaea. 3. p. 318.)_ stems fistular, terete, glabrous; leaves lanceolate, acute, on short petioles, with a few oblique veins, and scabrous margins; teeth of the stipulas 3-5, ending in a bristle each, shorter than sheath; heads of the flowers terminal, hemispherical, involucreted by 2-6 leaves; capsule glabrous, oblong, crowned by the 2-4 hairy teeth of the calyx.—Native of equinoctial Brazil. The part of the involucrum girding the flowers is pilose both inside and outside.

_Scabious-like Borreria._ Pl. ½ foot.

36 _B. capitata (D. C. prod. 4. p. 545.)_ stems shrubby at the base, prostrate; branches ascending, rather tetragonal, villous; leaves lanceolate, with scabrous margins, smoothish on both surfaces; bristles of the stipulas longer than the sheath; heads of the flowers terminal, hemispherical, involucreted by 2-6 leaves; corolla glabrous, tubular; anthers exserted; capsule glabrous, turbinate, crowned by the 4 lanceolate teeth of the calyx. _P. F._ Native of Peru, on the declivities of the mountains. Spermacoea capitata, Ruiz et Pav. Fl. per. 1. p. 61. t. 91. f. b. Branches purplish. Leaves sessile. Flowers white; anthers reddish.

_Capitate-flowered Borreria._ Shrub 1 foot.

37 _B. aturensis (Cham. et Schlecht. in Linnaea. 3. p. 345.)_ plant shrubby, erect; branches ascending, rather tetragonal, roughish; leaves narrow-linear, glabrous, with serrulate margins; stipula hairy, ciliated with bristles; heads of flowers terminal, rarely lateral; capsule hairy, oblong, crowned by the 4 linear-subsutrate, ciliated teeth of the calyx. _P. F._ Native on the banks of the Orinoco, near Ature. Spermacoea Aturensis, H. B. et Kunth, nov. gen. amer. 3. p. 345. Flowers white. Allied to _B. verticillata._ Corolla funnel-shaped, a little longer than the calyx.

_At ure Borreria._ Shrub 1 to 2 feet.

38 _B. erythrodes (Cham. et Schlecht. in Linnaea. 3. p. 316.)_ glabrous; stems herbaceous, erect, tetragonal, almost simple; leaves linear, acute, with revolute margins; bristles of the stipula 5, longer than the sheath; whorls of flowers nearly globose, terminal and axillary; capsule downy, elliptic, crowned
by the 4 nearly equal teeth of the calyx, and with a small accessory tooth between each of these. \( \text{S.} \) Native of the south of Brazil and Buenos Ayres. Heads small. Leaves an inch long, and a line broad. Seed oblong, granular.

**Eryngo-like Borreria.** Pl. 1 foot.

39 B. satuellefolia (Cham. et Schlecht. in Linnae. 3. p. 318.) stem shrubby, erect, smoothish; branchlets tetragonal; leaves linear-lanceolate, acute, glabrous, with somewhat revolute edges; bristles of the stipulas rather downy, longer than the sheath; whorles of flowers semi-globose, axillary, and terminal, the latter the largest; capsule glabrous, crowned by the 4 elongated calycine teeth, which are furnished with short papil in the recesses. \( \text{S.} \) Native of equinoctial Brazil. Said to be allied to *B. suaveolens*, but the flowers are smaller, the involucral leaves are larger, and the stature is smaller, &c.

**Savory-leaved Borreria.** Shrub 1 foot.

40 B. suaveolens (Meyer, essq. p. 81. t. 1.) glabrous; stem shrubby, erect, much branched; branchlets slightly tetragonal; leaves linear, pungent, opposite, and falsely verticillate; bristles of the stipulas stiff, rather shorter than the sheath; whorles of flowers globose, a few axillary, and a larger terminal one, which is involucrated by 8 leaves; corolla glabrous, with acuminate lobes; capsule ovate, glabrous, crowned by the 4 teeth of the calyx, and 4 small accessory ones in the recesses between the others. \( \text{S.} \) Native of Dutch Guiana, in shady places, at Arrowbackcreck. Bigelovia suaveolens, Spreng. syst. 1. p. 404. exclusive of the variety from Porto Rico, and probably that from Brazil. Corolla funnelformed, ex Meyer. Stamines exerted.

**Sweet-scented Borreria.** Shrub 1 to 2 feet.

41 sideritis (Cham. et Schlecht. in Linnae. 3. p. 291.) plant scabrous from hairs; stem tetragonal, having the angles a little winged; leaves ovate-oblong, sessile, marked by 4 nerves on both sides; bristles of the stipulas shorter than the sheath, which is pilose; whorles of flowers axillary, at length globose; lobes of the corolla bearded outside; capsule pilose, ovate, crowned by the 4 teeth of the calyx. \( \text{S.} \) Native of equinoctial Brazil. Plant probably procumbent.

**Sideritis-like Borreria.** Pl. procumbent.

42 B. scadens (D. C. prod. 4. p. 546.) stem shrubby at the base, ascending, weak, rather scandent, branched; branchlets tetragonal, striated, rather scabrous along the angles; leaves ovate, glabrous, glabrous, tapering into the petioles a little; bristles of the stipulas few, shorter than the sheath; heads of flowers small, terminal, girded by 4 leaves; capsule oval, glabrous, crowned by the 4 teeth of the calyx. \( \text{S.} \) Native of Guadaloupe, where it was collected by Bertero. Diódia sarmentosa, from Guadaloupe, Spreng. syst. 1. p. 405. Spermacéce scandens, Gmel. syst. 235.—Sloan. jam. hist. 1. t. 28. f. 4. A. It differs from *Diódia sarmentosa*, in the leaves being glabrous and more ovate, in the heads being terminal, and in the fruit being dehiscent.

**Climbing Borreria.** Shrub 1.

43 B. affinis (D. C. prod. 4. p. 546.) stems herbaceous, tetragonal, having the angles scabrous from pilis; leaves oblong-lanceolate, acuminate, tapering to the base, scabrous from scattered pilosities, and more so along the veins beneath; bristles of the stipulas yellow, 7-9, longer than the sheath; whorles of flowers sessile, axillary, and terminal, the latter involucrated by 2-4 leaves; capsule oval, glabrous, crowned by the 4 subulate teeth of the calyx, and 4 smaller subulate accessory ones in the recesses between the others.—Native of Brazil, where it was collected by Pohl. Spermacéce affinis, Pohl, in litt.

**Allied Borreria.** Pl. 1 foot.

44 B. microphylla (D. C. prod. 4. p. 456.) glabrous; stems herbaceous, ascending, tetragonal; leaves lanceolate-linear, acute; bristles of the stipulas 7-9, longer than the sheath; whorles 10-12-flowered in nearly all the axils, and at the tops of the stem and branches, all equal in size, the latter girded by 4-6 leaves; capsule oval, downy, crowned by the 4 subulate teeth of the calyx.—Native of Brazil, where it was collected by Pohl. Spermacéce microphylla, Pohl, in litt.

**Small-leaved Borreria.** Pl. ascending.

45 B. rubro-stipulata (D. C. i. c.) stem herbaceous, branched; branches elongated, hairy, terete; leaves oblong-lanceolate, acuminate, downy on both surfaces; bristles of the stipulas longer than the sheath, which is villous; whorles of flowers capitiate, 3-4 axillary, and one terminal, the latter the largest, and girded by 4 leaves; teeth of the calyx 4; stamens exerted. \( \text{S.} \) Native of Brazil, where it was collected by Pohl. Spermacéce rubro-stipulata, and Sperm. fascículata, Pohl, in litt. Spermacéce Brasilienis, Spreng. syst. 1. p. 402. Fruit unknown.

**Red-stipled Borreria.** Pl. \( \frac{1}{2} \) to 1 foot.

46 B. elongata (D. C. prod. 4. p. 547.) stem herbaceous, branched; branches elongated, hairy, terete; leaves oblong-lanceolate, acuminate, downy on both surfaces; bristles of the stipulas longer than the sheath, which is villous; whorles of flowers capitulate, 1-2 axillary, and a nearly globose terminal one, which is involucrated by 5-6 leaves; teeth of the calyx 4, acute, short.—Native of Brazil, where it was collected by Pohl. Spermacéce verticillata, Pohl, in litt. Branches a foot high. Leaves usually in fascicles in the axils. Fruit unknown, and therefore the plant is referred to *Borreria* from habit only.

**Elongated-branched Borreria.** Pl. 1 to 2 feet.

47 B. ferruginea (D. C. prod. 4. p. 547.) stem herbaceous, hard, erect, branched; branches tetragonal, hairy; leaves oblong-acute, obliquely 3-4-nerved, scabrous above, and pale beneath and scabrous on the nerves from hairs; bristles of the stipulas the length of the sheath; whorles of flowers globose, terminal, and axillary; capsule downy, crowned by the 4 subulate teeth of the calyx. \( \text{S.} \) Native of Brazil, in elevated pastures in the provinces of Minas Geraes and St. Paul. Spermacéce ferruginea, St. Hil. pl. usucl. bras. no. 13. t. 13. Spermacéce globsa, Pohl, in litt. The hairs on the branches and nerves of the leaves are rust coloured. Corollas rose-coloured, violaceous, or white, with the lobes pilose at the apex. Heads of flowers one half larger than those of *B. verticillata*, which is it very like. The plant is called Poaya and Poaya do praya at Cape Frio. The roots are of a brown colour, and are used as *Ipecacuanha*.

**Rusty Borreria.** Pl. 1 to 2 feet.

48 B. splic'era (D. C. i. c.) stem suffruticoso at the base? branched, terete, glabrous; leaves oblong-linear, acute, scabrous above, pale and villous beneath; bristles of the stipulas longer than the sheath, which is villous; heads of flowers globose, terminal, and axillary; capsule oblong, glabrous, crowned by the 4 subulate ciliated teeth of the calyx. \( \text{S.} \) Native of Cayenne. Very like *B. ferruginea*, but differs from it in the branches being smoothish, in the leaves being less nerved, in the involucral leaves being 4, larger and reflexed, and in the capsules being twice the length.

**Spherical-headed Borreria.** Shrub 1 to 2 feet.

49 B. lute'egnea (D. C. prod. 4. p. 547.) stem terete, simple, clothed with dense soft hairs, but with retrograde down at the apex; leaves sessile, lanceolate, acuminate, villous on both surfaces, furnished with 4 oblique nerves on each side; bristles of the stipulas stiff, rufous, much longer than the sheath, which is almost obsolete; whorles of flowers dense, sessile,
1-2 axillary, and a terminal globose one, which is involucred by reflexed bracteas; capsule oblong, villous at the apex, crowned by the 4 subulate, glabrous teeth of the calyx.—Native of Brazil, where it was collected by Pohl. Spermacéce lacteis, Pohl, in litt. Allied to B. ferruginea.

L'escott's Borrieia. Pl. 1 foot.

50. B. HENKEÁNA (D. C. l. c.) stem erect, sub-herbaceous, straight, branched, tetragonal, with the angles hairy at the apex; leaves linear, acute, rather scabrous, with rather revolute edges; bristles of the stipulas longer than the sheath; heads of flowers globose, terminal, girded by 4-leaved reflexed involucra; capsule obovate, roughish, crowned by the 4 lanceolate teeth of the calyx.—Native of Mexico and Peru. Bigelovia psyllioides, Bartl. in herb. Hænke. Spermacéce tenió, Pav. ined. but not of Lin. It differs from B. psyllioides in the involucrum being reflexed, in the heads being one half larger, in the limb of the calyx being divided into 4 lobes to the base, not to the middle.

Henke's Borrieia. Pl. 1 foot.

51. B. strictissima (D. C. l. c.) stem and branches straight, tetragonal, clothed with powdery down under the nodi; leaves linear, acute, glabrous, almost veinless, opposite, and in axillary fascicles; bristles of the stipulas 3-7, stiff, longer than the sheath; whorles of flowers capitate, sessile, 1½ to which are axillary, and a larger terminal globose one, which is girded by 2-4 leaves; capsule oblong, glabrous, crowned by the 4 short subulate teeth of the calyx.—Native of Brazil, where it was collected by Pohl. Spermacéce strictissima, Pohl, in litt. Allied to B. suavolensa, but differs from that species in the calyx being without accessory teeth. Corolla unknown.

Very straight Borrieia. Pl. 1 to 2 feet.

52. B. tenéélla (Cham. et Schlecht. in Linnaea. 3. p. 317.) stem suffruticos at the base, erect, nearly terete, clothed with retrograde adpressed villi; leaves oblong-linear, acuminated, clothed with small down above, and scabrous on the nerves and margins, having a few oblique nerves on both sides; bristles of the stipulas longer than the sheath, which is downy; heads of flowers globose, terminal, surrounded by 4 reflexed leaves; capsules oblong, hairy at top, crowned by the hairy 4-toothed calyx.  7 S. Native of equinociti Brazil.

Var. 8, angustifólia (D. C. prod. 4. p. 547.) plant weak; leaves narrow-linear; head size of peas; floral leaves spreading.  7 S. Native of Brazil, where it was collected by Pohl; and along the banks of the Orinoco, by Humboldt and Bonpland. Spermacéce longíseta, Pohl, in litt. Spermacéce teniéla, H. B. et Kunth, nov. gen. amer. 3. p. 345. Sperm. capítata, Willd. herb. Sperm. Orinocénis, Willd. in Rœm. et Schultes, syst. 3. p. 531.

Var. γ, lavandulafoía (D. C. prod. 4. p. 548.) stem at first clothed with fine velvety down, but at length becoming glabrous; leaves linear, with rather revolute margins; bristles of the stipulas very long; heads of the flowers hemispherical, depressed, involucrated by 4 spreading leaves.  7 S. Native of Brazil, where it was collected by Pohl. Spermacéce lavandulafoía, Pohl, in litt.

Weak Borrieia. Shrub ½ to 1 foot.

53. liníoides (D. C. prod. 4. p. 458.) quite glabrous; stem suffruticos at the base, erect; branches tetragonal; leaves linear, acute, with revolute edges; stipulas ending in 1-3 stiff, setaceous points; axillary heads few, or wanting, and 1 terminal and sub-globose, the latter involucrated by 2-4 reflexed floral leaves; corolla glabrous; capsule oval, glabrous, crowned by the 4 short teeth of the calyx.  7 S. Native of Brazil, where it was collected by Pohl. Spermacéce liníoides, Pohl, in litt. Anthers exerted.

Flax-like Borrieia. Shrub 1 foot.

54. B. ? psyllioides (H. B. et Kunth, nov. gen. amer. 3. p. 346. t. 278. under Spermacéce) stem suffruticos, erect, tetragonal, branched, scabrous from retrograde bristles; leaves linear-lanceolate, hairy on both surfaces, with serrulate scabrous edges; bristles of stipulas longer than the sheath; heads of flowers terminal, involucrated by 6-8 radiant floral leaves; calyx funnel-shaped, 4-cleft to the middle.  7 S. Native of Mexico, near Ario. Fruit unknown, but from habit it is evidently a species of Borrieia. Very nearly allied to B. strictissima and B. Henkeána. It differs from all the rest of the species in the calyx being divided to the middle.

Pleuwort-like Borrieia. Shrub 1 to 2 feet.

55. B. flaveósens (D. C. prod. 4. p. 548.) plant diffuse, quite glabrous, suffruticos at the base; branchlets tetragonal; leaves oblong, acute, attenuated at the base; bristles of stipulas 2-3, longer than the sheath; axillary whorles of flowers few, and one terminal and larger than the axillary ones, the latter involucrated by 2-4 floral leaves; capsule oval, crowned by the lanceolate teeth of the calyx. 7 S. Native of Brazil, where it was collected by Pohl. Spermacéce flavescentis, Pohl, in litt. The whole herb is yellowish. The nuts of the immature fruit appear almost indehiscent; it is, therefore, perhaps a species of Diosia, with the habit of Borrieia.

Yellowish Borrieia. Shrub diffuse.

56. B. scábrida (D. C. l. c.) stem erect, tetragonal, scabrous on the angles; leaves lanceolate, acute, with 4 oblique nerves on both sides, scabrous above, and pilose on the nerves beneath; bristles of stipulas 5, stiffish, longer than the sheath; whorles of flowers capitate, sessile, terminal, and axillary, apiculate; corolla glabrous; capsule oblong, glabrous, crowned by the 4 subulate teeth of the calyx.—Native of Brazil, where it was collected by Pohl. Spermacéce scábrida, Pohl, in litt. Corollas one half smaller than in B. ascélpiaédea.

Scabrous Borrieia. Pl. 1 to 2 feet.

57. B. ascélpiaédea (Cham. et Schlecht. in Linnaea. 3. p. 330. under Bigelovia) plant smoothish, suffruticos at the base; stems erect, tetragonal, glabrous, but downy at the apex, having the angles winged; leaves lanceolate, acute, glabrous, obliquely 4-nerved on both sides; bristles of stipulas 5, longer than the sheath, the middle one the longest; whorles of flowers loosely capitate, terminal, and axillary; lobes of corolla lanceolate, bearded a little; capsule elliptic, crowned by the 4 elongated, acuminated teeth of the calyx. 7 S. Native of the south of Brazil. Stipulas 2, revoltate.

Var. 8, glábermmá (D. C. prod. 4. p. 548.) stems and corollas glabrous; stipulas furnished with one bristle each.  7 S. Native of equinociti Brazil.

Asécélpia-like Borrieia. Shrub 1 to 2 feet.

58. B. perrotteáth (D. C. l. c.) stem herbaceous, tetragonal, with rather rough angles; leaves oblong-lanceolate, acuminated at both ends, scabrous above, and downy beneath, obliquely nerved; bristles of stipulas 9, hispid, longer than the sheath; flowers axillary, verticillate, sessile; capsule oblong, compressed, crowned by the 4 lanceolate acute connivent teeth of the calyx.—Native of French Guiana, where it was collected by Perrottet. Perhaps Sperm. áspera, Aubl. guian. 1. p. 59. t. 22. f. 6. not of Vail, but in the present plant the branches are nearly glabrous.

Perrotteá's Borrieia. Pl. 1 foot.

59. B. nervósá (Pohl, in litt. under Chlorophytm, ex D. C. prod. 4. p. 548,) the whole plant clothed with scabrous pubescence; stems erect, tetragonal, striated; leaves lanceolate, or oval-lanceolate, acute, obliquely 4-5-nerved on both sides; stipulas cleft into 3-5 linear, acute ligulae; whorles of flowers axillary and terminal, sessile; lobes of calyx 3-4, longer than the ovary, lanceolate, acuminated, scabrous, a little toothed at
the apex.  2. S. Native of Brazil, where it was collected by Pohl. Perhaps the same as Spermacoce Poáya, var. pubescens, St. Hil. &c.

_Nerved-leaved Borreria._ Pl. 1 foot.

60. _B. pratesis_ (Pohl. in litt. under Chlorophyllum, ex D. C. prod. 4. p. 548.) quite glabrous; stem tetragonal, erect, almost simple, with the angles a little winged; leaves sessile, oblong-acute, with 6-7 prominent veins on each side; stipulas triangular, 3-4-toothed at the apex: teeth acute, middle one the largest; heads of flowers axillary and terminal: lower ones on short peduncles, the rest sessile; lobes of calyx 4, lanceolate-linear; lobes of corolla smooth; stamens exserted. 2. S. Native of Brazil, where it was collected by Pohl. Corolla very like that of _B. Poáya_ when dry. Perhaps the same as _Spermacoce ganianoides_, St. Hil. pl. us. bras. no. 12. in a note.

_Meadow Borreria._ Pl. 1 foot.

61. _B. Poáya_ (D. C. prod. 4. p. 549.) quite glabrous; stem herbaceous, simple, tetragonal; leaves sessile, oblong-elliptic, acute, obliquely 6-nerved on both sides; stipulas cleft into many long bristles; whorls of flowers capitulate, sessile, few axillary, and a larger terminal one; lobes of calyx 4, lanceolate-linear, acute, longer than the ovary; corolla smooth; anthers exserted. 2. S. Native of Brazil, in elevated pastures, in the mine provinces frequent. _Spermacoce Poáya_, var. 4, St. Hil. pl. us. bras. no. 12. t. 12. Corolla blue, with the lobes rather hairy above. The roots are white, and are substituted with success in place of Ipecacuanha. The leaves are at first sweet, but afterwards acid, and a decoction of them is used in the cure of cholics.

_Poáya_ Borreria.  Pl. ½ to 1 foot.

62. _B. platyphylla_ (D. C. prod. 4. p. 549.) the whole plant is scabrous from stiff hairs; stem herbaceous, erect, simple, tetragonal, having the angles a little winged; leaves lanceolate, acute, attenuated at the base, obliquely 4-5-nerved on both sides; stipulas ending in 5-7 very long scabrous bristles; whorls of flowers sessile, capitulate, many axillary, and one terminal, which is hardly larger than the rest; lobes of calyx 4, lanceolate-linear, subulate, scabrous, longer than the ovary. 2. S. Native of Brazil, where it was collected by Pohl. _Spermacoce latifolia_, Pohl. in litt. but not of Aubb. Bristles of stipulas 6-9 long. Very nearly allied to _B. Poáya_, but differs in being hispid. Corolla unknown.

_Broad-leaved Borreria._ Pl. ¾ to 1 foot.

63. _B. cymosœphala_ (D. C. prod. 4. p. 549.) stem branched, tetragonal, striated, furrowed, and glabrous between the angles: and the angles are winged a little, and rough from being serrated; leaves ovate, acute, attenuated at the base, glabrous, obliquely nerved; bristles of stipulas 7-9, longer than the sheath; whorls of flowers nearly globose, many axillary, and one terminal, which is naked from the abortion of the floral leaves; teeth of calyx 2-3, conically subulate.—Native of Brazil. This plant is probably generically distinct from _Borreria_. Stem tetragonal and smooth between the heads. Corollas small, Anthoes incised.

_Naked-headed Borreria._ Pl. 1 foot.

64. _B. cymosa_ (Cham. et Schlecht. in Linneae. 3. p. 323.) shrubby, glabrous; branches flexuous, tetragonal; leaves elliptic-lanceolate, acuminate, coriaceous, on short petioles; stipulas interpetiolar, connate, drawn out on both sides into 5 linear segments, the middle segment the longest; heads of flowers 3 at the top of each stem, and the lateral ones pedunculated and almost leafless; capsule smooth, crowned by the 4 lanceolate-linear teeth of the calyx. ½. S. Native of Brazil, in the province of Rio Janeiro. _Spermacoce cymosa_, Spreng. syst. 1. p. 403. Leaves 3 inches long, and one broad. Corollas hairy outside. Inflorescence rather panicked.

_Cymose-headed Borreria._ Shrub 2 to 3 feet.

§ 2. Flowers solitary, or in axillary fascicles.

65. _B. virgata_ (Cham. et Schlecht. in Linneae. 3. p. 324.) branches fistular, tetragonal, with downy angles; leaves lanceolate-tapering to both ends, glabrous on the margins, and scabrous at the nerves beneath; upper stipulas undivided, the rest downy, and furnished with 5-9 bristles; flowers glomerate in every other axil; capsules downy, elliptic, crowned by the irregularly 2-6-toothed calyx. 2. S. Native of Brazil, about Rio Janeiro.

_Twiggly Borreria._ Pl. 1½ foot.

66. _B.aponariaefolia_ (Cham. et Schlecht. in Linneae. 3. p. 325.) glabrous; stem prostrate, tetragonal, fistular, branched; leaves sessile, acuminated, with scabrous margins; lower ones obovate, upper ones lanceolate: bristles of stipulas 1-3, hairy, the middle one the largest; flowers solitary in every axil; capsule glabrous, oblong-elliptic, crowned by the 2 primary and the 2 accessory teeth of the calyx.—Native of Brazil.

Soap-wort-leaved Borreria. Pl. prostrate.

67. _B. aúda_ (D. C. prod. 4. p. 549.) stems simple, erectish, tetragonal, downy, glabrous at the apex; leaves linear, acute, scabrous on the nerve beneath at the apex, with revolute serrately scabrous edges; bristles of stipulas 5-7, stiffish, longer than the sheath; flowers 2-3 together, axillary, sessile; capsule ovoblong, rather downy, crowned by the 2 subulate teeth of the calyx.—Native of Porto Rico, in arid places by the sea side, where it was collected by Bertero. _Bigelovia suaveolens_, from Porto Rico, Spreng. syst. 1. p. 416. but is very distinct from the true _B. suaveolens_.

_Arid Borreria._ Pl. 1 foot.

§ 3. Flowers disposed in cymes, or corymbose-cymes. Floral leaves small. Corollas campanulately funnel-shaped. Seeds marked by a crest inside, probably in all. Perhaps a proper genus.

68. _B. ericoides_ (Cham. et Schlecht. in Linneae. 3. p. 326.) shrubby, erect, glabrous; branchlets tetragonal; leaves linear, bluntish, 1-nerved, opposite, or in whorled fascicles: bristles of stipulas 3-5, shorter than the sheath; cymes terminal, 3-4-forked; floral leaves small; capsule cylindrically turbinate, crowned by the 4 elliptic teeth of the calyx. ½. S. Native of equinoctial Brazil. Corolla short, funnel-shaped, glabrous outside, and villous in the throat. Habit of a heath.

_Heath-like Borreria._ Shrub ½ to 1 foot.

69. _B. anthospermoides_ (D. C. prod. 4. p. 550.) glabrous; branches twiggy, tetragonal; leaves linear, acutish, nerveless; bristles of stipulas many, stiff, longer than the sheath; corymbose small, terminal, crowded; lobes of calyx 4, narrow, acute. ½. S. Native of South America, near Santa Fe de Bogota. Habit of _B. stipulifera_, with the inflorescence of _B. ericoides_. Mature fruit unknown.

_Anthospermum-like Borreria._ Pl. 1 foot.

70. _B. equatorisorum_ (Cham. et Schlecht. in Linneae. 3. p. 327.) shrubby, downy; branches bluntly tetragonal; leaves obovate-oblong, acute, lined; bristles of stipulas equal in length to the sheath; cymes terminal, compact, trichotomous; floral leaves small; capsule oblong, downy, crowned by the 4 ovoid teeth of the calyx. ½. S. Native of Equinoctial Brazil. Corolla campanulately funnel-shaped, downy outside.

_Equatorium-like Borreria._ Shrub 1 foot.

71. _B. centranthoides_ (Cham. et Schlecht. in Linneae. 3. p. 328.) plant herbaceous, smoothish; stem ascending, fistular, bluntly tetragonal; leaves elliptic-lanceolate, attenuated at both ends, rather scabrous; bristles of stipulas 5-7, hardly longer than the sheath; cymes terminal, fastigiate, pedunculate; floral leaves small; capsule hairy, obconically cylindrical, crowned by 4 K.
the 4 ovate teeth of the calyx.  \( \mathfrak{Z.} \)  S.  Native of the south of Brazil.

**Var. \( \beta \), angustifolia** (Cham. et Schlecht. l. c.) the whole plant canescent from hairs; leaves oblong-lanceolate, much more nerved than those of the species.  \( \mathfrak{Z.} \)  S.  Native of the south of Brazil.

**Centranthus-like Borreilia.**  Pl. 1 to 2 feet.

72  B.  **Pohlia**na (D. C. prod. 4. p. 550.) branches hairy, compressed; leaves lanceolate, acuminate, lined, downy above, and rather hairy on the nerves beneath; bristles of stipulae length of sheath, which is villous; corymbs trichotomous, terminal, crowded; tube of calyx canescent from hairs; lobes of calyx 4, lanceolate; corolla hairy inside.—Native of Brazil, where it was collected by Pohl.  Hydrophyllax pusillum, Pohl, in litt.  Fruit unknown, but the plant has a habit very different from *Hydrophyllax*, and appears to be nearly allied to **B. eupatorioides** and **B. centranthoides**.

**Pohlia's Borreilia.**  Pl. 1 foot.

73  **B. angustifolia** (Cham. et Schlecht. in Linnaea. 3. p. 330.) plant herbaceous, erect, glabrous; stem tetragonal; leaves lanceolate-linear, with revolute edges, having 2-3 veins on each side of the mid-rib; bristles of stipulae twice the length of the sheath, which is downy; cymes trichotomous, contracted; floral leaves bristles of calyx oblong-lanceolate, membranous, with scabrous edges; bristles of stipulae glabrous, length of the sheath, which is downy; cymes terminal, somewhat trichotomous; floral leaves small; capsule elliptic, rather truncate, crowned by the 4, ovate, acute teeth of the calyx.  \( \mathfrak{Z.} \)  S.  Native of the south of Brazil.

**Loose-leaved Borreilia.**  Pl. 2 feet.

78  **B. ? squisitoides** (Cham. et Schlecht. l. c. p. 338.) glabrous; root woody; stems herbaceous, erect, contracted at the nodi, bluntly tetragonal? leaves narrow-linear, straight, almost filiform, with revolute, scabrous edges; stipules fusescence, ciliated with bristles; cymes terminal and axillary, crowded.  \( \mathfrak{Z.} \)  S.  Native of the south of Brazil.  Habit of the plant elegant; but the fruit being unknown, it is very doubtful whether it belongs to the present genus.

**Horse-tail-like Borreilia.**  Pl. 3 feet.

\[ \S \] 4.  **Flowers umbellate; umbels cymose or capitulate.**

79  **B. umbellata** (Spreng. neu. entd. 2. p. 144.) stem herbaceous, branched, somewhat tetragonal, shining; leaves lanceolate, tapering to both ends, glabrous; stipules setose, connate at the base; umbels pedunculate, semi-globose, axillary, and terminal; capsule obconical, downy, crowned by the 4 acute teeth of the calyx.  \( \mathfrak{Z.} \)  S.  Native of Brazil, within the tropic.  Cham. et Schlecht. in Linnaea. 3. p. 353.  Bigelowia umbellata, Spreng. syst. 1. p. 405.  Corolla small, white.  Herb clothed with very fine down while young.

**Umbellate-Flowered Borreilia.**  Pl.

80  **B. ? alaloides** (Cham. et Schlecht. in Linnaea. 3. p. 339.) glabrous; stem herbaceous, erect, fustular, tetragonal, branched at the top; leaves lanceolate, acuminate, on short petioles, rather coriaceous; bristles of stipulas few, shorter than the sheath; cymes umbellate, terminal, downy, with tetragonal branchlets; calyx glabrous, acutely 4-toothed; anthers exerted.—Native of Equinoctial Brazil.  Allied to *B. umbellata*, but is twice the size in all its parts.  Fruit unknown, therefore the genus is doubtful.

**Aralia-like Borreilia.**  Pl. 2 feet.

\[ \dagger \]  Species not sufficiently known.

81  **B. adscendens** (Cham. et Schlecht. in Linnaea. 3. p. 340.) glabrous; stems ascending; leaves linear-lanceolate, acute; stipulas toothed; teeth bristly.—Native of Madagascar.  Spermacoce adscendens, Wildl. in Rœm. et Schultes, syst. 3. p. 533.

**Ascending Borreilia.**  Pl.

82  **B. vaginata** (Cham. et Schlecht. l. c. p. 340.) stem suffrutescent, and is as well as the branches, terete and glabrous; leaves lanceolate; stipulas connate; lower ones sheathed; fruit hispid.—Native of St. Domingo.  Spermacoce vaginata, Wildl. in Rœm. et Schultes, syst. 3. p. 531.  Bigelowia vaginata, Spreng. syst. 1. p. 405.

**Sheathed Borreilia.**  Shrub 1 foot.

83  **B. sinifolia** (D. C. prod. 4. p. 551.) stem herbaceous, tetragonal, rather villous on the angles; leaves linear-lanceolate, acute, on short petioles, villous, with scabrous margins; bristles of stipulae rather shorter than the flowers; whorls of flowers axillary and terminal; the latter globose, and girded by 4 leaves; anthers exerted; calyxes clothed with cinereous villi.—Native of Cayenne.  Spermacoe sinifolia, Wohl, eel. 1. p. 8. but not of Nee.  Bigelowia sinifolia, Spreng. syst. 1. p. 404.

**Flax-leaved Borreilia.**  Pl. 1 foot.

**Cult.**  The species of *Borreria* are of most easy culture.  A light soil suits them best; and cuttings of the perennial and shrubby kinds strike root readily in the same kind of soil, in heat.  The annual kinds require the treatment of other tender annuals.

1

Lin. syst. Tetrandria, Monogynia. Calyx with an ovate or turbinate tube, and a 2-4-lobed limb (f. 108. a. b.), and sometimes accessory teeth in the recesses of the primary lobes. Corolla salver-shaped, or funnel-shaped, 4-lobed (f. 108. c.). Stigma bifid or undivided. Capsule crowned by the limb of the calyx (f. 108. f.), which is often obliterated, 2-seeded; nuts 1-seeded, dividing into 2 parts from the apex : the one part closed by the adnate sepiments, and the other open. Seed oval-oblong, marked inside by a longitudinal furrow.—Herbs or subshrubs. Branches or stems usually tetragonal. Leaves opposite. Stipulas combined with the petioles, sheathing, fringed by numerous bristles. Flowers axillary, sessile, crowded, verticillate, or semi-verticillate, white, red, or blue.—The fruit of this genus is drawn with great character in Gærtn. fruct. 1. t. 25.—The fruit of a great number of the plants still preserved in this genus being unknown, many of them will yet be expelled, when proper specimens can be procured.

* Species natives of America.*

1 S. tenor (Lin. spec. p. 147.) stems herbaceous, branch- ed; branches tetragonal, with the angles smooth or scabrous; leaves lanceolate, on very short petioles, rather scabrous above and on the margins; bristles of stipulas hardly longer than the sheath; flowers disposed in sessile axillary fascicles, semi-ver- ticillate; stamens inclosed; capsule oval, usually hairy, crowned by the 4 short, acute calycine teeth. O. F. Native of the West India Islands, as of Jamaica, Martinico, Porto-Rico, Cuba, St. Domingo, &c., as well as of Peru, Panama, Carolina, very frequent. Š. lanceolata and Š. dichotoma, Willd. in herb. S. parviflora, Salisb. prod. p. 60.—Dill. elth. p. 370. t. 359. Lam. ill. t. 62. f. 1. There are varieties of this species (ex Swartz, obs. p. 43.) with smooth, pubescent, and straight or ascending stems; narrow and broader leaves; whorled or solitary flowers; smooth or hispid fruit, having one of the parts or nuts bearing 3 of the calycine teeth, and the other bearing only one. The varieties are so numerous, and run so gradually into each other, as hardly to be distinguished, many speci- mens of which are to be found in herbaria, under various names, from their different habits; as P. assúrgens, Spreng. syst. 1. p. 402. a native of Porto-Rico, but not of the fl. per.; and Sperm. longifólia, Bartl. in herb. Hænke, &c. Some specimens are suffruticoso at the base, and others are herbaceous. Perhaps the whole form in congersies of species, of which some may be ultimately distinguished from each other. The flowers in most of the varieties are of a white or pink colour, and one is said to have yellow flowers.

Slender Spermacoce. Fl. June, Aug. Clt. 1792. Pl. 1 to 2 ft. 2 S. Portorícense (Balb. in herb. Bert. ex D. C. prod. 4. p. 552.) stems herbaceous, glabrous, tetragonal; leaves elliptic-oblong, acuminate at both ends, on very short petioles, gla- brous; stipulas rather downy, having the bristles longer than the sheath; flowers axillary, sessile, crowded, semi-verticillate; fruit oval, rather downy, somewhat truncate at the apex.—Native of Porto-Rico, where it was collected by Bertero. Perhaps sufficiently distinct from S. tenor.

Porto-Rico Button-weed. Pl. 1 to 2 feet.

3 Š. loxífrólia (Aubl. guian. 1. p. 59. t. 21.) stems herba- ceous, glabrous, dichotomous, and are, as well as the branches, acutely tetragonal; leaves oval-oblong, tapering to both ends, on short petioles, scabrous above between the nerves and on the margins, and pilose on the nerves beneath; stipulas downy, bearing each 5-7 bristles, and short hairs between these bristles; whorles axillary, few-flowered; fruit ovate, downy, crowned by the 4 short teeth of the calyx. Š. Native of French Guiana. S. fruticósa, Poir. Flowers white. Stems reddish.

Long-leaved Button-weed. Shrub.

4 Š. cerúlea (Pohl. in litt. ex D. C. prod. 4. p. 552.) stems herbaceous, almost tetragonal, downy; leaves elliptic-oblong, acute, petiolar, glabrous, downy on the nerves beneath; stipulas downy, bearing 5-7 bristles, which are a little longer than the sheath; flowers axillary, sessile, crowded, semi-verticillate; fruit oval, truncate at the apex.—Native of Brazil, where it was collected by Pohl. Flowers blue. Very nearly allied to S. tenor, but is very distinct.

Blue-flowered Button-weed. Pl. 1 to 2 feet.

5 Š. rípaíra (Cham. et Schlecht. in Linn. 3. p. 355.) quite glabrous; stems loose, fistular, tetragonal, suffrutescence at the base; leaves lanceolate, acute, with scabrous margins; bristles of stipulas, longer than the sheath; flowers terminal in the upper axils, disposed in whorled heads; stamens almost inclosed; capsule ovate, glabrous; teeth of calyx 6-7, acute, at length obliterated. Š. Native of Brazil, on the banks of the Rio Negro.

River-side Button-weed. Pl. 1 foot.

6 Š. herbeára (D. C. prod. 4. p. 553.) stems herbaceous, tetragonal, nearly naked, downy; the rest of the plant smooth- ish: leaves ovate, acute, tapering to the base, glabrous above, but downy on the nerves beneath while young; bristles of sti- pulsas many, rather shorter than the sheath, which is downy: heads of flowers verticillate, 1-2 axillary, and one terminal; the latter girded by 4 very unequal leaves: fruit downy, truncate at the apex.—Native of South America, about Caracas, where it was collected by Vargues. Both the nuts of the fruit being dehiscent, it is therefore rather an ambiguous species.

Var. β, angústior (D. C. prod. 4. p. 553.) leaves lanceolate, and are, as well as the stems, glabrous.—Native of St. Domingo, where it was collected by Bertero.

Downy-fruited Button-weed. Pl. 1 foot.

7 Š. diffussá (H. B. et Kunth, nov. gen. amer. 3. p. 343.) stems suffruticoso, procumbent, terete, hairy; leaves lanceolate, scabrous from retrograde hairs on both surfaces, with the margins serrately scabrous; stipulas hairy, ciliated with bristles; whorles of flowers axillary, sessile, and one larger terminal; the latter girded by 4 leaves: capsule smoothish, globose, crowded by the 4 teeth of the calyx, 2 of which are linear-subulate, and longer than the other 2. Š. Native of South America, in the province of Varino, at the river Atures. Flowers white. Said to be allied to S. tenor, and therefore it is probably a true species of Spermacoce.

Diffuse Button-weed. Shrub procumbent.

8 Š. sfrutíceá (Jacq. schoenbr. t. 322.) stems suffrut- tescent at the base, rather diff- use, branched, tetragonal, gla- bros; leaves ovate-lanceolate, acuminate, lined, with scab- rosus margins; stipulas fur- nished with bristles; whorles of flowers dense, sessile, axillary, and terminal; the latter girded by 4 leaves: lobes of corolla villous at the apex; genitals exserted; stigma capitulate; fruit turbinate, hispid, crowned by the 4-cleft calyx. Š. Na- tive country unknown. S. suf- frutícosá, Spreng. syst. 1.


**9 S. linearis** (H. B. et Kuntz, nov. gen. amer. 3. p. 343.) stem suffruticose, obsolete tetragonal, clothed with hairy down; leaves linear, scalabrous above and on the margins, hairy beneath; stipulas hairy, ciliated with bristles; whorls many-flowered, sessile, axillary; corollas glabrous; stigma rather capitate, exserted; capsule oblong, hispid at top; teeth of calyx 4, ovate-lanceolate. 


10 S. *palmatum* (D. C. prod. 4. p. 553.) plant herbaceous, ascending, branched; stem tetragonal, hairy; branchlets compressed; leaves oval-lanceolate, scalabrous above and lined, hairy beneath and nerved; stipulas villous, with the bristles shorter than the sheath; flowers 5-6 together on both sides, sessile, axillary, verticillate; fruit rather hairy, obovate; teeth of calyx 4, short, subulate, at length deciduous.—Native everywhere about the Gambia, at the roots of palm-trees, in humid places, where it was collected by Leprieur and Perrottet. Allied to *S. tenax.* Perhaps Diódia scabra, Schum. pl. guin. p. 76. ?

*Palm-tree* Button-weed. Pl. 1 foot.

11 S. ? *pilo*a (D. C. prod. 4. p. 553.) stem herbaceous, tetragonal, with blunt, pilose angles; leaves ovate, acute, scabrous on both surfaces; bristles of stipulas distant, longer than the sheath; whorls sessile, many-flowered; fruit ovate, crowned by the 4 reflexed, acute lobes of the calyx.—Native of Guinea. Diódia pilosa, Schum. pl. guin. p. 76.

*Plisole* Button-weed. Pl. 1 foot.

12 S. *phyllodéphala* (D. C. l. c.) plant erect, glabrous, sparingly branched; stems tetragonal; leaves linear, 1-nerved; floral ones dilated at the base; bristles of stipulas 5-5 on each side, longer than the sheath; heads of flowers axillary, verticillate, very few, and a large terminal one, the latter surrounded by long, squarrose leaves; fruit solitary in the axils of the floral leaves, crowded from the floral leaves being clustered; seeds large, shining. **Native** of the west coast of Africa, at Kouma and Walo, where it was collected by Perrottet and Leprieur. Seeds 2 lines long, almost like those of *Psyllium.*

*Leaf-headed* Button-weed. Pl. 1 foot.

13 S. *stachydeíne* (D. C. prod. 4. p. 554.) plant erect, nearly simple, villous; stem tetragonal; branchlets compressed; leaves linear, acute, floral ones dilated at the base; bristles of stipulas 5-7, longer than the sheath, which is velvety; heads of flowers verticillate, numerous, surrounded by 6-8 aggregate, squarrose leaves; flowers solitary in the axils of the leaves, and aggregate only from the leaves being crowded; lobes of calyx linear-subulate, nearly the length of the fruit; seeds large, shining. **Native** of the west coast of Africa, among stones, at Bakel, where it was collected by Leprieur. Plant about a foot high. Leaves 3 inches long, and nearly 4 lines broad. Bristles of stipulas blackish. Seed 2 or 2½ lines long, larger than any other of the genus.

*Stachys*-like Button-weed. Pl. 1 foot.

14 S. *galeópsidis* (D. C. prod. 4. p. 554.) erect, branched; stem tetragonal, hairy; leaves lanceolate-linear, rather scabrous on both surfaces; bristles of stipulas longer than the sheath, which is velvety; flowers axillary, few, sub-verticillate; fruit large, velvety, longer than the subulate, calyceine lobes. **Native** of Senegambia, at Dagana, in sandy places. Allied to *S. Ruélliae*, but very distinct. Herb about a foot high. Leaves 15-16 lines long, and 3 broad, pale beneath. Stipulas yellowish. Fruit larger than in any other species of the genus, almost like that of a species of *Diodia*, but is membranous and deliscent. Seeds large.

*Galeopis-like* Button-weed. Pl. 1 foot.

15 S. *Ruélle* (D. C. l. c.) erect, branched; stem tetragonal, hispid; leaves lanceolate-linear, acuminate, clothed with rough down on both surfaces; heads many, verticillate, axillary; bristles of stipulas many, 3 times longer than the sheath, which is downy; valves of fruit at length opening widely at the apex; lobes of calyx subulate, rather longer than the fruit. **Native** of Equinoctial Africa, in sandy places at Bakel, where it was collected by Leprieur. Stem a foot high. Leaves 3 inches long, and 5-6 lines broad. Mature fruit nearly as in the genus *Ruélle.* Seed a line long and a half long.

*Ruélle*-like Button-weed. Pl. 1 foot.

16 S. *clérocephala* (D. C. l. c.) stem erect, simple, terete at the base and glabrous, and tetragonal at the apex, with the angles scabrous; leaves linear-longated, acuminate, glabrous; bristles of stipulas 5-7, subulate, longer than the sheath, which is villous; heads verticillate, surrounded by many leaves, and the many bristles of the stipulas; fruit pale, membranous, downy at the apex; lobes of calyx subulate, shorter than the fruit. **Native** of Equinoctial Africa, in Gala, among rough stones at Bakel, where it was collected by Leprieur. Plant 1½ foot high. Leaves 3 inches long, and 5-6 lines broad. Bristles of stipulas rufous. Capsules whitish. Seeds a line long.

*Bristly-headed* Button-weed. Pl. 1½ foot.

**Species natives of the Mauritius and Madagascar.**

17 S. *flagelliformis* (Poir. dict. 7. p. 314.) stem herbaceous, terete, glabrous, simple, erectish; leaves glabrous, oblong-lanceolate, acute, revolute on the margins at the base, and therefore petiole-formed; stipulas broad-cupshaped, having the bristles rather shorter than the sheath; flowers axillary, few, sessile, verticillate; capsule ovate, puberulous, crowned by the 4 slender acute teeth of the calyx. **Native** of the Mauritius and Bourbon. S. flagellaris, Willd. in Röem. et Schultes, syst. 3. p. 532. ex Cham. et Schlecht. in Linn. 1804. p. 357. Hedyotis verticillata, Lám. ill. no. 1423. exclusive of the synonyms of *Desf.*


18 S. *murcula* (D. C. prod. 4. p. 554.) glabrous; stem herbaceous, tetragonal, having the angles just under the nodi, from small tubercles; leaves elliptic-lanceolate, acuminate at both ends, scabrous above; bristles of stipulas longer than the sheath, which is very short; flowers disposed in sessile, glomerate whorles in the axils of the leaves; fruit ovate, downy, crowned by the 2-4 very short, acute, calyceine teeth, but is at length nearly naked.—**Native** of the Mauritius and Bourbon. Allied to *S. tenax*; but the angles of the stem are not downy, but scabrous from tubercles.

*Muriculata*-stemmed Button-weed. Pl. 1 to 1½ foot.

19 S. *serrifilifolia* (Willd. in Röem. et Schultes, syst. 3. p. 532.) plant diffuse, scabrous; leaves elliptic, with revolute margins; whorls few-flowered.—**Native** of Madagascar. A true species of *Spermacoce* ex Cham. et Schlecht. in Linn. 3. p. 357. but the rest is unknown.


**Species natives of India.**

20 S. *stríca* (Lin. fil. suppl. p. 120.) stem herbaceous, straight, erect, scabrous at the angles; leaves linear-lanceolate, lined, scabrous; stipulas ciliate fringed; whorles of flowers axillary, remote, globose; fruit obovate-globose, rather membranous at the base, and hispid at the apex, crowned by the 4

*Var. β, latifolia* (D. C. prod. 4. p. 555.) leaves ovate-lanceolate, rather scabrous above.—Native of Java, about Tugu. Bigelovia stricta, Blum. bijdr. p. 945.


21 S. Burmanni (D. C. prod. 4. p. 555.) stem tetragonal, branched, slender, rather pilose on the leaves; leaves oblong-linear, acuminated at both ends, scabrous above, and on the margins; bristles of stipulas glabrous, about the length of the sheath, which is villous; flowers axillary, sessile, few, somewhat verticillate, almost inclosed in the stipular sheaths; fruit ovate, rather hairy, crowned by the 4 acute teeth of the calyx.—Native of the East Indies. S. corymbosa, Burm. fl. ind. p. 34. but not of Lin. Allied to *S. flagelliformis*. Flowers white.

Burmann's Button-weed. Pl.

22 S. scabra (Blum. bijdr. p. 946.) stem herbaceous, branched, climbing; branches quadrangular, having the angles beset with retrograde down; leaves oval-lanceolate, rough above, and on the veins beneath; stipulas pubescent, furnished with bristles, which are a little longer than the sheath; stamens exerted; fruit glabrous, crowned by the 4 lobes of the calyx.—Native of Java, in humble places about Buitenzorg. Habit of *S. tetrandrum.*


23 S. hispida (Lin. mant. p. 558.) plant herbaceous, erect, hoary; stem tetragonal, hispid; leaves obvate, a little mucronate, hispid on both surfaces, and on the margins; bristles of stipulas longer or longer than the sheath; flowers 1-3-together, axillary, sessile, opposite or somewhat verticillate; stamens length of corolla; capsule ellipsoid, hairy, crowned by the 4 teeth of the calyx. — O. F. Native of the East Indies.—Murr. comm. goett. 3. p. 77. t. 5. Cham. et Schlecht. in Linnaea. 3. p. 355. S. rigid, Salisb. prod. p. 60.—Burm. zeyl. t. 20. f. 3. Corollas turbinate, violaceous. Stamens purplish.


24 S. scabra (Wildl. spec. 1. p. 572.) stem herbaceous, diffuse, terete, or slightly tetragonal, scabrous from pili; leaves obvate, obtuse or acute, undulated, scabrous on both surfaces, and on the margins; bristles of stipulas rather longer than the sheath, which is downy; flowers few, axillary, verticillate; stamens exerted; capsule ovate, rather hairy, crowned by the 4 lanceolate teeth of the calyx. — O. F. Native of Coromandel, ex Roxb.; of Malabar, ex Rheed. mal. 9. t. 76.; and of the Island of Timor. Roxb. fl. ind. 1. p. 377. S. hirta, Rottl. in nov. act. nat. cur. berl. 1803. p. 95. Flowers small, purple.


25 S. articulata (Lin. fl. suppl. p. 119. exclusive of the synonyms,) plant herbaceous, diffuse; stems tetragonal, pilose above at the angles; leaves elliptic-lanceolate, hardly acute, clothed with rough pubescence on both surfaces, and on the margins; bristles of stipulas longer than the sheath, which is downy; flowers 2-4, axillary, sessile; capsule oval, downy, crowned by the 4 teeth of the calyx. — O. F. Native in sandy places on the shores of Coromandel. Roxb. fl. ind. 1. p. 378. Allied to *S. hispida.* Stem reddish. Flowers white. Branches procumbent.


26 S. Brunnonis (Wall. cat. no. 882.) stems herbaceous, erect, tetragonal, glabrous; leaves lanceolate, acute, sessile, glabrous, with serrated scabrous edges; stipulas bifid and trifid, or multifid; heads of flowers terminal, rarely axillary: the former inclosed by 2 long leaves, and sometimes also 2 small ones. — S. Native of Kamaon. Flowers white. Perhaps a species of *Borriéria*.

*Brown's Button-weed.* Pl. 1 to 2 feet.

27 S. longiarcuflis (R. Br. in Wall. cat. no. 826.) plant scabrous; stem elongated, tetragonal, with scabrous angles; leaves oblong and obvate-oblong, opposite, and falsely verticillate, scabrous; bristles of stipulas longer than the sheath; flowers axillary, few, verticillate. — S. Native of the Burmese Empire, at Prome; and of Singapore.

Long-stemmed Button-weed. Pl. 2 to 3 feet, diffuse.

28 S. Avana (R. Br. in Wall. cat. no. 828.) stems tetragonal, scabrous on the angles; leaves elliptic or obvate-elliptic, acute, attenuated at the base, rather scabrous, serrulate on the margins; bristles of stipulas longer than the sheath; flowers axillary, sessile, somewhat verticillate. — S. Native of the Burmese Empire, at Ava. Very nearly allied to the preceding.

*Ava* Button-weed. Pl. 1 to 2 feet.

29 S. tenesma (R. Br. in Wall. cat. no. 833.) plant glabrous, diffuse; leaves lanceolate, tapering to both ends, petiolate, smooth; flowers axillary, verticillate; bristles of stipulas longer than the sheath. — O. F. Native of the East Indies. *S. cymooides,* Heyne, but not of Burm.


30 S. compressa (Wall. cat. no. 6187.) plant diffuse, densely clothed in every part with woolly scabrous hairs; leaves ovate or oblong, acute; stipulas bristly; heads of flowers axillary and terminal, verticillate; fruit compressed, crowned by the teeth of the calyx. — S. Native of Silhet, in the East Indies.


†Species not sufficiently known.

* Species natives of Asia.

31 S. flexuosa (Lour. coch. p. 79.) stem shrubby, flexuous, nearly terete, procumbent; leaves ovate-lanceolate, obliquely-nerved, thick; stipulas bristly; whorles of flowers globose; capsule of 2 2-horned nuts. — G. Native of Cochinchina, in hedges and among bushes. Corollas white, with revolute segments.

Flexuosa Button-weed. Shrub procumbent.

32 S. Hedyotisacea (D. C. prod. 4. p. 555.) stem tetragonal, glabrous; leaves lanceolate; stipulas rhomboid; thyrse brachit; bracteas subulate; corolla tomentose inside; anthers linear; stigma capitulate; capsule ovate, crowned by the 4-toothed calyx; cells 1-seeded. — S. Native of the East Indies. Hedyotis fruticosa, Retz. obs. 2. p. 8. and probably also of Lin. If the cells of the fruit are truly 1-seeded, it is a true *Spermacoce*. All the synonyms cited by authors for this plant are very doubtful.

Hedyotis-like Button-weed. Pl.

33 S. procumbens (Lin. syst. veg. p. 124.) stems herbaceous, procumbent, angular; leaves linear; corymb lateral, opposite, pedunculate, surrounded by many-leaved involucra; stamens exerted.—Native of the East Indies. S. corymbosa, Lin. spec. p. 149. but not of others. Stamens longer than the corolla.

Procumbent Button-weed. Pl. procumbent.

34 S. ? semieíreta (Roxb. fl. ind. 1. p. 377.) stems tetragonal, ascending, bent in various ways, with rather hispid angles; branches brachiate, alternately smaller; leaves ovate, acuminate, on short petioles, scabrous; stipulas of many bristles; whorles of flowers small, compact; genitils inclosed; capsule turbinate, pilose.—Flowers small, white. Native of Sumatra. S. Roxburghiana, Wall. cat. no. 6186. Fruit not sufficiently known.


35 S. ? costata (Roxb. fl. ind. 1. p. 376.) plant diffuse, very villous; leaves broad-lanceolate or oblong, nervet; stipulas
usuually furnished with 3 bristles; flowers axillary, disposed in small prolifeating, crowded umbels; stamens protruding beyond the corolline tube. S. Native of the Moluccas. Perhaps the same as S. cristata, Wild. in R¢m. et Schultes, syst. 3, p. 530.2. Flowers pale, pink.

**Ribbed-leaved Button-weed.** Pl. diffuse.

36 S. ? *Rubiacea* (Roxb. fl. ind. 1, p. 375.) stem erect, simple, nearly terete, smooth; leaves petiolate, lanceolate, smooth; flowers axillary or terminal, sessile, crowded.—Native of the Island of Hominoa. Plant hardly a foot high.

**Dwarf Button-weed.** Pl. ½ foot.

37 S. ? *LINEA* (Roxb. fl. ind. 1, p. 375. but not of Blume) plant erect, branched, pilose; leaves on short petiolo, lanceolate-linear, acuminate, lined; stipulas triangular, furnished with bristles; peduncles axillary, trichotomous; flowers capit; stamens exerted.—Native of the Moluccas. The rest unknown.

**Lined-leaved Button-weed.** Pl. 1 foot.

38 S. ? *PHILIPPEN* (Spreng. syst. 1, p. 401.) stem erect, and as well as the leaves rough; stipulas toothed; stamens exerted; fruit glabrous.—Native of the Philippines.

**Smoot Hall.** Pl. May, July. Clt. 1820. Pl. 1 foot.

40 S. ? *STELLATA* (R¢m. et Schultes, syst. 3, p. 530.) flowers terminal, capitate; leaves linear, verticillate.—Native of St. Domingo, where it was collected by Martin. Sloane, hist. 1, p. 94. f. 2. Said to be nearly allied to S. teniour. Flowers numerous.


41 S. ? *ROTA* (Poit. in R¢m. et Schultes, syst. 3, p. 275.) glabrous; stems diffuse, ascending, quadrangular; leaves ovate, mucronate; bristles of stipulas few, naked, short; flowers in capitulate whorls; teeth of calyx villous.—Native of St. Domingo, where it was collected by Martin. Poit. dict. 7, p. 312. Whorles of flowers the size of a pea.

**Rota Hall.** Pl. diffuse.

42 S. ? *REMOTA* (Lam. ill. no. 1435.) stems straight, rather tetragonal, and downy; leaves linear-lanceolate, very rough, canescent beneath, shorter than the internodes; whorles of flowers dense, distant; capsules obtuse, villous.—Native of St. Domingo, where it was collected by Martin. Poit. dict. 7, p. 312. Leaves more than an inch long.

**Remote-whorled Button-weed.** Pl. 1 foot.

43 S. ? *OCYMIOPIA* (Wildl. in R¢m. et Schultes, syst. 3, p. 530.) branchlets and under sides of leaves downy; bristles of flowers longer than the whorls of flowers; stamens inclosed.—Native of the West Indies. S. decidua, Bosc. The rest unknown.

**Brazil-leaved Button-weed.** Pl. 1 foot.

44 S. ? *OBSCURA* (D. C. prod. 4, p. 556.) glabrous; stem herboeuse, tetragonal; leaves ovate-oblong, attenuated at both ends, lined; stipulas connate, ciliated with bristles; flowers of flowers globose; corollae villous inside; stamens exerted.—Native of Cuba and Hispaniola. S. capitellata, Spreng. neu. entd. 3, p. 46. exclusive of the synonyms. Fruit unknown.

**Obcord Button-weed.** Pl. 1 foot.

* * * *Species natives of Brazil.

45 S. ? *STRIGOSA* (Thunb. et Otto, pl. bras. no. 23. ex flora, 1821. p. 602. but not of Sims.) stem branched, pilose; leaves ovate, hairy; flowers verticillate.—Native of Brazil.

**Strigose Button-weed.** Pl. 1 foot.

46 S. ? *ELLIPTRICIA* (Thunb. et Otto, pl. bras. no. 22. ex flora, 1821. p. 602.) stem simple, glabrous; leaves elliptic, glabrous; flowers axillary.—Native of Brazil.

**Elliptic-leaved Button-weed.** Pl. 1 foot.

47 S. ? *CEPHALOTES* (Wildl. in R¢m. et Schultes, syst. 3, p. 531.) stem herbaceous, scabrous, branched; leaves lanceolate, acuminate, tapering to the base, veiny; heads of flowers terminal, involucre, hairy; stamens exerted.—Native of Brazil. Leaves quite glabrous, ex Spreng. neu. entd. 2, p. 144. but rough, ex Spreng. syst. 1, p. 402. Fruit unknown.

**Headed Button-weed.** Pl. 1 foot.

48 S. *ASSURGENS* (Ruiz et Pav. fl. per. 1, p. 60, t. 92.) stem ascending, branched, tetragonal, having the angles rough; leaves lanceolate, lined, with rough margins; stipulas with ciliate, ciliated; whorls of flowers axillary, small, sessile and terminal; the latter about equal in size to the axillary ones, and girded by a 2-leaved involucrum. S. Native of Peru, about Lima and Huanaco, in waste places, ex Ruiz et Pav.; and of Brazil, on the road to Felisbert, ex Nees et Mart. nov. act. brn. 12, p. 11. Stem purplish. Leaves ovate, lanceolate. Calyx purplish. Corollas white or reddish. Said to be allied to S. Portoricensis.

**Compare Fuculi, per. 3, p. 23, t. 40.**

**Assurgent Button-weed.** Pl. 1 to ½ foot.

* * * *Species natives of Peru, Bogota, and Chili.

49 S. ? *INCONSCAMIA* (Bartl. in herb. Heinke, ex D. C. prod. 4, p. 557.) plant suffrutescent; branches ascending, somewhat hexagonal, glabrous at bottom, but clothed with powdery down at top; leaves linear-oblong, acuminate at both ends, glabrous, with scabrous edges; bristles of stipulas longer than the sheath; heads of flowers terminal, girded by 4-leaved involucrum; teeth of calyx 4, nearly equal, acuminate. S. Native of Peru, on the mountains. Branches truly tetragonal, but 2 of the sides are very narrow, and the other 2 are broader, convex, and almost keeled in the center of the convex part; therefore they are said to be somewhat hexagonal. The habit is that of Borreria, but the fruit is unknown.

**Inconspicuous Button-weed.** Shrub ascending.

50 S. ? *GRACILIS* (Ruiz et Pav. fl. per. 1, p. 61, t. 92, f. a.) plant herbaceous, glabrous; stem erect, tetraogal, slender branched; leaves lanceolate, acuminate, with scabrous margins; stipulas with ciliated, ciliated; whorls of flowers axillary and terminal, small, sessile; fruit hispid. S. Native of Chili, in humid places and about springs. Oldenlandia unifólia, Ruiz et Pav. fl. per. 1, p. 57. but not of Lim. Perhaps a true species of Spermáceae from the cells of fruit being 1-seeded.

**Slender-branched Button-wood.** Pl. ½ foot.

51 S. ? *OLDENLANDIA* (D. C. prod. 4, p. 557.) plant glabrous; stem herbaceous, much branched, creeping, filiform; branches opposite; leaves ovate, on very short petiolo, shining; peduncles 1-flowered, solitary, fruit hispid.—Native of Chili, in humid places and about springs. Oldenlandia unifólia, Ruiz et Pav. fl. per. 1, p. 57. but not of Lim. Perhaps a true species of Spermáceae from the cells of fruit being 1-seeded.

**Oldenlandia-like Button-wood.** Pl. creeping.

52 S. ? *MACRÓPHYLLA* (Wildl. in R¢m. et Schultes, syst. 3, p. 530. H. B. et Kunth, nov. gen. amer. 3, p. 349.) stem suffrutesce, procumbent, tetragonal, glabrous, with ciliately-arranged margins; stipulas downy, ciliated by bristles; heads of flowers lateral and axillary, pedunculate; limb of calyx tetragonally-
urceolate, sinuately-quadrifid. t. S. Native near Santa Fe de Bogota. Corolla, genitals, and fruit unknown.

Trailing Button-weed. Shrub procumbent. 53 S. ? ericióclada (D. C. prod. 4. p. 557.) plant suffruticeous, ascending; branches rather angular, clothed with hairy tomentum; leaves oblong, acuminate, very scabrous on both surfaces, almost veinless, with serrately scabrous edges, and sometimes mucronate at the apex; bristles of stipular glabrous, length of sheath, which is villous; heads of flowers terminal, girded by 4 leaves; teeth of calyx 4, equal; stamens exerted. t. S. Native of Peru. S. scabéríma, Bartl. in herb. Hsken, but not of Blume. Fruit unknown, and therefore the genus is doubtful.

The habit is that of Borréria.

Var. β. lineafólia (D. C. prod. 4. p. 557.) leaves linear, distinctly mucronate. t. S. Native of Peru.


***** Species natives of Guiana.

54 S. ? sexangula’ris (Aubl. guian. 1. p. 61. t. 22. f. 8.) plant glabrous, prostrate; stem flexuous, prostrate, hexagonal; leaves ovate, acute, petiolate; heads of flowers terminal; anthers in the throat.—Native of Guiana, on the banks of rivers. A hexágona, Willd. spec. 1. p. 569. Flowers small, blue. Perhaps a species of Borréria nearly allied to B. alátia.


Prostrate Button-weed. Pl. prostrate. 56 S. ? ran’táns (Aubl. guian. 1. p. 58. t. 20. f. 4.) glabrous; stem herbaceous, alternately branched, prostrate, radiant; leaves almost sessile, lanceolate, acute; flowers verticillate. t. S. Native of Guiana, on the banks of the river Oropu. The rest unknown.


57 S. ? coréle’xens (Aubl. guian. 1. p. 57. t. 19. f. 2.) stem simple, straight, tetragonal; leaves ovate, acute, rather hairy, smooth; bristles of stipular about equal in length to the flowers; flowers verticillate; stamens exerted.—Native of Guiana and Cayenne, on the edges of fields. Vahl. edcog. 1. p. 9. Corollas blue. Fruit unknown.

Bluish-flowered Button-weed. Pl. 1 to 2 feet. 58 S. ? latifólia (Aubl. guian. 1. p. 56. t. 19. f. 1.) glabrous; stem, erect, herbaceous, tetragonal; leaves ovate, acuminate, petiolate, short; bristles of stipular hispid, a little longer than the sheath; flowers axillary, verticillate; limb of calyx 4-toothed, rather villous, as well as the capsules, which are ovate.—Native of Guiana and Cayenne by way sides. Lam. ill. t. 62. f. 2. Probably a species of Borréria or Mitracárum. Flowers white.


***** Species natives of Mexico.

59 S. ? solo’cphala (Bartl. in herb. Henke, ex D. C. prod. 4. p. 558.) stem herbaceous, erect, branched, quadrangular, villous; leaves ovate-lanceolate, acuminate, pilose on both surfaces, veins with veins beneath; bristles of stipular longer than the sheath, hairy; heads of flowers terminal, nearly globose, girded by 4-leaved involucra; teeth of calyx subulate, nearly equal; stamens exerted.—Native of Mexico. Perhaps a species of Borréria.

Many-headed Button-weed. Pl. 2 to 3 feet. 60 S. ? echo’ides (H. B. et Kunth, nov. gen. amer. 3. p. 344.) stem herbaceous, tetragonal, erect, hispid; leaves lanceolate, acuminate, petiolate, hispid on both surfaces; stipular hispid, cilated by bristles; whorles of flowers nearly globose, axillary and terminal. t. S. Native of Mexico, near Campeche. There is a variety of this with glabrous stems, and narrower less hispid leaves.

Bugsés-like Button-weed. Pl. 61 S. ? diversifólia (H. B. et Kunth, nov. gen. amer. 3. p. 341.) plant glabrous, erect, with tetragonal branches, which are scabrous from retrograde bristles; leaves linear, with remotely scabrous serrated margins: the lower ones minute and oblong-elliptic; stipulas smoothish, fringed by bristles; heads of flowers terminal, calyx 2-4-toothed; capsules hispid. t. F. Native of Mexico. Knöxia simplex, Willd. in Ræm. et Schultes, syst. 3. p. 553. Perhaps a species of Borréria. Flowers white.

Diverse-leaved Button-weed. Pl. 62 S. ? reclína’ta (Nees, hor. berl. p. 50.) plant glabrous, ascending, herbaceous; leaves lanceolate, acute, smooth, veinless; stipulas downy, furnished with 5 bristles each; heads terminal, dense, hemispherical, supported by 2 leaves; calyx and fruit glabrous. t. S. Native of Mexico. Fruit unknown.

Reclinate Button-weed. Pl. ascending.

***** Species natives of North America.

63 S. ? las’a’ntha (Rafin. fl. lud. p. 76.) stem weak; branches diffuse; leaves sessile, oblong, acute, nerved; nerves scabrous; flowers verticillate; corolla woolly inside.—Native of Louisiana.

Woolly-flowered Button-weed. Pl. diffuse.


65 S. ? involúcrá’ta (Pursh, fl. amer. sept. 1. p. 105.) plant very hispid, herbaceous, erect; stem alternately branched; leaves ovate-lanceolate, acuminate, hairy on both surfaces; stipulas of many bristles; heads terminal, involucrated; tube of corolla very long; stamens exerted.—Native of Carolina. Flowers white. Leaves rather broad. According to Sprengel this is a variety of Crésea ribra. Fruit unknown.

Involutcrated-flowered Button-weed. Pl. 1 foot.

Cult. See Borréria, p. 618. for culture and propagation.

CLXXXVII. HEXASEPALUM. (from ié, hex, six, and σπαρτος, sepaton, an alteration of περαλος, a sepals; in reference to the limb of the calyx being 6-parted, indicating its being composed of six sepals). Bartl. in herb. Henke, ex D. C. prod. 4. p. 561. Lin. syst. Tétrándria, Monogy’nya. Calyx with an oblong obpyramidal tube, and a 6-parted limb; lobes narrow, nearly equal, acute, permanent. Corolla campanulate funnel-shaped, with an obconical tube, and 4 lanceolate acute lobes, which are valvate in aestivation. Stamens 4, shorter than the lobes of the corolla. Fruit oblong, dry, ribbed, divisible into 2 parts at the dissepiments: the dissepiment being double, both the parts of the fruit or nuts are closed, and 1-seeded.—A small ascending much branched glabrous shrub, with diffuse flexuous compressed branches. Leaves opposite, long-linear, acute, with the margins hardly scabrous. Stipulas sheathing, furnished with many bristles, which are equal in length to the sheath, intermixed with very short cilia. Flowers axillary, solitary, sessile, larger than in any other genus belonging to the tribe Spermáccceae.

1 H. angústífrólium (Bartl. l. c.) t. S. Native of Mexico,
in Real del Monte, where it was collected by Häneke. Leaves 1½ to 2 inches long, and a line broad. Corolla 6 lines long. Ovarium 3 lines long.

**Narrow-leaved Hexasepalum.** Shrub 2 to 3 feet.

Cult. See **Borreria**, p. 618. for culture and propagation.

**CLXXXVIII. DIOÉDIA** (from dǐos, dídōs, a passage; the greater part of the species grow by water sides, hence the name). **Lin. gen. no. 122.** Gartn. fruct. 1. p. 121. t. 25. Meyer, ess. p. 81. Cham. et Schlecht. in Linnæa. 3. p. 341. D. C. prod. 4. p. 561.—Diodia and Spermacoece species of authors.

**Linn. syst. Tetrandria, Monogynia.** Calyx with an obovate or ovate tube, which is usually 8-nerved; limb dentately parted; teeth sometimes 2, sometimes 4, equal or unequal, crassely disposed, rarely more than 4. Corolla funnel-shaped, with a 4-lobed limb. Stamens 4, exerted or inclosed. Style bifid or undivided. Fruit 2-celled, crowned by the calyx, divisible into 2 1-seeded indischant parts or nuts. Seeds erect in the cells, furrowed in the front.—Herbs or shrubs, all natives of America except one species. Branches terete or tetragonal. Leaves opposite, or falsely verticillate from axillary fascicles. Flowers small, white, disposed in various ways in the different sections.

**Sect. I. Eudiodia** (from eu, well, and Diodia; this section is considered to contain the true species of the genus). **D. C. prod. 4. p. 561.** Capsules crustaceous or somewhat fleshy; having the mericarps or nuts separate, without any dissepiment between them.—Flowers axillary, sessile, opposite; or 2 or more on each side verticillate.


1 **D. virginica** (Lin. spec. 151.) glabrous in every part; stems procumbent, nearly terete; leaves lanceolate; lobes of stipulas linear-subulate; corolla less hairy inside; fruit ovate-oblong, glabrous, crowned by the 2 lanceolate lobes of the calyx. *F.* Native from Virginia to Carolina, in humid sandy places. Jacq. icon. rar. 1. t. 29. Lam. ill. t. 63. Pursh, fl. sept. amer. 1. p. 105. Stems reddish, smooth. Flowers white.


**Hairly Diodia.** Fl. procumbent. 4 **D. simplex** (Swartz, fl. ind. occ. 1. p. 226.) stems herbageous, erectish, smooth, simple; leaves oblong-lanceolate, glabrous; lobes of stipulas linear-subulate; fruit ovate-oblong; limb of calyx bidentate: teeth linear. *F.* Native of Jamaica, on the higher mountains. Leaves ciliated on the margins while young. Flowers sessile, solitary, axillary, white.

**Simple-stemmed Diodia.** Fl. 1 to 1½ foot. 5 **D. verticillata** (Vahl. symb. 2. p. 28.) glabrous; stem herbageous, simple, erect, smooth; leaves lanceolate, attenuated at both ends, with scabrous margins; stipulas ciliated; flowers verticillate; fruit linear, crowned by the 2 calyceal teeth.—

Native of the Island of Santa Cruz. The leaves are said to be in whorles within the stipulas, hence they are probably in axillary fascicles. Flowers white, in axillary and terminal whorls: the latter the largest. It is probably a species of **Borreria** from the terminal whorl of flowers being larger than the axillary ones.


6 **D. villosa** (Moc. et Sesse, fl. mex. icon. ined. ex D. C. prod. 4. p. 562.) stem herbaceous, deinate, tetragonal, villous; leaves lanceolate, acuminate, scabrous above and on the margins, hairy beneath, and obliquely nerved; bristles of stipulas scabrous, longer than the sheath; whorles axillary, sessile, 10-12-flowered; fruit ovate, easily separated into 2 parts, crowned by the 2 teeth of the calyx.—Native of New Spain. Spermacoece declinita, Pavon, ined. Habit of *Spermacoece tenuior*, but the fruit is composed of 2 indehiscent nuts, each crowned by one calyceal tooth.

**Villos Diodia.** Fl. procumbent.

**Vilous Diodia.** Fl. procumbent.

**Calyx 4-toothed.**

7 **D. teres** (Walt. cart. p. 87.) stem terete, velvety, procumbent; leaves linear-lanceolate, clothed with velvety down; lobes of stipulas setaceous, longer than the fruit; corolla bearded inside; fruit ovate, downy, crowned by the 4 lanceolate calycine lobes. *F.* S. Native of the banks of the Orinoco, near San Borja in hot places. Spermacoece hyssopifolia, H. B. et Kunth, nov. gen. amer. 3. p. 342. Wild, in Rœm. et Schultes, syst. 3. p. 533. Said to be allied to **D. teres**. Flowers white.

**Hyssop-leaved Diodia.** Shrub.

8 **D. hyssopus-dioidea** (Cham. et Schlecht. in Linnæa. 3. p. 342.) plant suffruticose, branched; branches nearly terete, hairy; leaves linear, acute, glabrous, glaucenscent; bristles of stipulas equal in length to the fruit; whorles usually 6-flowered; fruit ovate-turbinate, downy. *F.* Native on the banks of the Orinoco, near San Borja in hot places. Spermacoece hyssopifolia, H. B. et Kunth, nov. gen. amer. 3. p. 342. Wild, in Rœm. et Schultes, syst. 3. p. 533. Said to be allied to **D. teres**. Flowers white.

**Var. β, longitesta** (D. C. prod. 4. p. 562.) bristles of stipulas longer than the sheath; branches hispid. *F.* S. Native of Mexico. D. prostrata, Bartl. in herb. Häneke, ex D. C. l. c. **Prostrate Diodia.** Fl. June, July. Clt. 1818. Sh. prostrate. 9 **D. Domíngos-sis** (D. C. prod. 4. p. 563.) glabrous; branches and stems procumbent, tetragonal, filiform; leaves linear, with revolute margins; bristles of stipulas stiff.—Native of St. Domingo, where it was collected by Bertero. Diodia prostrata, ex Hispaniola, Spreng. syst. 1. p. 406. Flowers and fruit unknown, and therefore the genus to which it belongs is doubtful. Nearly allied to **D. prostrata**.

**St. Domingo Diodia.** Shrub procumbent.

10 **D. Domíngos-sis** (D. C. prod. 4. p. 563.) glabrous; branches and stems procumbent, tetragonal, filiform; leaves linear, with revolute margins; bristles of stipulas stiff.—Native of St. Domingo, where it was collected by Bertero. Diodia prostrata, ex Hispaniola, Spreng. syst. 1. p. 406. Flowers and fruit unknown, and therefore the genus to which it belongs is doubtful. Nearly allied to **D. prostrata**.

**Climbing Diodia.** Shrub el. 8 to 10 feet.
12 D. sarmentosa (Swartz, fl. ind. occ. 1. p. 231.) stem climbing, suffruticulose, tetragonal, villous, particularly on the angles; leaves oval-oblong, acute, seafurrows from muricia, rugosely nerved in the adult state; bristles of stipulas stiffish; fruit oval, rather tetragonal, crowned by the 4 lanceolate teeth of the calyx. ʃ. S. Native of Jamaica, Porto-Rico. Many-bristled Diodia.

19 D. martima (Schum. pl. guin. p. 75.) stems prostrate, tetragonal, with furrowed sides, and seafurrows angles; leaves oval or oblong, having the margins seafurrows from serratulations, rather downy or hairy on both surfaces; bristles of stipulas stiffish; fruit oval-oblong, crowned by the 4 lanceolate teeth of the calyx. ʃ. S. Native of Guinea, along the coast in the sand. Flowers white.

Var. β. commutata (D. C. prod. 4. p. 564.) leaves glabrous on both surfaces. ʃ. S. Native of Porto-Rico, in the sand by the sea side, where it was collected by Bertero and Wydler. Spermacoce commutata, Schultes, mant. 3. p. 208. There are varieties of this plant with either elongated or tufted branches, and having the axils of the leaves naked, or bearing fascicles of leaves or branches, and with the leaves flat, or nervously furrowed.


Sea-side Diodia. Pl. prostrate.

20 D. rigida (Cham. et Schlecht. in Linnaea. 3. p. 341.) stem suffruticulose, creeping, quadrangular, hairy; leaves lanceolate, piliferous at the apex, stiff, with serratulated margins, hairy beneath; stipulas hairy, ciliated at the apex; fruit obovate, glabrous, crowned by the 4 linear-subsatile teeth of the calyx. ʃ. S. Native of the Spanish Main, near Caraccas; of St. Domingo; Brazil, in the province of Para, and of the Society Islands. Spermacoce rigida, H. B. et Kuntz, nov. gen. am. 3. p. 342. Sperm. apiculata and Sperm. rigida, Willd. in Schultes, syst. 3. p. 531. Sperm. setosa, Willd. herb. but not of Schultes. Flowers white.

Stiff Diodia. Shrub creeping.

21 D. articulata (D. C. prod. 4. p. 564.) glabrous; stem shrubby, terete, nodose; leaves linear, acute at both ends, with rather revolute edges, also smooth on the margin and mid-rib; bristles of stipulas stiff, shorter than the sheath; whorles 6-8-flowered; fruit obovate-oblong, crowned by the 4 calyceal teeth. ʃ. S. Native of Brazil, where it was collected by Pohl. Spermacoce articulata, Pohl, in litt. Leaves in axillary fascicles, hence they appear in whorles, very like those of Hipparis.

Jointed-stemmed Diodia. Shrub.

22 D. rosmarinifolia (Pohl, in litt. ex D. C. prod. 4. p. 564.) stem herbaceous, erect, simple, terete, hairy; leaves linear, ending in a long hair each, with rather revolute edges, glabrous, but seafurrows from serratulations on the margins and nerve below; bristles of stipulas very long; fruit oval, crowned by the 4 calyceal teeth. O. F. Native of Brazil, where it was collected by Pohl. This is a very distinct species, having the ciliate of the stipulas half an inch long, about half the length of the leaves.

Rosemary-leaved Diodia. Pl. ʃ to ʃ feet?

23 D. arenosa (D. C. prod. 4. p. 564.) stem decumbent, branched, tetragonal, rather seafurrows above; leaves lanceolate-linear, sessile, acuminate, with revolute edges, rather seafurrows on both surfaces; bristles or cilia of stipulas longer than the sheath; whorles 8-10-flowered; fruit obovate-globose, seafurrows from down, crowned by the 4 calyceal teeth. ʃ. S. Native of Brazil. Spermacoce arenosa, Pohl, in litt. Nuts of fruit in-destitute. If Spermacoce ciliaris, Pav. in herb. Moric, be the same it is also a native of New Spain.

Sand Diodia. Pl. decumbent.

24 D. multiflora (D. C. prod. 4. p. 564.) stem and branches long and twiggy, compressely tetragonal, hairy; leaves lanceolate, sessile, acute, lined, beset with stiff villi on both sur-
faces; bristles of stipulas longer than the sheath, reflected under the heads of flowers; whorles 15-20-flowered, nearly in all the axis; fruit obovate, rather downy, crowned by the 4 calicyc
teeth. —Native of Brazil. Fruit easily separated into 2 parts; the parts or nuts closed.

Many-flowered Diodia. Pl. 25 D. muriculata (D. C. prod. 4. p. 564.) stem ascending; branches tetragonal, hairy; leaves sessile, ovate, cuspidate, re
flexed below the whorles of flowers, beset with strigae above, and vili on the nerves beneath; bristles of stipulas longer than the sheath; fruit nearly globose, downy, crowned by the 4 calicyc
teeth. ñ. S. Native of Brazil, about Bahia, in dry places. Allied to D. multiflora.

Muriculata Diodia. Pl. ascending.

26 D. discolor (D. C. l. c.) stem suffruticoso, downy, rather ascending, tetragonal; leaves lanceolate, acuminate at both ends, glabrous, rough, canescent beneath; bristles of stipulas 7-11, ciliated; fruit hairy, brittle, crowned by the 4-5 hispid teeth of the calyx. ñ. S. Native of Surinam. Spermacoea discolor, E. Meyer, nov. act. bonn. 12. p. 786. Flowers white. Allied to D. râdula, but distinct, ex Cham. et Schlecht. in Linnæa. 3. p. 342.

Discoloured-leaved Diodia. Shrub 1 to 1½ feet.

27 D. hispidula (A. Rich. in herb. mus. Par. ex D. C. prod. 4. p. 565.) stem erect, tetragonal, glabrous; leaves oblong-lanceolate, acute, glabrous; bristles of stipulas 7, stiff, straight, longer than the sheath; spikes many, interrupted, at the tops of the branches, with hardly any leaves; flowers 2-4 in a kind of whorl, sessile at the stipules; tube of calyx scabrous from bristles; lobes of calyx 4, 2 of them longer than the other 2; nuts or mericarps rather membranous, closed, one of which bears 3 of the calyceal lobes, and the other only one. —Native of Brazil.

Hispid Diodia. Pl. 1 to 2 feet?

28 D. radicans (Cham. et Schlecht. in Linnæa. 3. p. 350.) stem radicant, oppositely branched, tetragonal, glabrous; leaves lanceolate, acute, obliquely nerved, smoothish, pale beneath; fruit ovate, sessile, crowned by the 4 lanceolate lobes of the calyx. ñ. S. Native of St. Domingo, where it was collected by Poiteau. Spermacoe radicans, Willd. herb. but not of Aubl. Flowers large, axillary, solitary, white?

Rooting Diodia. Shrub creeping.

*** Calyx 5-10-toothed.

29 D. râdula (Cham. et Schlecht. in Linnæa. 3. p. 342.) stem herbaceous, weak, tetragonal, smoothish; leaves ovate-lanceolate, acute, lined, scabrous above, and downy on the nerves beneath; stipulas downy, ciliated; whorles 6-10-flowered; calyx unequally 5-10-toothed, ciliated; fruit didymous. ñ. S. Native of Brazil, in the provinces of Para and Rio Janeiro. Spermacoe râdula, Willd. in Röm. et Schultes, syst. 3. p. 531. This probably belongs to a different genus from the calyx.

Râsp-leaved Diodia. Pl. 3 feet.

Sect. II. Dasycephala (from òasè, dasys, thick, and kephale, kephale, a head; the flowers are disposed in dense thick heads). D. C. prod. 4. p. 565. Capsules membranous, having the mericarps or nuts probably subdehiscent inside at length. Flowers disposed in heads. —This is probably a section of the genus Borrêria, or a proper genus.

30 D. falustris (Cham. et Schlecht. in Linnæa. 3. p. 347.) stem herbaceous, glabrous, erect, simple, tetragonal, with winged scabrous angles; leaves elliptic, rather cuneate, obtuse, but apiculate; bristles of stipulas 7-9, long; heads of flowers axillary, rather pedunculate; limb of calyx 4-toothed. ñ. S. Native of Brazil. Flowers white.

Marsh Diodia. Pl. 1 to 2 feet.

31 D. dasycéphala (Cham. et Schlecht. l. c. p. 348.) plant glabrous, herbaceous, ascending, rather woody at the base; branches tetragonal; leaves lanceolate, on short petioles, rather glaucescent, with scabrous margins; bristles of stipulas 5-7, hardly longer than the sheath; heads terminal, globose, girdled by 4 leaves; calyx hairy, bidentate. ñ. S. Native of the south of Brazil. Flowers white.

Thick-headed Diodia. Pl. ñ. S. 1 to 1 foot.

32 D. alta (Nees et Mart. nov. act. bonn. 12. p. 11.) stem erect, glabrous, dichotomous at the base, tetragonal; angles membranous, spinulose; leaves ovate, cuspidate, glabrous, with scabrous edges; bristles of stipulas 7-8, long; whorles of flowers terminal, naked, globose; fruit obvolute, crowned by the 2 ob-long-lanceolate teeth of the calyx. ñ. S. Native of Brazil, about the river Ilheos. Probably a species of Borrêria.

Winged-stemmed Diodia. Pl. ñ. S. 1½ foot.

33 D. bocone (Cham. et Schlecht. in Linnæa. 3. p. 347.) plant suffruticoso; branches quadrangular, scabrous; leaves oblong-lanceolate, glabrous, serrulate on the margins, and on the middle nerve beneath; heads of flowers terminal, rarely nearly axillary; fruit glabrous, obovate, crowned by the 4 scabrous teeth of the calyx. ñ. S. Native near the town of Santa Fe de Bogota. Spermacoe Bogotensis, H. B. et Kunth, nov. gen. amer. 3. p. 347. Willd. in Röm. et Schultes, syst. 3. p. 530. Corolla white, having the throat, and upper part of the tube bearded.

Bogéle Diodia. Shrub procumbent.

34 D. jenneri (D. C. prod. 4. p. 565.) plant decumbent or ascending, much branched; glabrous; stem tetragonal, scabrous along the angles; leaves oblong-linear, acuminated, glabrous, opposite, or falsely verticillate; bristles of stipulas longer than the sheath; heads of flowers terminal, girdled by 4 leaves; fruit oval-oblong, glabrous, crowned by the 4 teeth of the calyx.

—Native of Mexico, at the Cordillera de Cuchilagua, where it was collected by Berlandier. Perhaps the immature fruit is indehiscent. Probably a species of Borrêria.

Indecorous Diodia. Pl. decumbent.

Cult. —For culture and propagation see Borrêria, p. 618.

CLXXXIX. TRIODON (from òrêcès, treis, three, and circuit oòct ores, odou odontos, a tooth; the axis remains after the nuts of the fruit have fallen, and is tridentate at top). D. C. prod. 4. p. 566. —Diodia species. Cham. et Schlecht. in Linnæa. 3. p. 343.

Lin. syst. Tetrândria, Monogy'nia. Calyx with a turbinated tube, and a 2-4-toothed limb, and sometimes with accessory teeth. Corolla short, funnel-shaped, 4-cleft. Stigma bifid. Capsule characeeous, 2-celled, crowned by the calyx, containing 2 indehiscent 1-seeded nuts; having the axis, along with the lateral nerves, remaining after the nuts have fallen, and therefore the axis appears tridentate.—Much branched glabrous shrubs, natives of Brazil, with acutely tetragonal branches. Leaves opposite and falsely verticillate, oblong or linear; floral ones small. Flowers axillary or terminal at the tops of the branches, small, disposed in spikes or fascicles. It differs from Diodia in the axis of fruit being permanent and tridentate; and in habit.

1 T. Anthospermoïdes (Cham. et Schlecht. in Linnæa. 3. p. 343. under Diodia) shrubby, much branched, glabrous, downy at top while young; branches acutely tetragonal; leaves sessile, linear, acute, opposite, or falsely verticillate; bristles of stipulas longer than the sheath; flowers usually by threes in the axis of the upper leaves, and appear almost spicate from the upper leaves being nearly abortive; calyx hairy, with many teeth. ñ. S. Native of Equinoctial Brazil.

Anthospernum-like Triodon. Shrub.
2 T. GLOMERATUS (D. C. prod. 4. p. 566.) shrubby, much branched, glabrous; branches acutely tetragonal; leaves oblong-linear, opposite, and falsely verticillate; bristles of stipulas short; flowers disposed in fascicles at the tops of the branches; teeth of calyx 4, on the top of the fruit, 2 large, and 2 nearly obliterated. ☞ S. Native of Brazil. Diodia Brasilensis, Sprague, s. 1. p. 406. Rubia glomerata, Pohl, in litt. Nearly allied to T. polymorpha, var. a., but differs in the bristles of the stipulas being one-half short, in the branches being glabrous, and in the flowers being in terminal fascicles.

Glosemated-flowered Triodon. Shrub.

3 T. POLYMORPHA (Cham. et Schlecht. in Linnaea. 3. p. 344. under Diodia) shrubby, much branched, glabrous; branches tetragonal; leaves petiolate, oblong-linear, opposite, and falsely verticillate; bristles of stipulas rather longer than the sheath; flowers axillary and terminal, few; calyx bidentate, and sometimes with 2 accessory teeth. ☞ S. Native of Brazil. Fruit as in T. anthospermoïdes, to which it is very nearly allied.

Var. a, microphyllus (Cham. et Schlecht. l. c.) tops of plant downy; leaves smaller and firmer; calyx hairy, 4-toothed. ☞ S. Native of Brazil, in the province of Rio Janeiro, in dry, exposed places.

Var. b, intermedius (Cham. et Schlecht. l. c.) smoothish; leaves flat, softish; calyx glabrous, 4-toothed. ☞ S. Native of the south of Brazil.

Var. γ, macrophyllus (Cham. et Schlecht. l. c.) glabrous; internodes elongated; leaves flat, thinner and larger; calyx glabrous, bidentate. ☞ S. Native of the south of Brazil.

Polyrmorphus Triodon. Shrub 1½ foot.

Cult. The species of Triodon will grow in any good, light soil; and cuttings of them will strike root readily in the same kind of soil, under a hand-glass in heat.


Lin. syn. Tetrandria, Monogynia. Calyx with a didymous, ovate tube, and with the limb contracted at the base, and profoundly cleft at the apex, but not parted; lobes 4, linear-subulate, elongated, hairy, and 4 small accessory ones between these. Corolla salver-shaped, with a long tube, which is oboconical at the apex; a naked throat, and a 4-lobed limb. Stamens exerted. Style longer than the stamens, bifid at the apex. Fruit composed of 2 indehiscent, 1-seeded nuts, which at length separate from the axis, which is permanent, flat, membranous, and retaining the calyx at its apex.—Herbs which are sometimes suffruticose at the base, erect or ascending. Leaves opposite, ovate-lanceolate. Stipulas sheathing, ciliated with bristles. Flowers red, disposed in capitately terminal umbels, which are girded by involucra.

1 C.CALEOPHILA (D. C. prod. 4. p. 567.) stem terete, herbaceous, villous; leaves oblong-lanceolate, acuminate, with rather oblique nerves, of which 2 rise near the base on both sides; bristles of stipulas 7-9, hispid. ☞ H. Native of Mexico. Spermacoce capitata, Mol. et Sesse. fl. mex. icon. ined. but not of fl. per. Spermacoe hirta, Pav. ined. but not of Lin. Stamens longer than the lobes of the corolla. Corolla 4 lines long, red.

Beautiful-headed Crusea. Pl. 2 feet.

2 C. RUBRA (Cham. et Schlecht. in Linnaea. 5. p. 165.) stem tetragonal, herbaceous, hispid; branches opposite; leaves ovate, acuminate, hairy, with the nerves oblique on both sides of the mid-rib; bristles of stipulas 7-9, hispid. ☞ H. Native of Vera Cruz and Cuba. Crucianella hispida, Mill. dict. no. 4. Spermacoe rubra, Jacq. horst. schonbr. 3. p. 3. t. 256. Spermacoe longiflora, H. B. et Kunth, nov. gen. amer. 3. p. 271. Spermacoe strigosa, Sims, bot. mag. t. 1558. but not of Thumb. Spermacoe rubra and S. strigosa, Poir. Schultes. Flowers red or purple.


3 C. cocinea (D. C. prod. 4. p. 567.) stem tetragonal, suffruticos at the base, glabrous; leaves ovate-lanceolate, acuminate, petiolar, glabrous, with 3 nerves on both sides of the mid-rib; bristles of stipulas 3, glabrous, the middle one the longest. ☞ S. Native of New Spain. Spermacoe cocinea, Pavon, in herb. Dunant. Corollas scarlet, larger than in any other plant belonging to the tribe Spermacoeæ; it is even an inch long. Alabastra and lobes of the corolla beset with bristles on the outside; the rest of the corolla glabrous. Style exerted beyond the tube of the corolla. Fruit unknown; but the plant agrees in habit with the other species of the genus.

Sertis-flowered Crusea. Pl. 1 to 2 feet.

4 C. BRACHYPHYLLA (Cham. et Schlecht. in Linnaea. 5. p. 165.) stem nearly terete, fustular, clothed with rather retrogade hairs; leaves broad-ovate, on short petioles, of a different colour beneath, beset with scattered hairs above, and along the nerves beneath; heads of flowers terminal, involucrated by leaves; lobes of calyx triangular.—Native of Mexico, on Serra Colorado, where it was collected by Schiede and Deppe. Nearly allied to C. rubra, but differs in the characters indicated above, and in the fruit being much smaller, and nearly terete, not glosose. Flowers red, smaller and shorter than in C. rubra.

Short-leaved Crusea. Pl. 2 feet.

Cult. The annual species should be treated as other tender annuals, by being raised in a frame, and afterwards planted out in the open ground in May. The shrubby species should be treated in the manner recommended for Triodon above.


Lin. syn. Tri-HEXANDRIA, Monogynia. Calyx with a subglobose tube, and a 6-7-parted limb; teeth or lobes unequal, without any accessory ones. Corolla funnel-shaped, with an obconical tube, and a spreading, 3-6-lobed limb; lobes valvate in aestivation. Stamens equal in number to the lobes of the corolla; filaments exerted. Style 3-4-cleft at the apex. Stigmas rather capitate. Capsule containing 3-4 indehiscent, membranous, 1-seeded nuts, crowned by the permanent calyx, which at length becomes circumseised at the base, and falls off, leaving the nuts naked. Seeds peltate. Albumen between fleshy and horny.—Diffuse, decumbent herbs, natives of America. Roots almost simple, rather woody, with thick bark, which is wrinkled transversely; those of many of the species are used in various parts of the world as substitutes for Ipecacuanha. Leaves opposite, ovate. Stipulas of many bristles. Flowers capitate at the tops of the branches, each head involucrated by the 4 uppermost leaves.

§ 1. Calyx 6-7-lobed.

1 R. SCA'BRA (St. Hil. pl. us. bras. 8. t. 8. Mart. spec. med. bras. p. 10. t. 9. f. 13. root.) stems hairy; leaves ovate, or ovate-lanceolate, rarely oblong, acutish, with scabrous margins; bristles of stipulas shorter than the sheath; heads many-flowered; lobes of calyx triangular, ciliated; segments of 4 l 2.

2 R. rosea (St. Hil. pl. us. bras. no. 7. t. 7.) stems hispid, very hairy at the tops; leaves ovate-lanceolate, acumenately acute, with scabrous margins; bristles of stipulae longer than the sheath; heads few-flowered; lobes of calyx 6, linear, rather hispid; corolla ventricose, having the segments pilose on the outside.  

3. S. Native of Brazil, in dry, sandy places. R. emetica, Mart. spec. med. bras. p. 11. t. 9. f. 19. Cham. et Schlecht. in Linnæa. 3. p. 331. R. rosea and R. emetica, Schultes, syst. 7. p. 87. Corolla rose-coloured, 3 times longer than the lobes of the calyx. Roots black, twisted, and are used as a substitute for Ipecacuanha in the neighbourhood of Joao del Rey, in Brazil, where it is cultivated in great quantities for that purpose, under the name of Poaya do Campo, and are, along with the roots of R. scabra, imported into Europe.

Rose-flowered Richardsonia. Pl. procumbent.

3 R. grandiflorà (Cham. et Schlecht. in Linnæa. 3. p. 351.) plant ascending; stems hispid from bristles; leaves lanceolate, acute, scabrous from bristles; bristles of stipulae rather longer than the sheath; heads few-flowered; segments of the calyx lanceolate, acuminate; corolla glabrous.  


Great-flowered Richardsonia. Pl. procumbent.

5 R. lateráalis (D. C. prod. 4. p. 568.) erect, stem hispid from spreading hairs; leaves oblong-lanceolate, mucrinated above, and pilose beneath; bristles of stipulae longer than the sheath; heads of flowers small, 3 times shorter than the bracteas, which are ovate-lanceolate, and hispid beneath the base; lobes of calyx 6, subulate, longer than the tube.  

6. S. Native of Brazil, where it was collected by Pohl. Spermacéce late- rális, Pohl, in litt. Very nearly allied to R. divérgens, but the fruit is unknown, and is therefore a doubtful species of the genus.

Lateral Richardsonia. Pl. 1 to 2 feet.

5 R. divérgens (D. C. prod. 4. p. 568.) plant erect, hispid from bristles in every part; leaves linear-lanceolate, acuminate; bristles of stipulae longer than the sheath; heads small, 3 times shorter than the bracteas, which are lanceolate; limb of calyx very hispid, 6-cleft; fruit of 4 tubercularly mucrinated nuts.  

7. S. Native of Brazil, Pohl; and near Bahia, in cultivated places, Salzmann. Spermacéce divérgens, Pohl, in litt. Corolla white.

Divérgens Richardsonia. Pl. 1 to 2 feet.

6 R. spársa (D. C. prod. 4. p. 568.) the whole plant hispid from bristles; branches trichotomous; leaves linear-lanceolate, acuminate; bristles of stipulae equal in length to the sheath; heads either from the forks of the branches or from their tops; the latter one-half shorter than the bracteas, which are lanceolate; limb of calyx very hispid, 6-cleft; fruit of 4 tubercularly mucrinated nuts.  

7. S. Native of Brazil, Pohl; at Bahia, in dry pastures, Salzmann. Spermacéce spársa, Pohl, in litt. Flowers white.

Scattered Richardsonia. Pl. 1 to 2 feet.

§ 2. Calyx 4-lobed, very rarely 3-5-lobed.

7 R. stella’ris (Cham. et Schlecht. in Linnæa. 3. p. 352.) plant decumbent, twisted; stem hairy; leaves lanceolate, acuminate, hairy; bristles of stipula 5, much longer than the sheath; heads hemispherical; segments of the calyx 4, oblong; corolla glabrous, about equal in length to the calycine teeth.  

8. S. Native of Brazil, in the province of Cisplatine. Flowers 3-4-petalled, white?

Starry Richardsonia. Pl. decumbent.

9 R. adscéndens (D. C. prod. 4. p. 549.) stems ascending, villous; leaves oblong, attenuated at both ends, scabrous from pubescence on both surfaces; heads terminal, on long peduncles; leaves of involucre ovate, hardly exceeding the flowers; calycine segments 5, acute; corolla tubular, oblong lanceolate, shorter than the lobes of the calyx.  

10. S. Native of Mexico. Spermacéce adscéndens, Pav. in herb. Moric. Richárdia villosa, Moc. et Sesse. Pl. mex. icon. ined., in which the corolla is more coloured.

Trailing Richardsonia. Pl. trailing.

11 R. alsénse (D. C. prod. 4. p. 569.) stems trailing, flexuosus; stems clothed with canescent hairs; leaves ovate-lanceolate, acute, clothed also with canescent hairs; bristles of stipulae 3-6, equal in length to the sheath; heads hemispherical; segments of calyx 4, oval; corolla glabrous, rather longer than the lobes of the calyx.  

12. S. Native of Brazil, in the province of Monte Video. Flowers small, tetramerous and pentamerous.

Ascending Richardsonia. Pl. ascending.

10 R. Henkea’na (D. C. prod. 4. p. 569.) stems trailing, tufted, twisted, creeping, suffrutescous, hairy; leaves oblong, villous; bristles of stipulae shorter than the sheath; heads of flowers flat-topped; lobes of calyx 4, ovate, acutish; corolla subrotate.  

13. S. Native of Mexico, where it was collected by Kunth. Schielea mexicana, Bartl. in herb. Henke.

Henke’s Richardsonia. Pl. trailing.

Cult. The species of this genus will thrive in any light soil; and cuttings of them strike root readily in the same kind of soil, under a hand-glass, in a little heat.


Lin. syst. Tétrandria, Monogynia. Calyx with an ovate, rather ribbed tube, and 4 small unequal teeth, which are permanent, and erectly coniverted on the fruit. Corolla salver-spatulate, with a terete tube, a usually bearded throat, and a 4-lobed limb. Anthers at the throat. Stigma 2-lobed. Fruit 2-celled, usually separated from the base to the apex at the dissepiment into 2 pendulous, 1-seeded nuts, which are oblong, 2-angled, united at the base, and separating slowly, having the axis filiform, and remaining as in umbeliferous plants. Seeds ovate, triquetrous, erect. Albumen fleshy. Embryo erect—Herbs or sub-subspecies, natives of the East Indies. Stems terete or tetragonal. Leaves opposite, and falsely verticillate from axillary fascicles. Stipulas undivided, or of few bristles, joints with the base of the petioles. Cymes as in the plants belonging
to the order Valerianaceae, terminal, sessile, or pedunculate, having their branches becoming elongated and spike-formed, after flowering.

1. **K. Zeltiana** (Lin. spec. p. 151.) stem erect, glabrous, nearly terete; leaves lanceolate, almost sessile, glabrous; branches of cyme 1-2, very long, spicate, erect; tube of corolla much longer than the calycine tooth; throat of corollas bearded; stigmas exserted.—Native of Ceylon. Burn. fl. ind. 34. t. 13. f. 2. Lam. ill. t. 59. f. 1. Corolla 6 lines long. Fruit easily separated into 2 parts from the base.


2 **K. Sumatranes** (D. C. prod. 4. p. 569.) stem suffruticoso, erect, tetragonal, tomentose; leaves lanceolate, remote, villous, on short petioles; corollas terminal, compound; tube of corolla gibbous, short. ́S. Native of the East Indies, among the Circars, and probably of Sumatra and Velore, as well as of Nipal and Kamaon. Spermacoce Sumatrensis, Retz., obs. 4. p. 23. Rxb. fl. ind. 1. p. 372. Knoxia stricta, Garr. f. 1. p. 122. t. 25. Knoxia corymbosa, Wildl. spec. 1. p. 582. but the fruit is not separable into 2 parts as in the following. Knoxia mollis, R. Br. in Wall. cat. no. 820. Flowers small, white.

**Sumatra Knoxia.** Fl. July, Aug. Clt. 1818. Sh. 2 to 3 ft.

3 **K. Tereus** (D. C. l. c.) stem suffruticoso, erect, branched, terete, villous; leaves lanceolate, villous; corollas terminal, compound, with opposite branches, which at length become spike-formed; tube of corolla terete, straight, with the throat very villous, and hiding the anthers; style twice the length of the corolla. ́S. Native of the East Indies, in woods at Koorg. Spermacoce tereus, Rxb. fl. ind. 1. p. 375. K. umbellata, Banks, herb. ex Rxb.


4 **K. Excelsa** (D. C. l. c.) stem suffruticoso, stiff, villous in the younger parts; leaves lanceolate, petioleate, remote; corollas terminal, compound; stamens exserted; style bifid, exserted; fruit ovate, hardly separable into 2 parts. ́S. Native of the East Indies, on the Circaems, and of Nipal. Spermacoce excelsa, Rxb. fl. ind. 1. p. 374. This is only, perhaps, a var. of K. tereus, according to Rxb.

**Excelsa-stemmed Knoxia.** Shrub 1 foot.


**Glabrous Knoxia.** Shrub 1 foot.


7 **K. Heyneana** (D. C. prod. 4. p. 570.) stem absolutely tetragonal, rather rough; leaves lanceolate, ribbed, with secedod margins, rough from dots on both surfaces; corollas terminal, trichotomous.—Native of the East Indies. Knoxia species, Heyne. Spermacoce corymbosa, Roth, nov. spec. p. 98. Ræm. et Schultes, syst. 3. p. 278. but not of Lin. nor Burn. Very nearly allied to **K. Sumatrensis.**

**Heyne’s Knoxia.** Pl. 1 foot.

8 **K. Lineata** (D. C. l. c.) downy; stem herbaceous, branched a little, erect, villous; leaves ovate-lanceolate, with parallel veins; bristles of stipulas pilose; cymes corymbose, pedunculate, tripartite, axillary, and terminal; stamens inclosed. ́O.? ́S. Native of Java, among grass, about Ropmien. Spermacoe lineata, Blum. bijdr. p. 947. but not of Rxb.

**Lined-leaved Knoxia.** Pl. 1 foot.

9 **K. Wightiana** (Wall. cat. no. 6184.) plant glabrous; stem and branches slightly tetragonal; leaves lanceolate, mucronate, almost sessile; corollas terminal, compound, with spike-formed branches. ́S. Native of the East Indies. Spermacoce, Wight, herb.

**Wight’s Knoxia.** Shrub 2 to 3 feet.

10 **K. Plantaginea** (Wall. pl. rar. asiat. 1. t. 22.) stems herbaceous, almost simple, rising in numbers from the root, which is fusiform: radical leaves long-lanceolate, pilose; calyces one-lined, narrower; flowers terminal, sub-capitate; one or two of the calycine teeth are elongated; tube of corolla very long. ́S. Native of the Burmese Empire, on the mountains. Flowers blue.

**Plantain-like Knoxia.** Pl. 1 to 2 feet.

**Cult.** For culture and propagation see Græse, p. 627.

**CXCIII.** **PSYLLOCARPUS.** (from ψυλλος, πεύλος, a flea, and κορπος, καρπος, a fruit; in allusion to the colour and shape of the seeds.) Mart. nov. gen. et spec. bras. 1. p. 44. t. 28. D. C. prod. 4. p. 570. but of Pohl.

**Lin. syst.** Tetrandria, Monogyne. Calyx with a tubular tube, and an 8-toothed limb; teeth subulate, 6 of which are very short, and the other 2 opposite, linear, and elongated. Corolla funnel-shaped, with a bearded throat, and a 4-lobed achene limb. Anthers 4, inclosed. Stigma emarginately 2-lobed. Capsule crowned by the teeth of the calyx, compressed from the back of the carpels, 2-celled, having the dissepiment parallel with the valves; cells 1-seeded. Seeds oval, or orbicular, winged, much compressed, fixed to the centre of the dissepiment. Embryo straight, in the axis of thin albumen.—Small Brazilian shrubs, with twiggy, tetragonal branches. Leaves opposite, and often fasciculately verticillate from clusters of the leaves in the axis of the opposite ones. Stipulas joined with the petioles, forming a sheath, ciliate with bristles. Flowers axillary or terminal.

1 **P. Ericoides** (Mart. l. c. p. 45. t. 28. f. 1.) suffruticoso, almost simple at the bottom, glabrous; leaves 8-12, verticillate, shorter than the internodes; flowers terminal, sub-capitate. ́S. Native of Brazil, in the province of Minas Geraes, at Bandeinha, near Tejucu. Branches slender, twiggy. Corollas pale blue. Calyx glabrous.

**Heath-like Psychocarpus.** Shrub 1 to 2 feet.

2 **P. Laricoides** (Mart. l. c. p. 45. t. 28. f. 2.) a much-branched, glabrous shrub; leaves opposite, approximate, setaceous, clustered in the axis, and therefore falsely verticillate; flowers terminal, disposed in something like spikes. ́S. Native of Brazil, in the provinces of Minas Geraes and Bahia, in dry mountainous places. Cham. et Schlecht. in Linnaea. 3. p. 557. P. laricinum, Spreng. curr. post. p. 39. Branches erectly spreading. Corollas pale blue. Calyx glabrous.

**Var. β. densiflora** (Mart. l. c.). ́S. Native of Brazil, on Serra de Itambe.

**Larch-like Psychocarpus.** Shrub 1½ to 2 feet.

3 **P. Asparagoides** (Mart. l. c. p. 46.) a glabrous shrub, with twiggy branches; leaves disposed in verticillate fascicles, very slender, and setaceous; peduncles terminal, elongated, naked; flowers capitate. ́S. Native of Brazil, in the province of Minas Geraes, near Piedade. Branches twiggy. Corollas small, white. Calyx glabrous.
Asparagus-like Psyllocarpus. Shrubs 1 to 2 feet.

4 P. thymbroides (Mart. 1. c. p. 46.) shrub much branched; branches squarrose, downy; leaves downy, in fascicles; flowers terminal, somewhat spicate; calyxes hairy. S. S. Native of Brazil, in the province of Minas Geracs, on Serra de Gran Mogol. Flowers azure blue.

Thymbra-like Psyllocarpus. Shrubs 1 to 2 feet.

Cult. See Richardsii, p. 628. for culture and propagation.


Lin. Syst. Tetrandra, Monogynia. Calyx with an ovate tube, and a 4-toothed, permanent limb; 2 of the teeth are usually larger than the other 2, which are always small, or nearly obsolete. Corolla salver-shaped, with a terete tube, which is furnished near the base inside with a circular line of hairs, a glabrous throat, and a 4-lobed limb. Anthers exerted, or inclosed. Stigma bifi. Capsule membranous, crowned by the calyx, 2-celled, encircled round the middle. Seeds solitary in the cells, basilar, partly fixed to the dissepiment.—Herbs or sub-shrubs, with the habitat of Spermacoeae, all natives of America, except some species from Africa. Leaves opposite. Stipulas combined with the petioles a little long, and ending in many bristles. Flowers in dense, verticillate, axillary and terminal heads, the latter always involucrated by 4 leaves. Corollas white.

§ 1. Two of the calycine teeth are large, and two small.

* Spermacoeae and herbaceous perennial plants.

1 M. Humboldtia (Cham. et Schlecht. in Linnaea. 3. p. 358. t. 3. f. 1.) erect; branches nearly terete, downy while young, but glabrous in the adult state; leaves linear-oblong, or lanceolate, pubescent or hairy on both surfaces; stipulas with 5 stiff bristles on each side, naked at the apex; flowers disposed in dense verticillate heads; heads numerous, distant, terminal and axillary alike; the two large teeth of the calyx are subulate, and ciliated. S. S. Native of New Granada, from Silla de Caracas; and of Brazil, in sand by the sea-side, at Rio Janeiro. The specimens from Caracas are more hairy than the Brazil plant, which is trailing. Spermacoeae frigida, Wildt. in Rm. et Schultes. 3. p. 531. Kunth, nov. gen. 3. p. 349. Flowers white.

Humboldt’s Mitracarpum. Pl. 2 to 3 feet.

2 M. Sellowiana (Cham. et Schlecht. in Linnaea. 3. p. 361.) stem diffuse, much branched, clothed more or less with white hairs; leaves oblong or lanceolate, sessile, cuspidate, scabrous on both surfaces; stipulas cleft into many stiff bristles, membranous and villous at the base; leaves terminal, dense, involucrated by 4 leaves, which are 2 or 3 times longer than the head.

—Native of Brazil, about Rio Grande do Sul, Monte Video, &c.; in the Pampas of Buenos Ayres and Cordova. Capsule glabrous. The 2 larger teeth of the calyx are scabrous, erect, and subulate, with a very few additional denticles. Flowers white. Leaves varying from 2 to 4 lines broad. Stem usually very villous, but sometimes almost glabrous, as well as the leaves.

Sello’s Mitracarpum. Pl. diffuse.

3 M. Salzmanniana (D. C. pro. 4. p. 571.) stems diffuse, much branched, hispid from spreading stiffish hairs; leaves ovate-lanceolate, scabrous on both surfaces, setigerous at the apex; stipulas villous, membranous at the base, cleft into many stiffish bristles; flowers disposed in dense, verticillate heads, the ultimate or terminal head round, and involucrated by 2-4 leaves, which are hardly longer than the head.

—Native of Brazil, in sand by the sea-side, at Bahia, where it was collected by Salzmann. Very much like M. Selomii, but differs in the characters indicated, as well as in the seeds being paler and one-half smaller. Flowers white.

Salzmann’s Mitracarpum. Pl. diffuse.

4 M. schizan’giun (D. C. pro. 4. p. 572.) suffruticose; branches sub-tetragonal, downy; leaves oblong-lanceolate, acuminate, scabrous on both surfaces, and on the margins; stipulas villous and membranous at the base, cleft in many stiff bristles: heads of flowers terminal and axillary, verticillate; the former involucrated by 4 leaves.

—Native of Mexico, where it was collected by Henke. Schizangiun dumur, Bartl. in herb. Henke. Leaves 24-27 lines long, and 4 broad. Teeth of calyx acuminate, scabrous. Flowers white.

Cut-capped Mitracarpum. Shrub diffuse.

5 M. cuspidat’un (D. C. pro. 4. p. 572.) stems ascending, branched, downy; leaves linear, cuspidate by a straight margin, almost villous, glabrous; bristles of stipulas 3-5, stiff, longer than the sheath; heads of flowers terminal, axillary, 3-4 times shorter than the bracteas; calyx with 2 stipulate teeth, and 3-4 nearly abortive ones.

—Native of Monte Video; and of Chili, at Maldanado, in the Banda Oriental. Stem hardly a hand high, suffruticose at the base. Heads of flowers 4 lines in diameter. Floral leaves 9 lines long, and a line broad. Tube of the corolla almost double the length of the calycine teeth. Flowers white.

Cuspidate-leaved Mitracarpum. Pl. ascending.

6 M. virgatu’m (Cham. et Schlecht. in Linnaea. 3. p. 363.) stem suffruticose, erect, and are, as well as the branches, terete and glabrous; leaves linear, very narrow, glabrous; stipulas of two colours, ciliated; corollas long, tubular; stems exserted. S. S. Native of Brazil. Spermacoeae virgata, Willd. in Rm. et Schultes, syst. 3. p. 581. and 551. mant. 3. p. 295. Spreng. syst. 1. p. 401. Flowers white. Leaves 6-8 in a whorl, according to Link, but are probably only in axillary fascicles.

Twiggy Mitracarpum. Shrub 1 foot.

7 M. diffu’sum (Cham. et Schlecht. in Linnaea. 3. p. 363.) stem suffruticose, procumbent, terete, hairy; leaves lanceolate, exserted; heads of flowers axillary and terminal, the latter girded by 4 leaves; lobes of calyx 4, 2 large and acute, and 2 small. S. S. Native of Cuba, near the Havana, where it was collected by Ramon de La Sagra. Flowers white. Seeds brown, hollow in front, and marked by 4 small rays.

Ramon de La Sagra’s Mitracarpum. Shrub tufted.

8 M. sagre’a’nun (D. C. pro. 4. p. 572.) plant suffruticose, twisted and tufted, clothed with fine down; leaves oblong; heads of flowers axillary and terminal, the latter girded by 4 leaves; lobes of calyx 4, 2 large concave and blunt, and 2 small.

—Native of Senegal, on the banks of the river at Walo, where it was collected by Bacle, Perron, and Leprieur, and in other parts of Guinea, by Thonn. Oldenlandia verticillata, Bacle, in litt. Stauropspermum verticillatum, Thonn. in Schum. pl. guin. p. 73. Flowers white. Seeds small, nearly globose, pale, umbilicate in
front, and marked by 4 rays. Perhaps the same as M. scabra, Zuccar. in Röm. et Schultes, syst. 3. p. 210. which was found about Fort Louis.

Gasteranthus. Shrub.

** Annual plants.**

10 M. Toreresi'anum (Cham. et Schlecht. in Linne. 3. p. 360. t. 3. f. 2.) stem erect, simple, somewhat tetragonal, rather pilose on the angles; leaves elliptic-lanceolate, attenuated at the base, membranous, rather downy on both surfaces; stipulas membranous, with white villous bristles; flowers disposed in capitate whorles, the terminal one usually formed of 2 combined heads, and girded by 4 leaves. O. F. Native of Guajau and Marianne Islands. Flowers white.


11 M. villo'sum (Cham. et Schlecht. in Linne. 3. p. 363.) stem erect, sparingly branched, slightly tetragonal, villous; leaves ovate-lanceolate, downy; stipulas membranous, clefth into many bristles; heads of flowers axillary, verticillate, and terminal, the latter girded by 4 leaves; anthers inclosed. O. F. Native of Jamaica. Spermacoce hirta, Jacq. icon. rar. t. 308. and probably of Linn. Spermacoce villosa, Swartz, obs. p. 45. Corolla white. Anthers yellow. Seeds pale, somewhat tubercular on the back, and marked by a cruciate furrow in front.

Villous Mitracarpum. Fl. June, July. Clt. 1816. Pl. 1 1/2 to 1 foot.

12 M. hirtum (D. C. prod. 4. p. 572.) stem erect, branched, scabrous, tetragonal; leaves ovate-lanceolate, clothed with hairy pubescence; stipulas membranous, with many bristles: axillary heads of flowers verticillate; terminal ones girded by 4 leaves; anthers exerted. O. F. Native of Jamaica. Spermacoce hirta, Jacq. icon. rar. t. 308. and probably of Linn. Spermacoce villosa, Swartz, obs. p. 45. Very like M. villosa, but differs in being more branched, in the anthers being exerted and blue, and in the seeds being smaller, blacker, and concave in front, not with 4 rays.


13 M. Fishe'ri (Cham. et Schlecht. 3. p. 363.) stem erect, hairy, tetragonal; leaves oblong, attenuated at the base, acute, downy from very short hairs; stipulas ciliolate; flowers densely capitulate; terminal; teeth of calyx 4, lanceolate, acute, a little shorter than the corolla. O. F. Native of Jamaica. Spermacoce Fishe'ri, Link. enum. 1. p. 132. Spermacoce adscendens, Fisch. ined. Corollas white. Habit of Spermacoce aspera, Aubl.


14 M. stylo'sum (Cham. et Schlecht. in Linne. 3. p. 363.) stem decumbent, terete, glabrous; leaves oblong-lanceolate, attenuated at the base; bristles of stipulas long; flowers disposed in dense whorles; the two large teeth of the calyx are subulate at the apex; style exerted. O. F. Native of Manilla. Spermacoce stylo'sa, Link. enum. 1. p. 132. Spermacoce crassifolia, Hortul. Capsule membranous, glabrous. Corollas white. Seed orbicular, with a mark like the letter x engraved on the front, somewhat 4-lobed, of a pale, dirty colour.


§ 2. Calyx with 4 nearly equal acute teeth.

15 M. neale'etum (D. C. prod. 4. p. 573.) plant glabrous, dichotomous; leaves oblong-linear, acute, almost veinless; bristles of stipulas 3, stiff, longer than the sheath; heads of flowers terminal, 3 times shorter than the bracteae; calyx glabrous, with 4, hardly acute teeth, which are a little shorter than the corolla. —Native of Brazil, where it was collected by Pohl. Spermacoce neglécta, Schott ex Pohl, in litt. Heads of flowers 5 lines in diameter. Floral leaves about an inch long, and 2 lines broad. Neglected Mitracarpum. Pl. ?

† Species not sufficiently known.

16 M. squarro'sum (Cham. et Schlecht. in Linne. 3. p. 363.)—Native of Cuba, on rocks about Havana. Spermacoce squarro'sa, Poepp. Nearly allied to M. Seltonia, but differs in its smoothness.

Squarrose Mitracarpum. Pl.

Cult. See Borrer'ia, p. 618. for culture and propagation.

**CXCVI. STAEelia.** (this genus is dedicated to the illustrious Baron Augustus de Stael Holstein). Cham. et Schlecht. 3. p. 364. t. 3. f. 3. D. C. prod. 4. p. 573.

Lin. syst. Tetra'dria, Monog'nya. Calyx with an ovate tube, and only 2 subulate teeth, with hardly any accessory ones. Corolla funnel-shaped, with a slender tube, and a 4-lobed acute limb. Stamens 4, exerted. Stigma 2-lobed. Capsule membranous, 2-celled, 2-valved, with an entire permanent dissepiment; valves concave, crowned each by a calycine tooth, cut at the
base by a line from the disseipment, and therefore falling asunder. Seed solitary, fixed to the disseipment.—Brazilian herbs, with terete stems. Leaves glabrous, linear, opposite, and in axillary fascicles. Stipulas membranous, narrow, of many bristles, or acutely 3-lobed. Axillary heads of flowers verticillate, and the terminal ones globose. Allied to *Mitracarpum*.

1 *T. thyoides* (Cham. l. c.) stem much branched, ascending, puberulous; stipulas acutely 3-lobed; whorles of flowers few. 2. S. Native of the south of Brazil. Leaves 5 lines long, and hardly a line broad. Corolla purple. Heads of flowers size of small peas.

*Thyme-like* *Staelia*. Pl. $\frac{1}{2}$ to $\frac{1}{2}$ foot.

2 *S. galoides* (D. C. prod. 4. p. 573.) stems glabrous, sparingly branched, twiggy, elongated; stipulas of many bristles; whorles of flowers few.—Native of Brazil, where it was collected by Pohl. Spermacoce *galoides*, ex Pohl, in litt. Leaves an inch long, and half a line broad. Whorles of flowers distant at the top of the stem.

*Galium-like* *Staelia*. Pl. $\frac{1}{2}$ foot.

3 *S. reflexa* (D. C. l. c.) stems smoothish, much branched; branches twiggy; leaves linear, with rather revolute margins; stipulas tridentate; whorles in nearly all the axes; floral leaves reflexed.—Native of Brazil, where it was collected by Pohl. Spermacoce *reflexa*, Pohl, in litt. Whorles 20-30 on each branch. Leaves 4 lines long.

*Reflexed-leaved* *Staelia*. Pl. $\frac{1}{2}$ to 1 foot.

Cult. See *Richardsonia*, p. 628. for culture and propagation.

**CXC VII. TESSIERA** (named after M. Tessier, who has written on the diseases of wheat, and the effects of light upon plants, &c.). D. C. prod. 4. p. 574.

**Lin. syst. Tetrandria, Monogy'nia.** Calyx with an ovate tube, and a 4-lobed limb; lobes nearly equal, without any accessory ones. Corolla funnel-shaped, with a glabrous throat, and a 4-lobed limb. Stamens hardly exerted. Stigma 2-lobed. Capsule 2-celled, 2-valved, with an entire oval deciduous disseipment; valves concave, crowned by the teeth of the calyx, falling asunder from being cut vertically along the disseipment. Seeds solitary in the cells, fixed to the middle disseipment.—American herbs, clothed in every part, except the corollas, withomentum or wool. Leaves opposite, sessile, lined by the nerves. Stipulas eleft into many bristles. Flowers axillary, sessile, few, verticillate, bracteolate.—This genus is nearly allied to *Staelia* from the structure of the fruit, but to *Borréria* or *Diódia* from habit.

1 *T. lanifera* (D. C. prod. 4. p. 574.) plant clothed with long white wool; stem or branches twiggy, terete.—Native of Brazil, where it was collected by Pohl. *Diódia* or Spermacoce *lanifera*, Pohl, in litt.

*Wool-bearing* *Tessiera*. Pl.

2 *T. lithospermoïdes* (D. C. prod. 4. p. 574.) plant suffruti-
cose, erectish, branched, grey in every part from crowded short velvety down; fruit at length glabrous. 1. 2. S. Native of Mexico, where it was collected by Hanke. Spermacoce *lithospermoïdes*, Bartl. in herb. Hanke.

*Lithospermum-like* *Tessiera*. Pl. 1 foot.

Cult. For culture and propagation, see *Richardsonia*, p. 628.

**CXC VIII. GAILLONIA** (evidently named after some person of the name of Gaillion, of whom we know nothing). A. Rich. mem. soc. hist. nat. par. 5. p. 153. t. 15. f. 34. D. C. prod. 4. p. 574.

**Lin. syst. Pent-Heptádria, Monogy'nia.** Calyx with an ovate tube, and a 5-7-lobed permanent limb; teeth unequal. Corolla funnel-shaped, with a terete tube, and a 5-7-lobed limb; lobes oblong. Stamens 5-7, exerted from the throat, but shorter than the corolline lobes. Style filiform, thickened at the apex; stigma 2-lobed. Fruit egg-shaped, almost naked at the apex, containing 2 separable, 1-seeded, indehiscent nuts.—Hard, oppositely-branched herbs, velvety from fine down in every part, as also on the corollas. Leaves linear, ending in a caly-

lus mucrone, opposite, bearing twin stipulas on both sides, which are sometimes short and truly stipula-formed, and sometimes long and foliaceous, and in the latter case appearing like those of *Galium*. Flowers some in the forks of the branches, sessile, solitary, and naked, and others sessile at the tops of the branches, between the 2 superior leaves.—Habit of *Aspérula*, with a velvety aspect. This genus ought probably to be placed among *Rubiacées*, sect. *Stellátæ*.

1 *G. olivério* (Rich. l. c.) stem multiple, bracteate, and as if it was articulated; branches opposite; leaves distinct at the base, linear-subulate, spinosent at the apex; stipulas leaf-

formed, distinct from the leaves. 1. 2. S. Native of Persia, between Teheran and Isphahan, where it was collected by Olivier and Brugruere.

Olivier’s *Gaillonia*. Pl. $\frac{1}{2}$ foot.

2 *G. Bruguière* (A. Rich. l. c.) stem multiple; leaves linear-

lanceolate. 1. 2. S. Native alongside with the preceding, and probably only a broad-leaved variety of it.

*Bruguière’s Gaillonia*. Pl. $\frac{1}{2}$ foot.

3 *G. Szovitzii* (D. C. prod. 4. p. 574.) stem branched at top; branches erect; leaves subulate; upper ones conate at the base, and adhering to the stipulas, and therefore appearing tri-

furcate and trispinose at the apex. 1. S. Native of Persia, in very arid, stony places near Nekhæthus, where it was collected by Szovitz.—A very distinct species.

Szovitz’s *Gaillonia*. Pl. $\frac{1}{2}$ foot.

Cult. The species of *Gaillonia* should be grown in pots, half filled with pot-shers, in a mixture of sand and peat, and placed among other alpine plants. They may be increased either by cuttings or seeds.


**Lin. syst. Pentàdria, Monogy'nia.** Calyx with an obovate tube, and a small 5-parted limb. Corolla funnel-shaped, 5-cleft, with a short tube, and a villous throat. Stamens 4, inserted in the throat, exerted; anther rather coriace. Stigma bispinose. Capsule oblong-cuneate, rather tetragonal, crowned by the limb of the calyx, celled, separable into 2, 1-seeded, indehis-

cent, ligneous-coriaceous, trignial nuts, which are fixed internally to the linear axis beneath its apex. Seeds solitary in the cells, pendulous. Radicle superior. Albumen fleshy.—Shrubs or trees natives of South America. Leaves opposite, petiolate, acuminate. Stipulas interpetiolar, solitary on both sides. Panicles sub-corymbose, terminal. Flowers white, hardly larger than those of *Aspérula*.

1 *M. acuminata* (Humb. et Bonpl. pl. equin. t. 29.) unarmed; leaves ovate-elliptic, short-acuminated, downy on both surfaces. 1. S. Native in the town of Guayaquil, by way of sides, where it is called *Ceiba blanca* by the natives. H. B. et Kunth, nov. gen. amer. 3. p. 550. Flowers white.

Acuminated-leaved Machaonia. Tree 25 feet.

2 *M. Brasiliës* (Cham. et Schlecht. in Linne. 4. p. 2.) unarmed; leaves oblong-lanceolate, acuminate, having the veins downy beneath. 1. S. Native on the north of the Amazon, about Gran-Para. Cinchona Brasiliës, Hoffmannseg. ex Wild. ms. in Humb. berl. mag. p. 119. Ræm. et Schultes.
Flowers linear, S. the plant lobes Native. is, the straight A. The T? lobes FIG. 169. 4-6-parted Native keeper, S. the but Schreb. stigma rarely C. Dysoda Thymelae'a, 5. about branches which fruit). 575. 196. 2-celled, 2-seeded, exserted, and parted Thunb. in fruit. 146. 1-0. Thunb. with cuttings 109. 3. leafy, whitish. 115. 2-celled, 2-seeded, crowded by the calyx, ex. Rich.—A small shrub, glabrous in every part except the young branches, which are whitish. Leaves small, almost sessile, opposite, and generally in axillary fascicles, having an ungrateful scent when bruised. Stipulas combined with the petioles, and ciliately fringed on the margins. Flowers terminal, in fascicles, almost sessile, white.—The fruit is described by Blume and Jussieu as many-seeded.

1 S. FLORIDA (Comm. l. c.). G. Native of China, Japan, Cochin-china, and other places of the East. Lycium Japonicum, Thunb. fl. jap. p. 17. Curt. bot. mag. 361. Lycium fo'tidum, Lin. fl. suppl. 150. Lycium Indicum, Rez. obs. 2 p. 12. Dysoda fasciculata, Lour. fl. 146. Dysoda fœ'tida, Salisb. prod. p. 60. Spermacoce fruticosa, Desf. Hort. Par. A small bushy shrub, with small dark-green, shining, myrtle-like leaves, and white single or double flowers, which are reddish outside. The plant from Japan differs from that of China, according to Blume, in the hairs on the inside of the throat of the corolla being geniculated, not clavate.


Cult. This little shrub grows well in a mixture of loam, peat, and sand; and cuttings root readily in sand, with a hand-glass over them.


Lin. Syst. Tetra-Hexandra, Monogynia. Calyx with an ovate tube, and a 4-5-parted limb; lobes oblong-linear, acute, erect, permanent. Corolla salver-shaped, with a terete, somewhat tetragonal tube, a naked throat, and 4-6 lanceolate, revolute lobes, ex Rich; but circinately convolute according to others. Stamens with the filaments free from the upper part of the tube, longer than the corolla; anthers acute, erect. Style longer than the stamens; stigma emarginate. Berry roundish, crowned by the calyx, bilocular, 2-celled, containing two 1-seeded pyrenes, or nits. Seeds peltate, ex Rich, fixed by a longitudinal chink in the middle. Albumen cartilaginous. Embryo erect, with foliaceous cotyledons.—A deciduous shrub, native of America. Leaves opposite, almost sessile, lanceolate or elliptic. Flowers axillary, pale yellow, sessile.

1 E. littoral's (Swartz, l. c.). G. Native of Jamaica, Porto Rico, Guadaloupe, and others of the West Indies Islands, on the sea shore, Vahl, symb. 2 p. 28. —Knötz. Browne, jam. 140. no. 1. Thymela'a, Sloane, hist. jam. 2 p. 93. t. 169. f. 1-2. Berries yellow. In fl. mex. the flowers are painted white, and the berries red; it is, therefore, perhaps a distinct species. Stipulas surrounding the branch ciliated.

Sea-shore Ernodea. Shrub decumbent.

Cult. See Richardsiida, p. 628. for culture and propagation.


1 C. ta'ifá (Hamilt. l. c.). 3. F. Native of Nipal. Trifid-bracted Cuncea. Pl. 1 1/2 foot.

Cult. For culture and propagation, see Richardsiida, p. 628.


—This genus is very nearly allied to Diódia, but differs in the fruit not being divisible into 2 parts, and in the stipulas not being cut into many bristles.

1 H. maritima (Lin. fil. suppl. p. 126.). 2. $ S. Native of Malabar and Coromandel, in the sand by the sea side, Roxb. 4 M
Gaertn. l. c. Flowers of a lilac colour. Habit of Arenária
peploides, but larger (f. 109.).

Sea-side Hydrophilax. Pl. creeping.

† A species not sufficiently known.

2 H. MADAGASCARICUS (Willd. herb. ex Ræm. et Schultes,
syst. 3. p. 527.) leaves lanceolate, acute, sessile, closely imbrici-
cated, sheathed; flowers terminal.—Native of Madagascar,
where it was collected by Commerson.

Madagascar Hydrophilax. Pl. creeping.

Cult. This plant should be grown in a pot filled with small
gravel, and watered from time to time with salted water. It
will be easily increased by separating the rooted stems, or by
seeds.

CCIV. SCYPHIPOHORA (from συϕης, skyphos, a bowl or
cup, and φηρο, phero, to bear; application not evident). Gaertn.
soc. hist. nat. par. 5. p. 159. t. 14. f. 1. D. C. prod. 4. p. 577.—
Hydrophilax species, Juss.

Linn. syst. Tétrandra, Monogynia. Calyx with an ovate
tube, and a short tubular truncate nearly entire limb. Corolla
funnel-shaped, having the tube hairy inside, and the limb with 4
lanceolate spreading segments. Stamens 4, exserted; filaments
short; anthers incumbent inwardly. Stigma bifid, with approxi-
mate lobes. Drupe baccate, crowned, 8-furrowed, containing 2
bony oblong 1-seeded pyrenæ or nuts, which are flat inside, and
furrowed on the back. Albumen fleshy. Embryo central,
erek, with obtuse cotyledons, and a somewhat incurved radicle.

—A shrub native of the Moluccas. Leaves opposite, veinless.
Flowers subcrenose, axillary.

1 S. HYDROPHILACEA (Gaertn. and Blum. l. c.). 7. S. Nat-
ive of the Moluccas, by the sea side. Hydrophilax, Banks,
herb.

Hydrophilax-like Scyphiphora. Shrub.

Cult. For culture and propagation see Hydrophilax above.

CCV. PLOCAMA (from πλοκάμος, plokamos, bent or twisted
hairs; in reference to the numerous slender, pendulous branches).
Barlingia, Richb. in flora 1824. p. 241. icon. exot. 1. t. 11. but
not of Brongn.—Plocama and Barlingia, Spreng. syst.—Plocama
and Plocama, Gmel. syst.

Linn. syst. Penta-Hexándria, Monogynia. Calyx with an
ovate-globose tube, and a small sinuate toothed limb. Corolla
campanulate funnel-shaped, 5-cleft; rarely 6-cleft. An-
thers inserted between the lobes of the corolla, sessile at the
throat, linear. Stigma thickish, slightly 2-lobed, or undivided.
Fruit almost baccate, areolate at the apex, and crowned by the
small inflexed calyx, 2-3-celled. Endocarp membranous. Seeds
solitary in the cells, erect, with thin albumen. Embryo
with a terete radicle, and flat cotyledons.—A small, glabrous,
much-branched shrub, with the branches terete, slender, and
pendulous. Leaves linear-filiform, opposite. Stipulas com-
bined, with the petioles short, bluntly toothed, membranous.
Flowers solitary or by threes in the axils of the upper leaves,
and on the tops of the branches, white, on short peduncles.

1 P. PÉNDULA (Ait. l. c.). 7. G. Native of the Canary
Islands. Plêcama péndula, Poir. suppl. 4. p. 441. Barlingia
scoparia, Richb. icon. exot. t. 11. and Plêcama péndula, Richb.
p. 9. with a good description and figure. Habit of Gûltum.


Cult. See Serissa, p. 653. For culture and propagation.

CCVI. PUTORIA (from puto, rankeness; in reference to the
mem. soc. hist. nat. Par. 5. p. 160. D. C. prod. 4. p. 577.—
Aspécula species, Lin. fil.—Sherária species, Cy.—Pavétta
species, Cy.—Ernôdea species, Smith.

Linn. syst. Pentatândria, Monogynia. Calyx with an ovate
tube, and a short tubular, 5-toothed limb. Corolla salver-
shaped, with a long terete tube, a glabrous throat, and 4 spread-
ing, acutus lobes. Filaments of stamens short, rising from the
root of the tube of the corolla, hardly exserted. Anthers oblong-
linear, ex Rich. Stigma bifid. Berry nearly dry, ovate-oblong,
umbilicate, 2-celled. Seeds oblong, solitary in the cells.—Shrubs
stiff. Leaves opposite, feitd when bruised, oblong-linear, obtu-
se. Stipulas solitary on both sides. Flowers sessile on the
top of the branch, divided. Habitat of Dèphine Gnéoum.

1 P. CALAÐRICA (Pers. l. c.) stem shrubby, much branched;
branches clothed with velvety down; leaves oblong, obtuse,
smoothish; stipulas solitary on both sides. 7. F. Native of
Calabria, Candia, Syria, Atlas, Sicily, &c. on calcareous rocks.
Aspècula Calabria, Lin. fil. suppl. p. 120. L’Hér. stipr. nov. 1.
p. 65. t. 32. Sherária fo'tida, Lam. dict. 4. p. 326. Pavétta
fettidissima, Cyr. pl. neap. 1. p. 8. t. 1. Ernôdea montâna,
Lo-nicèra Sicula, Ueria, pl. add. p. 249. ex Guss. Sherária fett-
dissima, Cyr. char. 69. t. 3. f. 7. Pavétta fettidissima, Cyr. neap.
fasc. 1. t. 1. Flowers red. Habit of ïspra. Leaves pale
yellowish, scabrous on the edges and keel.


2 P. ? TÉDECA (D. C. prod. 4. p. 577.) stem herbaceous,
sparingly branched, rather radicant at the base; branches hispid
from villi; leaves ovate, acute, villous; stipulas twin on both
sides, subulate. 7. F. Native of the East Indies, on the Nel-
ligyher mountains, in humid places, where it was collected by
Leschenault, who has called it Aspècula from habit, in his herba-
riums. Style corkscrew-like, divided at the apex into 2 thickish,
hispid, short stigmata. The flowers are much like those of the first
species, but the fruit being unknown, the genus to which it propre
belongs is still doubtful.

Indian Putoria. Pl. ½ to 1 foot.

Cult. A mixture of chalk, sand, and peat will be the best
soil for the species of Putória; and they may be readily increased
by cuttings or seeds.

Tribe XI.

ANTHOSPERMEÆ (the plants contained in this tribe agree
with the genus Anthôspèrnum in particular characters). Cham.
Par. 5. p. 136. D. C. prod. 4. p. 578. Flowers dioecious, or
hermaphroditic. Corolla rotate (f. 110. b.). Styles separate to
the base, ending in an elongated, hispid, or plumose stigma
each (f. 110. c.). Fruit constantly of 2 indehiscent, 1-seeded
mericarps or nuts (f. 110. g, f.), which are easily separated
at maturity. Albumen fleshy.—Small shrubs or herbs. Leaves
opposite or verticillate. Stipulas small, 1-3-toothed, adnate to
both sides of the petioles.

CCVII. CAPROSA (from καρπός, karpos, a wild fruit,
and οίμη, osime, a smell; in allusion to the species having a
t Finding a smell) Forst. gen. t. 69. Lam. ill. t. 186. and 854. Juss. mem.
D. C. prod. 4. p. 578.

Linn. syst. Tetra-Heptándria, DIGY'NIA. Calyx with an ovate
tube, and a 5-7-lobed short limb (f. 110. a.). Corolla cam-

Glabrous shrubs, with terete branches. Leaves opposite, or 3-4 in a whorl, acuminate. Stipulas membranous, adnate to the petioles, and cleft into many filiform bristles. Panicles terminal, compound. Flowers small, greenish white, but changing to brownish as they fade. According to Cruse, ex Linnaea. 6. p. 20. The fruit is shining, and the nuts are fixed by the base, not hanging from a central filiform axis.


Var. \( \beta \), pauciflora (D. C. prod. 4. p. 579.) peduncles 1-3-flowered, shorter than the leaves. G. Native of the Canary Islands. P. pauciflora, A. Rich. mem. soc. hist. nat. par. 5. p. 141.

Noble Bastard Hare's-ear. Fl. June, July. Clt. 1699. Shrub 2 to 3 feet.

Cult. A mixture of loam, peat, and sand is a good soil for this shrub; and cuttings root freely, if planted in a pot of sand, with a hand-glass over them.


Lin. syst. Tetràndria, Digy'nia. Flowers hermaphrodite. Calyx with an obovate tube, and a very minute, nearly equal limb. Corolla subrotate, 4-parted, almost cleft to the base. Stamens 4, inserted in the bottom of the corolla. Anthers oblong. Styles 2, very short, each ending in a long hairy stigma. Fruit obvolute, rather didymous, somewhat compressed from the back, and elegantly and gyroscopically worted on the back, composed of two 1-seeded, indescent mericarps, joined by a concave commissure, but at length separating from each other.—A glabrous herb, with the habit of Circe'a. Stem rather angular from 2 elevated lines which run from the stipulas, branched. Leaves opposite, 1 to 3 inches long, ovate-lanceolate, acuminate, tapering into the petioles, paler beneath, with serrately-scabrous margins. Stipulas trifidate. Peduncles terminal and axillary, the whole forming a large terminal, trichotomous panicle, which is nearly a foot in diameter. Flowers small. Fruit dark brown.


Enchantress's Nightshade-like Galopina. Pl. 2 feet.
Cult. See Phyllis above for culture and propagation.

CCX. ANTHOSPER'MUM (from \( \alpha \nu \theta \omega \sigma \), anthis, a flower, and \( \sigma \pi \mu \rho \alpha \mu \), sperma, a seed). Lin. gen. no. 1164. Juss. gen. 178. Gaertn. fil. carp. 3. p. 37. t. 195. Cruse, rub. cap. p. 1. A. Rich. mem. soc. hist. nat. par. 5. p. 138. D. C. prod. 4. p. 579. Schlecht. and Cruse, in Linneea. 6. p. 7.—Tournefortia, Ponted. epistl. 11. ex Gaertn.—Ambra'ria, Heist. but not of Cruse.

Lin. syst. Tetra-Pentàndria, Digy'nia, or Die'cia Tetra-Pentàndria. Flowers dioecious or hermaphrodite. Calyx with an obovate tube, and a 4-5-toothed deciduous limb (f. 110. a.). Corolla funnel-shaped, with a short tube, and a 4-5-parted limb (f. 110. b.); lobes linear or ovate-lanceolate, revolute, valvate in activation. Stamens 4-5, inserted in the base of the tube of the corolla (f. 110. c.). Anthers oblong, sub-tetragonal, exserted. Styles 2, very short, connate? ending each in a long

4 m 2
hairy stigma (f. 110, f. g.). Fruit composed of 2 easily-separa-
ted, indehiscent, 1-seeded mericarps, which are a little com-
pressed at the raphe, and joined together by a flattish commis-
sure. Albumen sub-carillaginous. Embryo dorsal, erect.—
Small shrubs or herbs, natives of the Cape of Good Hope.

1 A. BERGIAIUM (Cruse, rub. cap. p. 8.) leaves linear-lanceo-
late, 3 in a whorl, imbricated, and connately perfoliate, ciliat;
flowers pentandrous, disposed in a verticillate spike. ἅ. G. Native of the Cape of Good Hope. Stem branched, terete or
obliquely angular, glabrous at the base, but clothed with long white hairs above. Leaves pale green, having the margins and keel ciliated with long white hairs, half an inch long. Whorles 3-flowered.

Bergius's Amber-tree. Shrub 1 foot.

2 A. ÉTHIOPICEM (Lin. spec. 1511.) leaves linear-lanceolate,
3 in a whorl, glabrous; stipulas simple, short, acute; flowers
tetrandrous, disposed in verticillate spikes; mericarps elliptic,
clothed with white tubercles, crowned by the calycine teeth. ἅ. G. Native of the Cape of Good Hope, Crus. rub. cap. p. 10.

G. Native of the Cape of Good Hope. Stems branched, terete
or obliquely angular, glabrous at the base, but clothed with long white hairs above. Leaves pale green, having the margins and keel ciliated with long white hairs, half an inch long. Whorles 3-flowered.

2 to 3 feet.

3 A. SPATULATUM (Spreng. neu. entr. 3. p. 45. syst. 1. p.
399.) leaves opposite, linear-spatulate, bluntest; flowers axil-
ary, sub-verticillate; mericarps oblong, warty; branches
twiggy, erectly spreading, downy. ἅ. G. Native of the Cape
of Good Hope, Cruse, rub. cap. p. 9. and p. 13. A. Éthiopi-
cicum, var. β. oppositifolium, Schlecht. and Crus., in Linnaea. 6.
p. 10. It differs from A. Éthiopicum in the opposite, linear-
spatulate leaves, and in the more lobed habit. A. Éthiopicum,

4 A. CILAVER (Lin. spec. 1521.) leaves opposite, lanceolate,
acute, ciliate; stipulas short, simple; flowers axillary, tetran-
drous; mericarps obvate, glabrous, shining, destitute of the
calyx limb. ἅ. G. Native of the Cape of Good Hope, Gern.

5 A. G. Native of the Cape of Good Hope, Gerni.

A.ギャリウス, Rechb. in Spreng. syst. 4. p. 338.—Pluk. mant. t.
344. f. 5. Stem usually decumbent, much branched; branches
ergular, downy. Leaves glabrous, and green above, but white
beneath, connate at the base. Lobes of the corolla hairy outside.
Anthers white.—The A.ギャリウス, Rechb. differs from this
in the leaves being rusty beneath.

Ciliated-leaved Amber-tree. Shrub decumbent.

6 A. lanceolatum (Thunb. prod. 32. fl. cap. p. 157.) leaves
opposite, lanceolate, acute, glabrous, spreading; stipulas
profundely bifid; flowers axillary, sub-verticillate, tetrandrous,
and often pentandrous; mericarps ovate-oblong, glabrous. ἅ. G.
Native of the Cape of Good Hope, Cruse, rub. cap. p. 12.

Ciliated-leaved Amber-tree. Shrub procumbent.

7 A. STELLATUM (Cruse, rub. cap. p. 11.) leaves opposite, lanceo-
late, acute, ciliate while young, hairy at the base; stipulas sim-
ple, subulate, hairy; flowers axillary, pentandrous; mericarps
unknown. ἅ. G. Native of the Cape of Good Hope, on
A. lanceolatum, Sieb. fl. cap. no. 90. A. hisrotum, D. C. prod.
4. p. 580. Stem purplish brown, branched, beset with white
hairs about the axis of the leaves. Branches purple, hairy.
Leaves an inch long, connate at the base. Stipulas hairy, of
a shining green colour above, but whitish beneath.

Lanceolate-leaved Amber-tree. Shrub procumbent.

8 A. PANICULATUM (Cruse, rub. cap. p. 9. and p. 15. t. 1.
.) leaves opposite, linear-subspatulate; stipulas short, sim-
ple; flowers panicked, tetrandrous; mericarps glabrous, with 3
ribs. ἅ. G. Native of the Cape of Good Hope. Stem
fuscescent, branched from the base; branches downy.
Leaves glabrous, bluntish, pale on the lower surface, hardly ½
an inch long. Panicle terminal, narrow, elongated. Fruit crowned
by the calycine teeth.

Panicled-flowered Amber-tree. Shrub 1 to 2½ feet.

9 A. LICHTENSTEINI (Crus. rub. cap. p. 15.) leaves opposite,
linear, keeled, glabrous, ciliat; stipulas simple, ciliated;
flowers axillary, verticillate; mericarps hairy. ἅ. G. Native
of the Cape of Good Hope, Spermacoce ericetfolia, Licht. in
Rem. et Schultes, syst. 3. p. 281. Stem branched, glabrous
at bottom, and downy at top. Branches naked at the base.
Leaves connate at the base, mucronate. Flowers tetrandrous.

Lichtenstein's Amber-tree. Shrub 1 to 2 feet.

10 A. SPERMACEAE (Rechb. in Spreng. syst. 4. p. 338.
leaves opposite, oblong-lanceolate, with scabrous margins; sti-
plas entire; flowers axillary, solitary, pedicellate, pentandrous;
calyx 5-toothed. ἅ. G. Native of the Cape of Good Hope.

Spermaceae-like Amber-tree. Pl. 1 foot.

Lanceolate-leaved Amber-tree. Shrub procumbent.

** Flowers dioecious, panicled.

** Flowers gynodioecious, panicled.

** Flowers hermaphrodite.

Spermacoce-like Amber-tree. Pl. 1 foot.

Cult. See Phylitis, p. 635. for culture and propagation.

CCXI. AMBRAARIA (a name formerly applied to the genus
Anthospermum by Heister, and is probably derived from Cape
hist. nat. Par. 5. p. 199. t. 12. f. 2.

L. syst. Diecia, Tetrandra. Flowers dioecious, of the
same structure as those of Anthospermum, but differs from that
genus in the capsule being 3-celled, the intermediate cell vacant,
and the lateral ones 1-seeded. The rest as in Anthospermum.

** A. hiuktA (Cruse, rub. cap. p. 17. t. 1. f. 2.) leaves 3 in
a whorl, connately perfoliate; fruit tomentosely hairy. ἅ. G.
Native of the Cape of Good Hope. Shrub much branched
from the base, hairy at the top. Leaves linear, subtriangular,
glabrous, connate at the base, with the margins and keel ciliated,
at length imbricated and deciduous. Stipulas hardly prominent, ciliated. Flowers axillary, verticillate. According to Cham. et Schlecht. Clffortia cinerea, Lin. is a synonyme of this.

**Hairy Ambriaria.** Shrub $\frac{1}{2}$ to $\frac{3}{4}$ foot.

2 A. **Olabra** (Cruse, rub. cap. p. 17. t. 1. f. 3.) leaves 3 in a whorl, connately perfoliate; fruit obovately subglabose, glabrous. $\frac{3}{2}$ G. Native of the Cape of Good Hope. Nénax aeroësa, Gaertn. fruct. t. 32. f. 7. Young branches reddish. Leaves linear, subtriquetrous, glabrous, serrately ciliated on the margin and keel, 3-6 lines long, and $\frac{1}{2}$ to 1 broad. Flowers axillary, verticillate.

**Glabrous Ambriaria.** Shrub $\frac{1}{2}$ to $\frac{3}{4}$ foot.

Cult. See *Phyllis*, p. 655. for culture and propagation.

**Tribe XII.**

**STELLATAE.** (from stellatus, starry; the leaves and stipulas form whorls, resembling the rays of a star.) Ray, syn. p. 223. Cham. et Schlecht. in Linnaea. 3. p. 220. D. C. prod. 4. p. 580.—Aparnnee, Link, (1809).—Galea, Kunth, nov. gen. amer. (1818) 3. p. 255.—Asperuleae, A. Rich. mem. soc. hist. nat. Par, (1850) 5. p. 126. Flowers hermaphrodite, rarely of different sexes. Corolla rotate or funnel-shaped; lobes valvate in activation. Styles 2, almost distinct from the base, or more or less combined in one. Stigmas capitate. Fruit constantly of 2 indehiscent 1-seeded mericarps. Seeds hardly distinct, from the pericarp and calyx. Albumen horny.—Usually herbs, rarely small shrubs. Leaves opposite, bearing each a bud in the axis, furnished with 1-2 or 3 leaf-formed stipulas between the leaves on both sides, which are destitute of buds, and form whorles along with them. Roots usually red, furnishing a red dye, as the madder.—The leaves are only to be distinguished from the stipulas in having buds in their axis.


**Linn. syst. Tetrándria, Monogynia.** Calyx with an ovate tube, and a 4-6-toothed permanent limb. Corolla funnel-shaped, with a terete tube, and a 4-lobed limb. Stamens 4. Style 1, 2-lobed at the apex; stigma capitellate. Fruit dry, crowned by the calyx, divisible into two mericarps; mericarps 1-seeded, indehiscent, flat on one side, and convex on the other.—An annual herb, native of Europe. Leaves opposite, with 1-2 stipulas on each side, ovate, obtuse, scabrous, forming whorles. Flowers small, red, capitate, almost sessile, girdled or involutely by the uppermost whorl of leaves.

1 S. **Arbyes** (Lin. spec. p. 149.) O. H. Native of Europe and Tauria, very common in fields in sandy soil; plentiful in many parts of Britain in fallow fields and among corn. Fl. dan. t. 439. Curt. lond. 5. t. 13. Smith, engl. bot. t. 891. Schkuhr, handb. t. 22.—Barrel, icon. t. 541. Root with many reddish brown fibres. The whole plant rough and hairy. Leaves rough along the edges and keel, 4-6 in a whorl.

**Corn Field-madder.** Fl. April, Sept. Britain. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ ft.

N. B. **Sherárda fruticósa** (Lin. spec. 149.) stem shrubby; leaves 4 in a whorl, equal; flowers axillary. $\frac{3}{2}$ G. Native of the island of Ascension. Stipulas very short, subulate, interfollicous. Corolla white. Fruit unknown. This plant appears to be intermediate between *Diódia* and *Spermáceae.**

Cult. The seeds only require to be sown in the open ground in a dry situation.


**Linn. syst. Tetrándria, Monogynia.** Calyx with an ovate didymous tube, and a very short 4-toothed deciduous or obsolete limb. Corolla funnel-shaped, rarely campanulate, 4-cleft, rarely 3-cleft. Styles 2, joined together at the base, and nearly to the apex. Fruit didymous, not crowned by the calyx, dry, or hardly fleshy; mericarps easily separated, indehiscent, 1-seeded,—Herbs, rarely small shrubs. Stems and branches usually teregal. Leaves opposite, with 1-2-3 stipulas on each side; they are therefore called 4 to 8 in a whorl, but between the uppermost leaves there are no stipulas. Flowers terminal and axillary, in fascicles.

§ 1. **Sherárdaíá** (this section only contains plants with the habit of *Sherárdaïa*). D. C. prod. 4. p. 581. **Annual plants.**

**Corollas tubularly funnel-shaped.**

1 A. **Arbyés** (Lin. spec. p. 149.) plant erect, smoothish; leaves 6-10 in a whorl, lanceolate-linear, a little ciliated; lower ones obovate: floral ones ciliated with long hairs; coryumbs fascicled, terminal, many flowered; flowers sessile; fruit glabrous. O. H. Native of Europe and Caucasus, in fields and arid stony places. A. coréula, Dand. pempt. p. 385. Lob. icon. t. 801. f. 2. A. cílìàta, Mnœch. mæth. p. 484. A. débía, Willd. her. ex Spreng. Roots yellow. Under surface of leaves whitish from adpressed hairs. This differs from all the other species of *Aspérala* in the flowers being blue. It differs from *Sherárdaïa* in the capsule not being crowned by the calyx, in the blunter leaves, and in the floral leaves being ciliated. Anthers yellow.

**Cornfield Woodroof.** Fl. July. Clt. 1596. Pl. $\frac{1}{2}$ to 1 foot.

2 A. **Cilla's** (D. C. prod. 4. p. 582.) stems ascending, angular, glabrous; leaves 6-9 in a whorl, lanceolate-linear, acute, and are as well as the bracteas, serrated by stiff cilia; flowers almost sessile, disposed in a terminal subumbellate corymb, pendant; style exserted.—Native of Persia, where it was collected by Geimlein. Corollas glabrous, 5-6 lines long. Stamens 5.

**Ciliated-leaved Woodroof.** Pl. ascending.

3 A. **Arbyés** (Gay, in lit. 1829. ex D. C. prod. 4. p. 582.) stems erect, simple at the base, branched at the apex, glabrous; leaves glabrous, subulate, filiform, equal in length to the internodes: cauline ones 10-16 in a whorl, and the rameal ones 2-6 in a whorl; pedicels solitary, almost axillary; corollas small, downy outside, trifid; fruit obovate, clothed with very short down. O. H. Native of the north of Persia. Stem very smooth, white, 7-10 inches high. Leaves an inch long, searcor. Corolla greenish-white, with a slender terete tube, and oblong awnless lobes. Stamens 3.

**Hairy Woodroof.** Pl. $\frac{1}{2}$ to 1 foot.

§ 2. **Cynadáceæ** (this section agrees with *A. cynadáceæ* in the corollas being funnel-shaped). D. C. prod. 4. p. 582. **Plants perennial.**

**Corollas tubularly funnel-shaped.**

4 A. **Taurína** (Lin. spec. 150.) plant smoothish, erect; leaves 4 in a whorl, ovate-lanceolate, 3-nerved, with finely ciliated margins; coryumbs pedunculate, axillary, fasciculately umbellate, involucrately; bracteas ciliated; fruit glabrous, and rather scabrous. O. H. Native of Dauphiny, Piedmont, Switzerland, Carniola, Italy, &c. on hills in shady places. A. triérwa, Lam. fl. fr. 3. p. 376. Gallíum Taurinum, Scop. carn. no. 148.—Lob. icon. t. 800. f. 1.—Moris, hist. sect. 9. t. 21. f. 1.—Hall. helv. no. 732. Leaves broad. Corolla white, elongated. Anthers violaceous, exserted.

**Bull Woodroof.** Fl. April, July. Clt. 1739. Pl. 1 foot.

5 A. **Leviga'ta** (Lin. mant. p. 38.) plant glabrous, ascending; leaves 4 in a whorl, elliptic, nervèd, with finely scabrous margins; cymes corymbose, pedunculate, axillary or nearly terminal; corolla with a short tube; fruit glabrous, scabrous from elevated
Rubiaceae. CCXIII. Asperula.


6 A. hexaphylla (All. ped. no. 48. t. 77. f. 3.) plant ascending, glabrous; leaves 6 in a whorl, linear, spreading, acute, with revolute scabrous margins; cymes terminal; flowers aggregate, umbelate; bracteas glabrous, acute, shorter than the flowers. 2. H. Native of Piedmont, on the lower Alps about Tende and Saorgio. A. Allioni, Baumg. enum. trans. 1. p. 80. Corolla purple outside, but white within.

Var. β, rigidula (D. C. prod. 4. p. 582.) leaves stiffer and blunter than those of the species, and the floral ones are obovate. 2. H. Native of Sicily, in the fissures of calcareous rocks by the sea side. A. hexaphylla, Guss. prod. fl. sic. 1. p. 166. There are glabrous and downy variations of this plant.

Six-leaved Woodroof. Pl. 3/2 foot.

7 A. cracca (Meyer, ver. plf. 52.) plant perennial, smooth, glabrous; stems filiform, much branched, diffuse; leaves 4 in a whorl, equal, elliptic, bluntish, with rather scabrous margins: upper ones opposite; umbel terminal, few-flowered; corolla 4-5-cleft, almost glabrous, with obtuse segments; style semidis; mericarps smooth, glabrous. 2. H. Native of Caucasus, in alpine places at the river Malka.

Slender Woodroof. Pl. diffuse.

8 A. hybrida (Ramond, bull. phil. no. 41. p. 131. t. 9. f. 1. 2-3.) plant tufted, erect, glabrous; leaves 6 in a whorl, linear, acute, hairy, longer than the internodes; flowers aggregate umbelate, terminal, sessile, exceeding the bracteas; fruit glabrous. 2. H. Native of the central Pyrenees, on the higher ranges on dry banks. A. nov. spec. St. Amans, trav. ppyr. 194. Corollas white, purplish outside. In cultivation the plant becomes smooth, and is then referrible to A. hexaphylla.


9 A. trinervia (Lin. spec. 150.) plant erect, glabrous; leaves linear: lower ones 6 in a whorl: middle ones 4, and the uppermost ones opposite; floral leaves ovate; flowers usually triphid. 2. H. Native of Europe, on hills in arid stony places. A. rubella β, Lam. fl. fr. 8. p. 375. Gállium tincinòrium, Scop. carn. no. 149.—Tabern. icon. t. 733. f. 2. Roots large, creeping, reddish, and are used in Gothland instead of snedder for dyeing red. Plant procumbent, unless supported. Stem 1-2 feet long, purplish. Flowers usually by threes. Corollas white, reddish on the outside. Very like A. cynánchica.

Dyers' Woodroof. Fl. June, July. Cll. 1764. Pl. 1 to 2 feet.

10 A. cynánchica (Lin. spec. p. 151.) plant glabrous, erectish; leaves 4 in a whorl, linear: lower ones small, oblong, upper ones opposite; floral ones lanceolate-linear, acuminate awned; flowers terminal, quadrifid; fruit granulated. 2. H. Native of Europe, in dry gravelly places; abundant in many parts of England on chalky downes. Smith, engl. bot. t. 33. Berg. phyt. t. 81. Rubiá cynánchica, J. Bauh. hist. 3. p. 723. with a figure. Asp. rubéola a, Lam. fl. fr. 3. p. 375. A. tinctória var. β, Lam. dict. 1. p. 298. Gállium cynánchicum, Scop. carn. no. 147. Herb variable in habit. Stems prostrate, dichotomously branched. The flowers grow on erect branches, forming a fastigiate corymb, white or blush-coloured, elegantly marked with red lines, and sometimes they are pure white. Dalechamp seems to be the chief authority for the reputation this plant formerly acquired in the cure of quinines. He says it should be applied externally, as well as taken internally, but it is now entirely out of use.

Var. β, heterophylla (D. C. prod. 4. p. 583.) decumbent;


Var. δ, elongáta (Stev. in litt. ex D. C. prod. 4. p. 583.) plant elongated, erect; leaves linear, shorter than the internodes. 2. H. Native of Tauria and Caucasus. A. cynánchica, Bieb. fl. taur.


11 A. supína (Bieb. fl. taur. 1. p. 101.) glabrous; stem much branched at the base, procumbent; leaves 4 in a whorl, linear, acute; lower ones imbricately crowded; peduncles 5-flowered, axillary, and terminal; rather panicked; corolla with a terete tube, and 4 oblong lobes; fruit glabrous. 2. H. Native of Tauria and Caucasus, in the fissures of calcareous rocks, and in gravelly places. A. cynánchica β, Meyer, ver. plf. p. 406. Very nearly allied to A. cynánchica, but the flowers are white, not as in it, blush-coloured. Internodes of the stem short.


12 A. longifílora (Waldst. et Kit. pl. rarr. hung. 2. t. 150) stems numerous from the same neck, erectish, glabrous; leaves 4 in a whorl, linear: lower ones small, obovate; upper ones opposite; fascicles of flowers terminal, pedunculately; bracteas small, subtulate; tube of corolla elongated; fruit glabrous, smooth. 2. H. Native of Croatia, Carniola, and Carinthia, in mountainous places, and on rocks. A. suávélens, Schrad. in litt. 1815. Corolla whitish, yellowish inside, and reddish outside. Stems weak.


13 A. brevífílora (Vent. hort. cels. p. 65. t. 65.) plant glabrous, decumbent; leaves 4 in a whorl, very short, distant: uppermost ones opposite; flowers axillary, solitary on short pedicels, and in terminal fascicles; corolla 4-cleft; style bipartite to the base. 2. H. Native of Caramania, near Çydrine on mountains. Stem much branched. Corollas at first yellowish-green, but at length becoming purplish.


14 A. luťeá (Smith, fl. græc. t. 120.) stems erect; leaves 4 in a whorl, linear, glabrous, mucronate; flowers in fascicles, downy, awned. 2. H. Native of Mount Parnassus. Rubéola Crética saxátílis frutescens flore luteo, Tourn. cor. p. 5. Flowers yellow. Fascicles of flowers spicate.

Yellow-flowered Woodroof. Pl. 1 foot.

15 A. arista'á (Lin. fil. suppl. 120.) plant erect, glabrous; leaves 4 in a whorl, linear, acute; upper ones opposite; the floral ones like the rest, but smaller; flowers in terminal fascicles; lobes of corolla bluntly awned. 2. H. Native of the south of Europe, Sicily, &c. Flowers usually by threes, pale yellow.


16 A. montána (Willd. emend. p. 151.) glabrous; stem flácid; leaves linear; lower ones 6 in a whorl: middle ones 4, upper ones opposite; floral leaves linear; flowers in fascicles; corollas 4-cleft, scabrous externally. 2. H. Native of Hun-
gamy, on hills in woods. Link, enum. 1. p. 134. Corolla blush.


17 A. Hirsuta (Desf. fl. atl. 1. p. 127.) plant erect or ascending; leaves 6 in a whorl, linear, acute, with revolute margins; lower ones and tops of stems glabrous; flowers in fascicled umbels, rising from the tops of the stem or branches; bractees hardly exceeding the ovaries; fruit glabrous. 2. H. Native of Algiers and Algarves, on chalky and sandy hills. Ruboela Lusitanica, &c. Tourn. inst. p. 130. A. repens, Brot. prot. phys. lus. 1. no. 10. t. 10. A. Algérica, Pers. ench. 1. p. 124. Rábia repens, &c. Gris. ir. no. 1244. Stem hairy at bottom. Leaves glaucous. Flowers subcapitate, red. In cultivation this plant becomes smooth.


18 A. Tomentosa (Ten. prod. xii. fl. neap. t. 9.) plant ascending or diffuse, clothed with velvety tomentum; leaves 4 in a whorl, linear, with revolute margins; lower ones obovate; flowers terminal or axillary, 8-10 in a fascicle; bractees rather shorter than the flowers. 2. H. Native of Goats' Island, near Naples, in arid places. Herb branched from the base. Stem tetragonal. Stipular leaves the longest. Tube of corolla longish. Corolla red. A. crus-fimbria, Lin. mant. p. 37. does not seem to differ from the present plant. Perhaps A. scabra, Link, enum. 1. p. 134. is also the same.


19 A. Incana (Smith, fl. greec. t. 119.) stems villous at the base, and smooth at top; leaves 6 in a whorl, linear, hoary; flowers downy, in terminal fascicles. 2. H. Native of Candia, on the Spaccotic mountains. Flowers pale red.

Hoary Woodroof. Pl. ½ to 3/16 foot.

20 A. Arcadinensis (Sims, bot. mag. t. 2446.) plant hoary, decumbent; leaves 6 in a whorl, oblong-ovate, acute, with revolute edges; flowers terminal and axillary, aggregate, sessile; style bifid at top. 2. F. Native of Arcadia, on Mount Tyria. A small hoary plant, with rose-coloured flowers. Gálum Graecum, Hort.


21 A. de'bullis (Led. hort. dorp. suppl. 1824. p. 2.) plant hispid from pili; leaves 6 in a whorl: upper 4 in a whorl, linear-lanceolate, scabrous above, and keel smooth; umbels lateral, pedunculate; 3-flowered; corolla funnel-shaped; fruit granular. 2. H. Native of Tauria, near Bachtischariar.

Weak Woodroof. Pl. ½ foot.

22 A. Xiridia (Smith, fl. greec. t. 124.) glabrous; stems diffuse, densely tufted, as well as the leaves; leaves 4 in a whorl, shining, glaucescent; lower ones oval, the rest linear, acute, awned, revolute; fascicles terminal, 3-4-flowered, length of leaves; lobes of corolla awned; tube terete, wide; fruit glabrous, rather rugose. 2. H. Native of Sicily, on rocky and gravelly mountains, and on Mount Olympus, in Bithynia. Guss. prod. fl. sic. 1. p. 168. Flowers purplish. Very like A. hexaphillum.

Nitid Woodroof. Pl. tufted, ½ foot.

23 A. scabra (Presl. del. prag. p. 124. but not of Link.) stem scabrous, diffused, kneed; leaves 4 in a whorl: lower ones oblong downy: upper ones glabrous, linear, unequal, opposite, small, awned; flowers in fascicles; corollas scabrous, with the

lobes mucronate; style bipartite to the base. 2. H. Native of Sicily, on dry mountains; of Spain, in arid places; and of Portugal, on the banks of the Tagus and Douro. Guss. prod. fl. sic. 1. p. 167. A. rigida, Dufour, ann. gen. sc. phys. 7. p. 295. A. macrolepis, Link. fl. port. 2. p. 41. t. 84. Stems exactly quadrangular. Flowers purplish white. Habit of A. longiflora, but differs from it in the lower leaves and flowers being downy.

Scabrous Woodroof. Pl. 1 to 2 feet.

24 A. Alpina (Bieb. fl. taur. suppl. p. 103.) the whole plant, as well as the corollas and ovaries are downy; stems procumbent, much branched, tetragonali; leaves 4 in a whorl, linear, acute; upper ones nearly equal, spreading; cymes terminal, crowded, 5-7-flowered; lobes of corolla 4. 2. H. Native of Eastern Caucasus, on the Alps. A. cynanchica, var. Stev. in mem. soc. mosc. 3. p. 253. Meyer, verz. pl. p. 406. Flowers white, or tinged with red. Leaves shorter and broader than in A. cynanchica, and the lower ones blunter.


25 A. cretica (Willd. in Roem. et Schultes, syst. 3. p. 529.) stems tufted, prostrate; leaves 6 in a whorl, lanceolate; the whorles so close as to be imbricated; flowers terminal, aggregate. 2. H. Native of Siberia, in alpine places.

Crassulaceous Woodroof. Pl. prostrate.

26 A. littoralis (Smith, fl. greec. t. 122.) stem downy; leaves linear, 4 in a whorl, scabrous on the margins and stem (almost hoary, according to D'Urville): floral ones opposite; flowers quadripetall, pilose; fruit hispid. 2. H. Native on the shores of the Euxine Sea, on hills. Flowers pale red. Fascicles of flowers disposed in terminal panicles.

Sca-shore Woodroof. Pl. procumbent.

27 A. neglecta (Guss. pl. rar. 69. t. 13. f. 1.) stems numerous, hairy, ascending; leaves 4 in a whorl, hairy, acute, longer than the internodes: lower ones obtuse; flowers in terminal fascicles; mericarps globose, hispid. 2. H. Native of Abruzzo and Sardinia, in alpine places. Corolla white inside, and reddish outside, and downy. Bracteae ovate. Said to be allied to A. littoralis.

Neglected Woodroof. Pl. decumbent.

28 A. nitens (Guss. pl. rar. 70. t. 13. f. 2.) plant smooth; stems tufted, decumbent; leaves 4 in a whorl, awned, longer than the internodes; shining, quite glabrous; lower ones the broadest; flowers in terminal fascicles; lobes of corolla awned; mericarps tubercularly muricate. 2. H. Native of Abruzzo, in arid, alpine situations. Flowers white inside, and purplish outside. Very like A. neglecta, and probably only a variety of it.

Shining Woodroof. Pl. deciduous.

29 A. albida (Sibth. et Smith, fl. greec. t. 121.) stems diffuse, downy; leaves linear, 4 in a whorl, superior ones opposite; flowers scattered; fruit glabrous. 2. H. Native of Candia, on hills and in fields, Roem. et Schultes, syst. 3. p. 270. exclusive of the syn. of Lois. Leaves rather scabrous. Flowers pale red, disposed in terminal and lateral few-flowered fascicles.

Stiff Woodroof. Pl. ½ to 1 foot.

30 A. suberoba (Smith, fl. greec. t. 129.) stems tufted, ascending; root corky; leaves 4 in a whorl, linear, rather hoary; lobes of the corolla awned. 2. H. Native of Greece, on high rocks. Stems downy. Flowers rose-coloured, disposed in subsipicate fascicles.

Corky-rooted Woodroof. Pl. ½ to 3/16 foot.


31 A. longifolia (Smith, fl. greec. t. 118.) stems smooth;

32 A. odorata (Dodd. pempt. p. 355.) plant glabrous, erect, or ascending; stems simple; leaves 8 in a whorl, lanceolate, smooth, with serrately scabrous edges; corollas terminal, pedunculate; fruit hispid. 2. H. Native of Europe, Siberia, and Caucasus, in shady places and woods; plentiful in Britain. Od. fl. d. t. 562. Lam. ill. t. 61. Mill. fig. t. 55. Smith, eng. bot. t. 755. Blackw. t. 60. Galium odoratum, Scop. carn. no. 158. Root creeping a little below the surface of the soil. Stems tetragonal. Corollas usually trifid, each division bearing about 4 flowers. Flowers snowy white. The plant is without scent when fresh, but when dried diffuses an odour like that of vernal grass. It is said to give a gratifying flavour to wine, and when kept among clothes, not only to impart an agreeable perfume to them, but to preserve them from insects. Turner calls the plant Wood-rose, or Wood-rowel. Gerard, Woodroo, Woodrowell, and Woodrooffe; and Parkinson, Woodroof. In modern times it is called Woodroof, or Woodruff. These names are derived from the place of its natural growth, in woods, and from the whorls, ruffs, or rows of leaves.

Sweet-scented or common Woodroof. Fl. May, June, Britain. Pl. ½ to ¾ foot.

33 A. aparine (Bieb. fl. taur. p. 102. and suppl. 105. Bess. fl. gall. 1. p. 114.) branches diffuse, straggling, with scabrous angles; leaves 6-8 in a whorl, oblong or lanceolate, scabrous, having the keel and margins beset with small retrograde prickles; peduncles axillary, branched, disposed in a loose fasciculate panicle; corolla short, tubular; fruit granular. 2. H. Native of Galicia, Tauria, Caucasus, Volhynia, Russia at Moscow, Siberia, and Greece, in boggy, grassy places. Rchb. pl. crit. 1. t. 93. f. 198. Galium uliginosum, Pall. ind. taur. Asp. rivialis, Sibth. and Smith, fl. græc. t. 117. Angles of stems scabrous from retrograde prickles. Flowers white, campanulately funnel-shaped. Very much the habit of Galium aparine, but stronger. Herb scabrous all over.


34 A. panicula (Bunge in Ledeb. fl. alt. ill. t. 301. fl. alt. 1. p. 140.) stems tetragonal, glabrous; lower leaves 4 in a whorl: the rest 6, oblong-lanceolate, acuminate, with scabrous margins; flowers terminal and axillary, panicled; panicle diffuse; corollas campaspanule; fruit smooth. 2. H. Native of Siberia, in grassy parts of mountains at the rivers Tscharysch and Sentelek, and in sandy places at the river Katunja. Leaves rather glaucous beneath. Corollas white, with obtuse segments.

Panicled-flowered Woodroof. Pl. 1 foot.

35 A. subvelutina (D. C. prod. 4. p. 585.) stems many, branched, erect, velvety from small down; leaves 5-8 in a whorl, broad-linear, obtuse, rather velvety; flowers verticillate, and capitate at the tops of the branches; floral leaves small; corollas campaspanule; fruit glabrous. 2. H. Native of Persia, on Mount Elwend, where it was collected by Olivier and Bruquiére. Old stems permanent, white, and glabrous. Leaves 6 lines long, and a line broad.

Rather-velvety Woodroof. Pl. ½ to 1 foot.

36 A. calloides (Bieb. fl. taur. 1. p. 101. and suppl. p. 104.) plant glabrous; stems terete, ascending; leaves 6-8 in a whorl, linear, glaucous; peduncles dichotomous, terminal, corolline; corollas campaspanule; fruit glabrous, smooth. 2. H. Native of Middle and South Europe, even to Tauria and Caucasus, in stony places. Galium glaucum, and probably Galium montanum, var. Lin. spec. 156. Asp. glauca, Bess. Galium Haleri, Sut. fl. helv. t. 60. Galium campanulatum, Vill. dauph. 2. p. 326. Galium involdiflorum, Clairv. var. p. 41. Flowers white. Plant glaucous.—This is a very variable plant, and is intermediate between Galium and Aspērula. Stems, either terete or bluntly sub-tetragonal, erectish or diffuse, smooth or scabrous at the base. Leaves with revolute or flat margins, obtuse or mucronulate.—See Jacq. fl. austr. t. 54. Vill. dauph. t. 7. Bosc. mus. 2. t. 116.

† Species not sufficiently known.

38 A. Tournefortii (Sieb. ex Spreng. syst. 1. p. 395.) stems suffruticosae; leaves obvolute-oblong, quite glabrous, glaucous; whorles of flowers approximate; flowers sub-fasciculate, hispid. 2. H. Native of Candia.

Tournefort's Woodroof. Pl. suffruticosae.

39 A. umbellata (Willd. herb. ex D. C. prod. 4. p. 586.) 2. H. Native of Hungary. This is the same as A. hexapylalla, ex Spreng. syst. but according to Stevens, obs. ms. it differs in the flowers being shorter.

Umbellate-flowered Woodroof. Pl.

40 A. involucrata (Bergr. et Wahl. in isis. 1828. vol. 2. p. 971.) leaves 4 in a whorl, obvolute, elongated, obtuse, glabrous; stems decumbent; peduncles lateral and terminal; flowers umbellate; corolla sub-fasciculate; fruit glabrous. 2. H. Native of the Levant, among bushes on the sides of hills. Leaves like those of Galium palustre.

Involucrated Woodroof. Pl. decumbent.

Cult. Most of the species of Woodroof are very pretty when in flower, and are therefore well adapted for decorating flower-borders or rock-work. They will grow in any common garden-soil, and are easily increased by parting at the root. A. odorata will thrive under the shade of trees, where hardly any thing else will grow. The seeds of annual species only require to be sown where the plants are intended to remain.


Lin. syst. Tetra-Pentandria, Monogynia. Calyx with an ovate tube, and a hardly distinct limb. Corolla tubular, elongated, funnel-shaped, 4-5 lobed; lobes usually drawn out into a slender, inflexed appendage each. Stamens 4-5, inclosed; anthers linear. Style 2-lobed at the apex, shorter than the tube of the corolla. Fruit divisible into 2 parts, but not crowned by
the calyx; mericarps semi-ovate or oblong, indeliscent.—Herbs, sometimes suffrutescence at the base, but usually annual. Leaves truly opposite, furnished with from 1 to 3 stipulas on each side. Flowers furnished with 3 bracteas each, the exterior bractea representing a calyce leaf, and the 2 lateral ones opposite, all longer than the ovary, and appearing like a calyx. Spikes sometimes elongated and continuous, sometimes capitmate, and sometimes interrupted from being formed of pedunculate fascicles of flowers.

§ 1. Flowers disposed in continuous spikes.


Var. ß, monstáchya, (D. C. fl. fr. no. 3345.) stem simple, bearing only one spike at the apex.

Var. ð, malarónata, (Roth, cat. 1. p. 27.) leaves 4 in a whorl, mucronate.


3. C. glaúca (A. Rich. in mem. soc. hist. nat. par. 5. p. 131.) plant suffruticose at the base, erect, glaucous; leaves 6 in a whorl, linear, with revolute edges; spikes slender, pedunculate, somewhat interrupted at the base; bracteas ciliated; flowers pentamorous. Þ. H. Native of Persia.

Var. a, Bruguierí (D. C. prod. 4. p. 587.) leaves rough; bracteas and brachteoes rather velvety from fine down. Þ. H. Native of Persia, between Kermanchá and Amadan, where it was collected by Olivier and Bruguier.

Var. ß, Michánzii (D. C. l. c.) stem glabrous; leaves smoothish; bracteas a little smaller. Þ. H. Native of Persia, where it was collected by Michaux.

Glaucous Crosswort. Pl. 1 foot.

4. C. ciliáta (Lam. dict. 2. p. 217.) plant diffuse; leaves 4 in a whorl, or opposite; spikes hardly interrupted at the base; bracteas ciliated, unequal, rather loose; flowers tetramorous; fruit beset with blunt tubercles. Ó. H. Native of the Levant, about Aleppo, where it was collected by Michaux. C. diffusa, Roth, in Úst. neu. ann. 4. p. 40. cat. 1. p. 26. C. tuberculosa, VOL. III.


5. C. Pá'tana (Lin. spec. p. 602.) erect; branches spreading; leaves 6 in a whorl, linear, rather scabrous; flowers 1-2 in the axis of the bractea, on short peticels, pentamorous; fruit smoothish. Ó. H. Native of Spain, on rocks at Aranjuez, Tulela, and Navarre, and in the kingdom of Valencia. Loefl. itia. p. 68. C. pentánta, Dufour, in Rœm. et Schultes, syst. 3. p. 532. Corolla yellowish.


6. C. suave'veoles (Meycr, verz. pfl. p. 406.) plant perennial, glabrous; stem herbaceous, erect, branched; leaves linear, mucronate, with prickly, revolute edges, 8 in a whorl, but the upper ones are 6 in a whorl; flowers opposite, disposed in dense spikes: floral leaves and bracteas lanceolate, ciliated, a little shorter than the corollas, which are glabrous, and 5-cleft; stamens inclosed; mericarps glabrous, smooth. ß. H. Native of Caucasus, in dry, stony places on the Talusch mountains.

Sweet-scented Crosswort. Pl. 1 foot.

7. C. Égépy'aca (Lin. mant. p. 38.) plant diffuse; leaves 4 in a whorl, linear, with revolute edges, glabrous above, and on the margins: lower ones ovate; spikes terminal; bracteas lanceolate, with the keel and margins rather scabrous. Ó. H. Native about Alexandria, in Egypt. C. herbéaca, Forik fl. egypt. p. 30. Flowers pentamorous, pale yellow, awned.


8. C. Gilá'sca (Triin. in mem. act. petersb. 1818. p. 493. t. 12.) stems erectish, branched; leaves 4 in a whorl, linear, mucronate, with prickly revolute edges; flowers remotely spicate; bracteas and floral leaves ovate, ciliated, 4 times shorter than the corolla, which is glabrous. ß. H. Native of Persia, in the province of Ghilan, on the mountains; and of Caucasus, in dry, stony places on the Talusch mountains. Root slender, creeping. Flowers pentamorous. Lobes of the corolla mucronate. Fruit and stamens glabrous. Style inclosed.

Ghilan Crosswort. Pl. procumbent.

§ 2. Flowers capitulate.


10. C. capità'ta (Labill. pl. sur. dec. 1. p. 12. t. 5.) plant suffruticose, procumbent, branched, glaucous, glabrous; leaves 6 in a whorl, almost linear; spikes capitate, ovate; bracteas membranous, lanceolate, longer than the leaves, trifid, girding 2 flowers each; corollas 5-parted. ß. F. Native on the top of Mount Lebanon. Corolla blackish in the dried state. Bracteas trifid. Brachteoes linear.

Capitate-flowered Crosswort. Shrub procumbent.

11. C. stylíosa (Triin. mem. act. petersb. 1818. p. 485. no. 3. t. 11. ex Spreng. neu. entl. 1. p. 98.) plant procumbent; leaves 8-9 in a whorl, and are, as well as the stems, hispid; heads terminal, pedunculate; flowers pentamorous; style clavate, much exerted, bifid at the apex.—Native of Persia, in the province of Ghilan, among rocks; and of Caucasus, among bushes in the province of Lenkeran, from the Caspian Sea even to the Talusch 4 N.
mountains. Laxmannia fasciculata, S. G. Gmel. Said to be nearly allied to C. mollugo-oides.

Long-styled Crosswort. Pl. procumbent.


§ 3. Flowers in fascicles; fascicles opposite, on short peduncles; the whole forming an interrupted raceme.

13 C. mollugo-oides (Bieb. cent. 2. t. 65. ex fl. taur. 1. p. 106. suppl. 110.) erect; leaves 8-12 in a whorl; linear-lanceolate, with revolute, scabrous edges, and a villous keel; fascicles of flowers opposite, disposed in an interrupted spike; bracteas ovate-lanceolate, acuminate, villous, much shorter than the flowers; fruit glabrous, smoothish; corollas pentamers. H. Native of Caucasus, in subalpine places, Armenia, and Hungary. C. anoma, Balb. herb. taur. Aespélula tubiflora, Hortul.—Buxb. cent. 2. t. 30. f. 1. Corollas greenish yellow. Stamens 5. Mericarps nearly globose. Angles of the stem scabrous.


14 C. aspera (Bieb. fl. taur. 1. p. 107.) plant procumbent or ascending; leaves usually 6 in a whorl, linear, blunting, with revolute edges, and are, as well as the stem, scabrous; fascicles of flowers opposite, pedunculate, disposed in interrupted spikes; bracteas ovate, acute, ciliated, much shorter than the flowers; flowers pentamers; fruit glabrous. H. Native of Caucasus, about Tiflis. C. prostrata, Adams. in Web. et Mohr. cat. 1. p. 46. Flowers greenish yellow.

Rough Crosswort. Pl. procumbent.


† Plants referred to the genus which ought to be excluded from it.

16 C. ? americana (Mill. dict. no. 5.) stem erect, villous; leaves opposite, linear-lanceolate, hairy; flowers solitary, axillary. H. S. Native of Vera Cruz. Flowers pale blue. Fruit didymous. Probably a species of Spermacoce.


17 C. ? hispida (Mill. dict. no. 4.) stem hispid; leaves opposite, lanceolate, hairy; flowers umbellate, terminal. H. S. Native of Vera Cruz. Stems quadrangular, rough, prickly. Flowers blue, tetramers. Fruit didymous.

Hispid Crosswort. Shrub 2 feet.

Cult. The seeds of annual species should be sown in the open ground where the plants are intended to remain. The perennial, herbaceous, and shrubby species being rather tender, should be grown in pots, in a mixture of peat, sand, and a little loam; and they will be easily increased by dividing at the root, or by cuttings.

CCXV. RU'BIA (from ruber, red; in allusion to the red colour of the roots). Tourn. inst. 115. t. 38. Lin. gen. no. 127.
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6 R. angustissima (Wall. cat. no. 6207.) stems quadrangular, almost winged, serrated from retrograde prickles; leaves ½ in a whorl, long, linear, with scabrous edges, sessile; peduncles dichotomously divided. 2. S. Native of the Burmese Empire, on Mount Taong Dong, near Ava. Root like that of R. Mun-fista.

Very-narrow-leaved Madder. Pl. straggling.

7 R. chardeyi (Wall. cat. no. 6210.) stems quadrangular, angles beset with retrograde, prickly denticulations; leaves 8-10 in a whorl, linear, sessile, scabrous on the margins and keel; corymbs terminal. 2. F. Native of Nipaul.

Chara-leaved Madder. Pl. straggling.

**S. S. Succulentia. Stems shrubby. Leaves on short petioles, oblong or lanceolate.

8 R. fruticosa (Ait. hort. kew. 1. p. 147.) stem shrubby, smooth; leaves 2-6 in a whorl; the uppermost ones opposite, elliptic, on short petioles, having the margins and keel scabrous from prickles; flowers pentamorous; corymbs axillary, short, few-flowered. 2. G. Native of Tenerife, among bushes, Jacc. icon. rar. t. 25. R. fruticosa, and R. Canariensis, Poir. suppl. 2. p. 707. Leaves varying from oval to oblong-lanceolate, with distant retrograde prickles on the margins. Corollas yellowish. Peduncles usually 3-flowered.

Var. β. galoides (D. C. prod. 4. p. 589.) stem shrubby, terete, smooth; leaves 6 in a whorl, petiolate, ovate-lanceolate, having the nerve beneath and the margins furnished with retrograde prickles; corymbs axillary, trichotomous, bibracteate; flowers pentamorous. 2. G. Native of Madras, where it is called Tasaygo. Leaves 7-9 in a whorl, but on the branches only 3 in a whorl. Flowers yellowish. Teeth of calyx not perspicuous, as in many other species of the genus. Very nearly allied to R. fruticosa.

Ecalyculate-flowered Madder. Suppl. 2. p. 705.


9 R. acalycula (Cav. icon. 2. p. 75. t. 195.) stems rather herbaceous, smooth, hexagonal; leaves petiolate, ovate-lanceolate, having the nerve beneath and the margins furnished with retrograde prickles; corymbs axillary, trichotomous, bibracteate; flowers pentamorous. 2. G. Native of Barbary, on the sea-shore near Lacalle. Perhaps a species of Gálum. Flowers white, tetramous.

Swooth Madder. Shrub.

** Tinctoria (from tinctorum, for dyeing; the roots of most of the plants are used for dyeing). D. C. prod. 4. p. 589. Stems herbaceous. Leaves sessile, or on short petioles, never cordate.

11 R. angustifolia (Lin. mant. p. 39.) plant herbaceous; leaves 4 in a whorl, linear, scabrous above, and also along the margins and nerve; angles of stems prickly; corymbs axillary, 3-flowered; lobes of corolla bluntish, apiculate. 2. F. Native of Gibraltar, Portugal, and Balearic Islands. Lam. ill. t. 60. f. 2. Leaves evergreen. Flowers pale yellow. Perhaps this and the 6 following are only variations of R. tinctoria.


13 R. longifolia (Poir. suppl. 2. p. 703. 7.) herbaceous; leaves 4-6 in a whorl, linear-lanceolate, elongated, acuminate, almost sessile, smooth above, but with the margins and nerve scabrous from prickles, as well as the angles of the stem; peduncles trichotomous; lobes of corolla acutish, acuminate, not abruptly cuspidate. 2. H. Native of Corsica and at Mogo-


Long-leaved Madder. Pl. straggling.

13 R. tinctorum (Lin. spec. p. 158.) herbaceous; leaves 4-6 in a whorl, on short petioles, lanceolate, smooth above, scabrous from prickles on the margins and keel, and along the angles of the stem; peduncles axillary, trichotomous; lobes of corolla gradually acuminate, not cuspidate. 2. H. Native of the Levant and south of Europe; and also of Caucasus, on Mount Beschharmark, and plentiful near Dervent, and in the province of Baku; but cultivated in many parts for the sake of its roots. Lam. ill. t. 60. f. 1. Heyne, arzwn. gew. xi. t. 5. Schkuhr. Handb. t. 28. Mill. fig. t. 195. Very-narrow-leaved Madder. Pl. straggling.

13 R. angustissima (Wall. cat. no. 6207.) stems quadrangular, almost winged, serrated from retrograde prickles; leaves ½ in a whorl, long, linear, with scabrous edges, sessile; peduncles dichotomously divided. 2. S. Native of the Burmese Empire, on Mount Taong Dong, near Ava. Root like that of R. Mun-fista.
ground is ploughed over with a shallow furrow, and in the course of the operation the sets are deposited in each furrow, leaning on and pressed against the furrow-slice. This, however, is a bad mode, as there is no opportunity of firming the plants at the roots, and as some of the sets are apt to be buried, and others not sufficiently covered.

The after culture consists in hoeing and weeding, with stirring by pronged hoes, either of the horse or hand kind. Some earth up, but this is unnecessary, and even injurious, as tearing the surface roots.

The Madder crop is taken at the end of the third autumn after planting, and generally in the month of October. By far the best mode is that of trenching over the ground, which not only clears it effectually, but fits it at once for another crop. But where madder has been grown on land prepared by the plough, that implement may be used in removing it. Previously to trenching, the haumn may be removed with an old scythe, and carted to the farmyard, to be used as litter to spread in the straw-yards.

Drying the roots is the next process, which, in very fine seasons, may sometimes be effected on the soil, by simply laying the plants on it as they are taken up; but in most seasons they require to be dried on a kiln, like that used for malt or hops. They are dried till they become brittle, and then packed up in bags for sale to the dyer.

The difference from the root of this plant is different according to the difference of the soil, but mostly from 10 to 15 or 20 hundred weight, where it is suitable to its cultivation.

In judging of the quality of Madder roots, the best is that which, on being broken in two, has a brightish red or purplish appearance, without any yellow cast being exhibited.

The use of the Madder roots is chiefly in dyeing and calico printing. The haumn which accumulates on the surface of the field in the course of 3 years, may be carted to the farm-yard, and fermented along with horse-dung. It has the singular property of dyeing the horns of the animals who eat it of a red colour.

Madder seed in abundance may be collected from the plants in September of the second and third years, but it is never so propagated.—Madder is sometimes blighted, but in general it has but few diseases.

Madder is cultivated in Holland only on the very best soils, and with plenty of manure. At the end of May or April, according as the young plants are large enough to be transplanted, the land must be ploughed in beds of 2 feet, and 3½ feet wide; the beds are then harrowed and raked, and the young suckers of the roots or plants are to be put down in rows, at intervals of a foot or a foot and a half, and at 6 or 8 inches distant in the row. During the entire summer the land should be frequently stirred, and kept free from weeds. In the month of November, when the leaves are faded, the plants are covered with 2 inches of earth, by a plough, having the point of the coulter a little raised or rounded, so as not to injure the young plants. In the following spring, when the young roots are 4 or 5 inches long, they are gathered or torn off, and planted in new beds, in the same manner as above stated; and then, in the month of September or October, after the faded leaves have been removed, the old roots are taken up. The madder thus taken up should be deposited under cover, to protect it from the rain, and after 10 or 12 days, placed in an oven moderately heated. When dried sufficiently it is gently beaten with a flail, to get rid of the clay that may adhere to the plants; and by means of a small wind-mill, is ground and sifted, to separate it from any remaining earth or dirt. It is then replaced in the oven for a short time, and when taken out, is spread upon a hair cloth to cool; after which it is ground and cleaned once more. It is then carried to a bruising mill, and reduced to fine powder, and then packed in casks or barrels for the market.

Var. β, Iberica (Fisch. in litt. ex D.C. prod. 4. p. 589.) leaves on longer petioles, downy on the veins and nerves beneath. 2. H. Native of Iberia. The roots of this variety are said to be better for the purposes of dyeing than those of the species.


Var. β, augustifolia (Guss. prod. fl. sic. 1. p. 183.) stem smoothish; leaves elliptic-oblong or lanceolate. 2. H. Native of Sicily and the south of France.


17 R. splendens (Hoffm. et Link, fl. port. 2. p. 67. t. 85.) herbaceous; leaves 4-6 in a whorl, obversely oblong, acute, having the nerve on both surfaces and margins scabrous from prickles, as well as the angles of the stems; peduncles axillary; lobes of corolla prickly. 2. H. Native of Portugal, in hedges about Lisbon. R. stelliferis, Broth. fl. lus. 1. p. 153. but not of Mill. Flowers yellow, pentameres.


18 R. intricata (Hook. et Arn. in bot. misc. 3. p. 362.) glabrous, smoothish; stems diffuse, herbaceous, divaricately branched, intricate, acutely 4-angled; leaves small, oblong-linear, hardly acute, almost nerveless; branches of panicle divericate; flowers pedunculate, bractless; berries globose.—Native of Chile, among hedges of Cacti at San Isidro.

Intricate-branched Rubia. Pl. diffuse.

19 R. Oliveri (A. Rich. in mem. soc. hist. nat. Par. 5. p. 132.) stems suffruticose, rather hexagonal, scabrous from retrograde prickles or bristles; branches powdery, downy; leaves usually 6 in a whorl, oboval, mucronate at the apex, with hispid margins; peduncles axillary, usually by threes, tripartite, and 3-flowered at the apex; corolla subcampanulate, 5-parted. 2. H. Native of the island of Scio, where it was collected by Oliveri and Bruguére.
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Oliveir’s Madder. Pl. straggling.
20 R. Thunb. bæghi (D. C. prod. 4. p. 590.) plant glabrous in every part; leaves usually 4 in a whorl.—Native of the Cape of Good Hope. R. laevis, Thunb. fl. cap. 151. but not of Poir.
The rest unknown.

Thunberg’s Madder. Pl. straggling.

§ 2. Involucratae (the flowers of the plants contained in this section are involucreted by bracteas). D. C. prod. 4. p. 590.

Peduncles axillary, bearing each 4 bracteas in a whorl, which constitute an involucrum to the flowers. Flowers 1-3, rising from each involucrum, sessile, or pedicellate, usually tetrameros.—Diffuse prostrate plants, all natives of America, which probably should be joined with Galium according to A. Richard.

* Berries glabrous. Leaves 1-nerved.
21 R. Walteri (D. C. prod. 4. p. 590.) stems tetragonal, smooth on the angles, and pilose on the sides; leaves ovate, membranous, rather pilose on both surfaces while young, but having the keel and margins scabrous in the adult state; bracteas ovate, acute; flowers solitary from the involucrum; fruit glabrous, pedicellate. ¥ H. Native of Carolina and Florida, in shady places. R. peregrina, Walt. car. p. 86. but not of Lin. R. Brönn., Michx. fl. bor. amer. 1. p. 81. exclusive of the syn. of Browne. R. Techénis, Rafin. fl. lud. p. 76.? Flowers small, yellow, tetramerons. Fruit blackish.

Walter’s Madder. Pl. straggling.

22 R. Guadaloupe (Spreng. syst. 1. p. 397.) stems tetragonal, rough along the angles at the base; leaves oblong, mucronate, attenuated at the base, having the margins and keel prickly; peduncles axillary, shorter than the leaves, 1-flowered; flower sessile among the bracteas, which are oblong; berries scabrous. ¥ S. Native of Guadaloupe, where it was collected by Badier and Bertero.

Guadaloupe Madder. Pl. straggling.

23 R. Indecora (Cham. et Schlecht. in Linkrea. 3. p. 229.) stems tetragonal, scabrous from pili; leaves oblong, somewhat cuneated, obtuse, mucronate, membranous, remotely pilose on the nerves beneath and margins; peduncles axillary, solitary, opposite, 1-flowered; bracteas lanceolate; ovary pilose; berries egg-shaped, glabrous, sessile within the involucrum. ¥ F. Native of the south of Brazil.

Indecorous Madder. Pl. straggling.

24 R. Chilensis (Mol. chil. 118. ed. gall. p. 330. but not of Wild.) stems smooth, tetragonal while young, but at length becoming terete and erectitious; leaves oblong-linear, mucronate, pilose on the nerves and margins; peduncles axillary, opposite, 1-flowered, a little longer than the leaves, hairy at top, as well as the bracteas. ¥ F. Native of Chili, near Rancagua and Valparaibo, where it was collected by Bertero, who asserts that it is the Rebel of the natives. Nearly allied to R. indecora.

Chili Madder. Pl. straggling.

25 R. Ramosissima (Pohl, in litt. ex D. C. prod. 4. p. 591.) stems tetragonal, rather hairy along the angles; leaves oblong, obtuse, rather cuneated at the base, 1-nerved, rather pilose beneath and glabrous above, and shining; peduncles axillary, length of leaves, 1-flowered; bracteas oval, glabrous; berry sessile, within the involucrum, glabrous. ¥ G. Native of Brazil, where it was collected by Pohl. Herb becoming black on drying.


26 R. Valantiodes (Cham. et Schlecht. in Linkrea. 3. p. 231.) stems tetragonal, pilose along the angles; leaves sessile, ovate, acute, membranous, 3-nerved, pilose on the margins and nerves; peduncles axillary, verticillate, shorter than the leaves, 1-flowered; bracteas ovate-oblong; flower sessile within the involucrum. ¥ F. Native of Brazil. Stem scabrous from the bases of the hairs remaining. Corolla pilose. Berries glabrous. Valanella-like Madder. Pl. straggling.

27 R. Nuda (H. B. et Kuntz, nov. gen. 3. p. 339. t. 280.) stems tetragonal, beset with reflexed hairs along the angles; leaves elliptic, bluntish, with revolute edges, glabrous above and shining, and rather hairy beneath; peduncles axillary, 1-flowered, opposite, twice the length of the leaves; flower sessile, within the involucrum; berries glabrous. ¥ F. Native at the foot of the burning mount Pichincha, near Quito. Allied to R. Waleri.

Nits-leaved Madder. Pl. straggling.

28 R. vitis (Cham. et Schlecht. in Linkrea. 3. p. 230.) glabrous; stems tetragonal, scabrous from retrograde bristles on the angles, and on the nerves and margins of the leaves; leaves oblong, obtuse, hardly attenuated at the base, rather mucronate, membranous; peduncles axillary, verticillate, 3-flowered, length of leaves: the middle flower sessile; bracteas oblong, acute. ¥ F. Native of the south of Brazil. Berries glabrous.

Vile Madder. Pl. straggling.


Ciliated-leaved Madder. Pl. procumbent.

30 R. Monantha (D. C. prod. 4. p. 591.) stems procumbent, much branched, tetragonal, smoothish; leaves oval or ovate-oblong, obtuse, beset with long hairs, hispid above; peduncles axillary, solitary, 1-flowered, bearing each 4 leaves or bracteas just under the flower; flower sessile, within the involucrum; fruit glabrous, smooth. ¥ F. Native of Peru, where it was collected by Haenke. Galium monanthum, Bartl. in herb. Haenke. This species is nearly allied to R. ciliata.

One-flowered Madder. Pl. procumbent.

31 R. Ovatis (D. C. l. c.) stems climbing a little, tetragonal, hairy; leaves 4 in a whorl, oblong-oval, acuminate, equal, at length reflexed; peduncles axillary, 1-flowered, a little shorter than the leaves, bearing 4 oval acute bracteas at top under the flower; fruit glabrous. ¥ F. Native of Peru, among rubbings. Galium ovati, Ruiz et Pav. fl. per. 1. p. 59. Oval-leaved Madder. Pl. climbing.

32 R. Crocea (D. C. l. c.) stems procumbent, branched; branches tetragonal; leaves 4 in a whorl, linear, ciliated, rather scabrous beneath; peduncles axillary, short, 1-flowered, bearing 4 leaves at the apex; fruit glabrous.—Native of Peru, at Tarma and Huancaco, on arid declivities. Galium croceum, Ruiz et Pav. fl. per. p. 126. Flowers 3-4-cleft. Fruit of a reddish copper-colour.

Saffron-coloured-fruited Madder. Pl. procumbent.

33 R. Levigata (D. C. l. c.) plant quite glabrous; stems tufted, much branched, diffuse; leaves 4 in a whorl, ovate-oblong or ovate-lanceolate; peduncles axillary, 1-flowered, bearing 4 leaves at the apex; flower sessile, within the involucrum; fruit glabrous, smooth. ¥ H. Native of Mexico, where it was collected by Haenke. Galium levigatum, Bartl. mss.

Smooth Madder. Pl. diffuse.

34 R.? Corymbosa (D. C. prod. 4. p. 591.) stems creeping, filiform; branches alternate, erect, corymbose dichotomons, tetragonal; leaves 4 in a whorl, sessile, approximate, oblong-lanceolate, rather ciliated, glabrous; peduncles 1-flowered, bearing each 4 bracteas: fruit glabrous.—Native of Peru, on the

Corynabo-flowered Madder. Pl. creeping.

** Berries hairy or scabrous. Leaves 1-nerved.


Under-fruited Madder. Pl. straggling.

36 R. Rëb'lun (Cham. et Schlecht. in Linneaa. 3. p. 289.) the whole plant is scabrous, and clothed with short pilis; stems acutely tetragonal; leaves obovate-elliptic, obtuse, mucronate, rather membranous, with ciliated margins, scabrous from hairs on both surfaces; peduncles axillary, 1-flowered, opposite or verticillate; bracteas broad-lanceolate; flower sessile; berry sessile, globose, rather pilose. Ñ. F. Native of Chili, Brazil, and Caracas. Poep. ex. Ulric. chil. no. 705. Fœill. obs. 3. p. 60, t. 45. R. Chilénis, Willd. spec. 1. p. 604. but not of Mol. The plant is called Rubia in Chili, as well as other species; and the roots are red, and used for dyeing like the common madder.

Rubun Madder. Pl. straggling.

37 R. Richardia'sa (Gill. miss. ex Hook. et Arn. in bot. misc. 3. p. 362.) plant glabrous, scabrous, shining; stems erectish, teretely quadrangular; leaves 4 in a whorl, linear-oblong, acute, 1-nerved, one-half shorter than the internodes; peduncles opposite or in whorls, equal in length to the leaves, bearing 4 bracteas and 3 flowers at the apex; fruit tubercular in the immature state.——Andes of Mendoza.

Richardson's Rubia. Pl. straggling.

38 R. Henke'a'sa (Gill. miss. ex Hook. bot. misc. 3. p. 363.) plant hairy, hoary; stems procumbent, terete; leaves 4 in a whorl, linear, acute, deflexed, one-nerved, broader at the base; peduncles in whorls much longer than the leaves, bearing 3 flowers and 4 bracteas at the apex; fruit tubercular, scabrous. Ñ. F. Native of Chile, about Mendoza.

Henke's Rubia. Pl. procumbent.

39 R. Fu'silla (Gill. miss. ex Hook. et Arn. in bot. misc. 3. p. 363.) plant tufted, glabrous, bristly, shining; stems smooth, terete, furrowed; leaves 4 in a whorl, oblong-linear, mucronate, with smoothish margins; peduncles equal in length to the leaves, bearing 3 flowers and 3 bracteas at the apex; fruit minutely tubercular when immature. Ñ. F. Native of Chile, in the province of San Louis. This has quite the appearance of some states of Gâlîum pâmùmum.

Small Rubia. Pl. straggling.

40 R. Ori'noce'ssa (H. B. et Kunth, nov. gen. amer. 3. p. 239.) stems tetragonal, glabrous, scabrous on the angles; branches pilose; leaves on short petioles, oblong, acute, pilose, one-half shorter than the internodes; peduncles axillary, 1-flowered, solitary; flower almost sessile, within the involucrum; berries pilose. Ñ. F. Native on the banks of the Orinoco, in hot places, and of the south of Brazil, ex Cham. et Schlecht. in Linneaa. 4. p. 228. R. Bröwnei, Spreng. syst. 1. p. 397. Gâlîum paucifórum, Willd. herb.

Orinoco Madder. Pl. straggling.

41 R. Murcon'a'ta (Hook. et Arn. in bot. misc. 3. p. 363.) stems prostrate, glabrous, terete, 4-furrowed, branched; leaves 4 in a whorl, linear-oblong, glabrous, shining, with revolute edges, 3 times shorter than the internodes; common peduncles axillary, longer than the leaves; flowers cyosome. Ñ. F. Native of Chili, about Conception and Tarma; and of Peru, in arid places. Gâlîum leucocarpum, D. C. prod. 4. p. 612. Gâlîum Tarmen, Spreng. syst. p. 27. G. murconatae. Ruiz et Pav. fl. per. 1. p. 66. G. apiculatum, Rœm. et Schultes, syst. 3. p. 222. Fruit milk coloured.

Murconate Madder. Pl. prostrate.

42 R. Inca'na (H. B. et Kunth, nov. gen. amer. 3. p. 338.) stems tetragonal, hispid on the villi; leaves 4 in a whorl, ovoid, short-acuminated, mucronate, with revolute margins, which are as well as the middle nerve hispid from pili; peduncles axillary, 1-flowered, length of leaves; flower sessile, within the involucrum; berries rather pilose. Ñ. F. Native on the Andes about Quindiu, near El Moral. Corolla rather hairy outside.

Hoary Madder. Pl. straggling.

43 R. h'na (H. B. et Kunth, nov. gen. amer. 3. p. 338.) stems tetragonal, hairy; leaves 4 in a whorl, on short petioles, oblong, acute, mucronate, hairy; peduncles axillary, opposite, 1-flowered, hardly shorter than the leaves; flower sessile, within the involucrum; berries scabrous. Ñ. F. Native near the town of Quito.

Hairy Madder. Pl. straggling.

** ** Leaves 3-nerved. Berries glabrous.

44 R. Nôxia (St. Hil. pl. rem. bras. p. 229.) stems tetragonal, beset with retrograde bristles along the angles below, and hairy at top; leaves sessile, elliptic, obtuse, ending in a very short point, 3-nerved, membranous, rather pubescent, scabrous from pili above, and on the nerves beneath; peduncles axillary, solitary, 1-flowered, pilose, bracteas 4, ovate; berries glabrous.——Native of Brazil, in woods in the province of Minas Geraes. Corollas greenish, hardly pilose. Flowers either sessile or pedicellate within the involucrum. Berries white.

Hurtful Madder. Pl. straggling.

45 R. S'tena (Pohl. in litt. ex D. C. prod. 4. p. 593.) stems tetragonal, glabrous, scabrous along the angles from retrograde bristles; leaves sessile, ovate, mucronulate, membranous, 3-nerved, rather scabrous along the margins and nerves, especially beneath, glabrous; peduncles axillary, tetragonal, rather longer than the leaves; bracteas oval, glabrous; berries glabrous, sessile, within the involucrum. Ñ. F. Native of Brazil, where it was collected by Pohl. Nodi of stems scabrous from short crowded hairs. Bracteas greenish-yellow. Berries blackish.

Rough Madder. Pl. straggling.

46 R. Dif'usa (Pohl. in litt. ex D. C. prod. 4. p. 593.) stems tetragonal, hispid; leaves sessile, ovate, acute, membranous, 3-nerved, hispid along the margins and nerves, especially beneath, glabrous; peduncles axillary, 1-flowered, longer than the leaves; bracteas 4, ovate, acute, rather hispid; berry glabrous, sessile within the involucrum. Ñ. F. Native of Brazil, where it was collected by Pohl. Upper leaves smoothish. Peduncles 5-6 lines long. Berries blackish.

Diffuse Madder. Pl. straggling.

§ 3. Galioidealae (this section contains plants having the habit of species of Gâlîum. D. C. prod. 4. p. 492. American species with tetradruous flowers, which are disposed in dichotomous cymes, never girded by any involucrum.

47 R. Equisetoides (Cham. et Schlecht. in Linneaa. 3. p. 232.) branches compressedly tetragonal, scabrous from retrograde bristles; leaves small, erectly adpressed, somewhat triangular, acute; cymes divaricate, dichotomous or trichotomous; flowers sessile in the forks; bracteas 4, under the branches; berries glabrous. Ñ. F. Native of the south of Brazil.

Horse-tail-like Madder. Pl. straggling.

48 R. Epedroideae (Cham. et Schlecht. in Linneaa. 3. p. 231.) glabrous; stems nearly terete; branches acutely tetragonal, roughish; leaves narrow-elliptic or linear, acute, smooth; cymes
dichotomous or trichotomous; bracteas conforming to the leaves under the branches; flowers pedicellate; berries glabrous. 2. F. Native of Brazil. Leaves deciduous, smooth.

Ephedra like Madder. Pl. straggling.

1. lobes graec. peduncles G. in p. Native bracteas F. peduncles peduncles leaves G. leaves leaves. upper foot lobes under — are green-house easily leaves sessile, species terminal, composed H. nal terete, difference and G. Flowers Scabrous Cult. Weak Quito, 2

Var. β, serrulatum (D. C. prod. 4. p. 593.) leaves membranous, serrated by prickles round the margins. 2. H. Native about Naples, where it was collected by Passy.


Flax-leaved Bed-straw. Fl. June, July. Clt. 1759. Pl. 1 to 2 feet, var. γ, 3 to 4 feet. 3 G. Paschale (Forsk. desirip. p. 203.) stems weak, glabrous, smooth; leaves 8-9 in a whorl, linear-lanceolate, with scabrous margins, glabrous, mucronate; peduncles axillary, opposite, longer than the leaves, trichotomous at the apex; fruit glabrous, minute. 2. H. Native about Constantinople. G. Hierosolymitænum is probably not distinct from this, ex Vahl, symb. 2. p. 29, but that plant is joined to G. le'ere by Schrader, and to G. scabrum by Persoon. Flowers white.


4 G. incurvum (Sibth and Smith, fl. greec. t. 132.) stems panicled; leaves 8 in a whorl, linear, glabrous, awned, incurved; lobes of corolla obute, awned; fruit glabrous. 2. H. Native of Crete, on the sphenecotic mountains. Flowers yellow.—Perhaps the same as G. incurvum, D'Urv. enum. p. 15, which was collected on rocky hills in the island of Samos. Stem often pubescent. Peduncles axillary and terminal, trichotomous.

Incurved Bed-straw. Pl.

5 G. sub trifidum (Reinw. ex Blum. bijdr. p. 944.) stems twiggly, obversely scabrous; leaves usually 6 in a whorl, short, narrow, linear-lanceolate, acutish, rather scabrous; peduncles terminal, few-flowered. 2. F. Native of Java, on the mountains. Said to be nearly allied to G. spathulætum and G. pumilum. Sub trifid Bed-straw. Pl. 1 foot.


7 G. incanum (Sibth and Smith, fl. greec. t. 150.) leaves 6 in a whorl, linear, and as well as the stems hoary; peduncles 3-flowered; lobes of corolla awned; fruit glabrous. 2. H. Native on Mount Parnassus. Flowers white. (f. 111.)

Hoary Bed-straw. Pl. tufted, 1/2 to 1 foot.

8 G. oblilium (Vill. dauph. 2. p. 324. t. 8.) stems ascending, tetragonal, villous at the bottom; leaves 8 in a whorl; lower ones oblate; villous; upper ones linear-lanceolate, glabrous; peduncles twice trifid, glabrous; lobes of corolla ending in a setaceous acumen each; fruit glabrous. 2. H. Native of Dauphiny, Picmont, Etruria, and Austria, in rugged places, and in hedges among the mountains. G. mucronatum, Lam. dict. 2. p. 581. D. C. fl. fr. 4. p. 258. Flowers white. Habit of G. Boccini, but differs in the fruits of the corolla ending in a setaceous point.
Oblique Bed-straw. Pl. 1 foot, ascending.


10 G. alte stre (Gaud. in Rosm. et Schultes, syst. 3. p. 225.) plant tufted, glabrous, ascending, erectish; stiff; stems smooth, glabrous; leaves 8 in a whorl, obversely lanceolate, with smoothish margins; umbels trichotomous, fastigate; lobes of corolla acute, not awned; fruit smooth, glabrous. 2. H. Native of France, Switzerland, Germany, Carniola, and Upper Italy, among the mountains and alps. G. levee var. a, b, and y. D. C. fl. fr. 4. p. 256. G. sylvéstre alpestre, Gaud. fl. helv. 1. p. 439. G. anisophyllum, pusillum, montanum, and argenteum, Vill. dauph. 2. p. 318-324. t. 78. G. levee, Schleich. G. Jussieu's, Vill. dauph. 2. p. 523. t. 7. Flowers white. There are varieties of this species with stems from a finger to a hand high, quite glabrous or rather hairy. It is intermediate between G. levee, G. Boccioni, and G. supinum, which probably should be all combined under one name.


12 G. pulchrum (Lam. dic. 2. p. 580. ill. no. 1368. t. 60. f. 2.) plant tufted; leaves 6-8 in a whorl, linear, smooth, bisulate beneath, very acute, tumid at the base; flowers almost terminal, subumbellate; peduncles longer than the leaves; fruit glabrous. 2. H. Native of the Pyrenees, in rugged places, &c. D. C. fl. fr. no. 3374. Req. diss. mss. G. triechophyllum, All. ped. auct. p. 1. Flowers white. Lobes of the corolla obtuse.

Var. a. hypnoides (Vill. dauph. 2. p. 325.) plant tufted, erectish; peduncles 2-3-flowered. 2. H. Native of Dauphiny, frequent on the mountains.


Var. γ, rectum (Req. diss. mss.) stems erectish, branched above; peduncles divided, 2-4-flowered. 2. H. Native of Provence, &c. among rocks.

Var. e, pubescens (D. C. fl. fr. suppl. p. 496.) stems tufted, erectish, and are, as well as the leaves, downy. 2. H. Native of Provence, in exposed, rocky places. G. pubescens, Req. in litt. 1813. G. pusillum, Linn. spec. 154. G. pulsínum hirtéllum, Gaud. fl. helv. 1. p. 433.


13 G. littorale (Guss. fl. sic. prod. 1. p. 172.) stems stiff, tetragonal; branches approximate; leaves usually 8 in a whorl, oblong-lanceolate, dilated at the apex, mucronate, a little serrated on the margin, spreading or reflexed; branches of panicle trichotomous, erect; corolla downy outside, with ovate-lanceolate, awned lobes. 2. H. Native of Sicily, in sandy, bushy places by the sea side. Flowers white. Nearly allied to G. Mollugo and G. apiculatum.

Var. β, pubescens (Guss. l. c.) stems and peduncles downy or villous at top.

Sea-shore Bed-straw. Pl. 1 to 2 feet.


15 G. Tyroleâne (Willd. enum. 1. p. 153.) stems flaccid, tetragonal, equal, smooth; leaves 6-8 in a whorl, obvate-lanceolate, mucronate, with scabrous margins; floriferous branches panicled; peduncles trifid; lobes of corolla awned; fruit smooth, glabrous. 2. H. Native about Tyrol, on the mountains, &c. Req. diss. mss. G. splendens, Horn. suppl. 17. G. Mollugo, var. Link. Flowers white. Probably a mere variety of G. Mollugo.


16 G. cinéreum (All. ped. no. 22. t. 77. f. 4.) stems erect, woody at the base, much branched, panicled at top, tetragonal and smooth; leaves 6-8 in a whorl, linear, glaucous beneath, stiff, mucronate, with hardly scabrous margins, usually reflexed; branches of panicle trichotomous; lobes of corolla ending in a setaceous mucron each; fruit glabrous, smooth. 2. H. Native of the south of France, in exposed places; and Upper Italy and Vallis. In the lowlands of Scotland, on the banks of the river Leith near Slateford, 3 miles from Edinburgh. D. C. fl. fr. no. 3364. G. diffusíum, Hook. sect. p. 53. Brittles on the edges of the leaves pointing forward. Flowers white.

Var. γ, pâlum (D. C. fl. fr. no. 3364.) lower part of the stems and lower leaves downy. 2. H. Native of dry, exposed places.


17 G. Hyrcânicum (Meyer, verz. plz. p. 53.) plant glaucous, downy; stems erectish, branched a little, tetragonal, smooth; leaves 6 in a whorl, nearly linear, mucronately acuminate, 1-nerved, smooth; umbels trichotomous, terminal; corolla glabrous, having the lobes terminated by a deciduous, inflexed point; fructiferous pedicels erectly spreading, hardly
twice the length of the fruit. 2. H. Native of Caucus, among rocks, and in stony, dry places, on the Talus mountains.


Var. β, lucidum (D. C. l. c. e.) lobes of corolla setaceous acuminated. 2. H. Native of hills in Piedmont and Dauphiny. G. lucidum, All. ped. no. 21. t. 77. f. 2. G. rigidum, Vill. dauph. 2. p. 319.


Var. δ, approximatum (D. C. prod. 4. p. 596.) whorles of leaves closer together. 2. H. G. lucidum, Hort. par.

*Erect* Bed-straw. Fl. June, July, Britain. Pl. 1 to 2 feet. 19 G. Mollugo (Lin. spec. p. 155.) stems flaccid, tetragonal, thickened above the nodi, glabrous, spreadingly branched; leaves 6-8 in a whorl, elliptic-oblanceolate, mucronate, spreading, serrated a little; peduncle much branched, disposed in panicles; lobes of corolla acuminate; fruit glabrous, smooth. 2. H. Native almost throughout Europe and Caucasus, in hedges; plentiful in Britain. ©der. fl. dan. t. 455. Bull. herb. t. 283. Smith, engl. bot. t. 1675. Lob. icon. t. 802. f. 12. G. boreale, Lapeyr. ex Benth.—Petiv. herb. brit. t. 30. f. 4. Flowers white, and sometimes yellowish. Herb very variable in height and breadth of leaves. Leaves hairy on the margins and keel, but never rough to the touch. The plant is called Wild Madder, and Great Bastard Madder. The roots are creeping, and yield a red dye like the true Madder, but of a brighter colour: like that also they dye the bones of animals red that feed on them.


Var. γ, scabrum (D. C. fl. fr. no. 3361. β.) lower parts of stems and lower leaves scabrous from hairs. 2. H. Native of exposed places. G. scabrum, With. brit. 190.

Var. ε, clatum (D. C. prod. 4. p. 596.) stems taller and more humid at the joints. 2. H. Native of moist places, as bogs. G. elatum, Thul. fl. par. ed. 2. vol. 1. p. 76.


*Shrubby* Bed-straw. Fl. June, July. Clt. 1819. Sh. 1 ft. 21 G. mediterraneum (D. C. prod. 4. p. 596.) stems ascending, tetragonal, smooth; lower leaves 4 in a whorl, obovate, mucronate: upper leaves 6 in a whorl, linear-lanceolate, mucronate, with rather scabrous margins; peduncles di-trichotomous; lobes of corolla ending in an awn; fruit glabrous. 2. H. Native of Corsica, on Mount Reston, where it was collected by M. Thomas; and on the mountains of Liguria, by Badaro. G. campéstre, Dub. bot. gall. 1. p. 248. but not of Wild. Flowers white or yellowish. It differs from *G. campéstre* in the stem being smooth, not scabrous on the angles, in the form of the leaves, and in the awned lobes of the corolla.

*Mediterranean* Bed-straw. Pl. ascending. 22 G. maxium (Moris, elench. sard. 1. p. 55.) plant glabrous; stems smoothish, much branched, erect; leaves 6 in a whorl, oblong-linear, obtuse, with scabrous edges; branches 4 in a whorl; peduncles triachotomous; lobes of corolla acutish; fruit glabrous. 2. H. Native of Sardinia, among bushes, and in wet pastures by the sea side.

*Largest* Bed-straw. Pl. 2 to 3 feet.


*Pyrenean* Bed-straw. Pl. ½ foot, tufted.


27 G. helodes (Hoffm. et Link. fl. port. 2. p. 47.) stems weak, diffuse, scabrous; leaves 5–6 in a whorl, lanceolate-linear, mucronulate, scabrous above and on the margins; panicles capillary.  ʔ. H. Native of Portugal, in marshes about Torres Vedras. G. uliginosum, Brodt. fl. lus. 1. p. 150. It is very like G. uliginosum, and probably only a variety of it.


28 G. palustre (Lin. spec. p. 153.) stems diffuse, tetragonal, rather scabrous; leaves 4–6 in a whorl, obvolute, obtuse, unequal, glabrous, with scabrous edges: superior ones lanceolate; peduncles nearly terminal, trichotomous; lobes of corolla ovate, awnless; fruit smooth, glabrous. ʔ. H. Native of Europe and Siberia, on the banks of rivers and ditches, and in moist meadows; frequent in Britain. Ėd. fl. dan. t. 423. Smith, engl. bot. t. 1857. Hook. fl. lond. fasc. 1. t. 20.—Petiv. brit. t. 30. f. 5. Roots creeping. Flowers numerous, white. Plant tall when supported by other herbage.

Var. β, constrictum (Dub. bot. gall. 1. p. 260.) leaves linear.


Var. γ, obtusum (D. C. prod. 4. p. 597.) leaves 5–6 in a whorl; stem roughish.


29 G. suerdi (Sibth. et Smith, fl. grtec. t. 128.) stems diffuse, much branched, smooth; leaves 4 in a whorl, lanceolate, acute, glabrous; flowers terminal and axillary, by threes; fruit glabrous. ʔ. H. Native of Candia, on the mountains. Leaves with roughish margins. Flowers greenish-purple, bracteolate. Bracteas ciliated, ovate, acute.

Corky-fruit Bed-straw. Pl. diffuse.

30 G. suerdi (Trevis. mag. nat. amic. berl. 1815. vol. 7. p. 146.) stems flaccid, scabrous along the angles; lower leaves 6 in a whorl, rameal ones 4 in a whorl, linear-elliptic, unequal; branches of panicle dichotomous, panicled; fruit glabrous, spherical, emarginate. ʔ. H. Native of Tauria, among reeds about Astrachan; and of Caucasus, in humid places near Lenkeran, mixed with G. palustre, Bieb. suppl. 106. G. palustre, Bieb. fl. taur. 1. p. 103. Corolla white.


Trifid-peduncled Bed-straw. Fl. Ju. July. Clt. 1826. Pl. proc. 32 G. tinctorum (Lin. spec. p. 153) stems decumbent, smooth; leaves 4–6 in a whorl, linear, obutose, scabrous on the margins and keel; peduncles axillary and terminal, elongated, subcorymbose, many-flowered; lobes of corolla 4, obtuse; fruit glabrous, smooth. ʔ. H. Native of North America, in low marshy places, as in Canada, United States, Newfoundland; Straits of De Fuca, on the North-west Coast. Very nearly allied to the preceding, but differs from it in the stems being smooth, in the peduncles being longer, and in the flowers being always 4-parted. It is said that from the roots of this species the Indians prepare the red dye with which they colour the feathers and other ornaments of their dress. Some states of G. palustre, in our country, when they have more numerous leaves than usual, are scarcely distinguishable from the G. tinctorum.

Dyers' Bed-straw. Pl. decumbent.

33 G. obtusum (Torr. fl. bot. ed. 2. p. 55.) stems smooth; procumbent, tetragonal; leaves 4 in a whorl, oblong-lanceolate, obtuse, acuminate on the margins and nerve; peduncles 3-flowered; lobes of corolla acute; fruit smooth, globose. ʔ. H. Native about Boston, on the banks of rivers and rivulets. Corollas white.


34 G. asprellum (Michx. fl. bor. amer. 1. p. 178.) stems diffuse, much branched, tetragonal, rough from retrograde prickles along the angles; cauline leaves 6 in a whorl, rameal ones 4, lanceolate, acuminate, prickly on the nerve and margins; florescence branches divaricate, many-flowered; pedicels short; lobes of corolla awnless; fruit glabrous. ʔ. H. Native of North America, from Canada to Virginia. Pursh. fl. amer. sept. 1. p. 103. Flowers white. Perhaps the same as G. Claytoni or G. trifidum.

Rough Bed-straw. Pl. decumbent.


37 G. asperifolium (Wall. in Roxb. fl. ind. 1. p. 381.) stems branched, weak, tetragonal, scabrous from recurved hairs along the angles; leaves 6 in a whorl, oblong-linear, somewhat cuneated, mucronate, rather scabrous above, but beset with recurved hairs on the nerve beneath and margins; peduncles axillary, many-flowered, disposed in a kind of leafy panicle; fruit glabrous.—Native of Nipal. Req. diss. mss. G. parvifolium, D. Don, prod. fl. nep. 133. Flowers white, but blackish when dried. Lower leaves 8 in a whorl. The stem and branches are soft, while the leaves are harsh.


Root long, red. Leaves 8–9 in a whorl, ex Rœm. et Schultes.

Etna Bed-straw. Pl. tufted.

39 G. frutescens (Cav. icon. 3. p. 3. t. 206. f. 1.) stems suffrutescents at the base, erect; branches tetragonal, glabrous; leaves 6 in a whorl, linear, mucronate, subrevolute; peduncules
RUBIACEÆ. CCXVI. Galium.

651

Hoffm. germ. 1. p. 71. Root creeping, red. Flowers pale yellow, or cream-coloured. Very like G. boreale, but larger, with broader leaves. There is a variety of this species with hispid fruit, according to Steven, obs. p. 70.

Var. β, angustifolium; leaves narrower and longer; flowers fewer. 2. H. Native of Kotzebue's Sound; abundant in dry elevated soils, under the shade of solitary pines, in the valley of Columbia, North-west America. The leaves are almost as narrow as those of G. boreale, but the inflorescence and fruit are very different. G. rubioides, Hook. et Arn. in Beech. voy. pt. bot. p. 115. and 125. This variety has been received by Dr. Hooker from the United States, under the name of G. Bermodium.


Jointed Bed-straw. Fl. July. Clt. 1752. Pl. 1 foot. 47 Valantoides (Bieb. fl. taur. l. 1. p. 102.) stems eriophytis, branched at the base, glabrous, smooth along the angles; leaves 4 in a whorl, rhomboid-lanceolate, twice longer than broad, obtuse, 3-nerved, rather scabrous on both surfaces; pedicle trichotomous, 3-nerved, scabrous; fruit glabrous, smooth. 2. H. Native of Caucasus, among subalpine rocks. Req. diss. diss. ex herb. D. C. Rœm. et Schultes, syst. 3. p. 215. Very nearly allied to G. rubioides and G. articulatum. Flowers cream-coloured. There is a variety of this with hispid fruit, according to Stev. obs. p. 70.


48 G. Ca'spicum (Stev. obs. l. ross. p. 70.) whole plant villous; stems obliquely tetragonal; lower leaves 8 in a whorl, lanceolate-oblong, mucronate, upper ones opposite; floriferous branches panicled, and are, as well as the fruit, villous. 2. H. Native of the north of Persia, in the province of Ghilan. Flowers white. Stature and leaves of G. sylvestricum, but the panicle is dense, like that of G. mollugo. Caspian Bed-straw. Pl. 1 to 2 feet.

49 G. rotundifolium (Lin. spec. l. 156. exclusive of var. β.) stems diffuse, glabrous; leaves 4 in a whorl, roundish-ovate, 3-nerved, ciliated; peduncles axillary and terminal, loose, elongated, naked, trichotomous at the apex; fruit nearly globose, beset with bristles, which are hooked at the apex. 2. H. Native nearly throughout the whole of Europe, in mountain woods; and on the Talusche mountains in Caucasus. Lam. diss. l. 2. p. 577. D. C. fl. fr. no. 3386. G. dodecaphylla, Ehrl. herb. p. 63. Aspèrula leavigata, β, Lam. diss. l. 1. p. 298.—Bocci. sic. f. 5. f. 1.—Moris. hist. 9. t. 21. f. 5.—Barrel. icon. t. 323. Flowers white. Stems procumbent.


51 G. obovatum (H. B. et K.) nov. gen. amner. 3. p. 336. t. 278.) stems almost simple, pilose; leaves 4 in a whorl on short petioles, obovate, acute, flat, smoothish, ciliated, 4 times shorter than the internodes; flowers terminal, by threes, pedunculate; fruit covered with hooked bristles. —Native of South America, in temperate parts of the kingdom of Quito, about Chillo and Guanacabamba. Corolla of a whitish violaceous colour.

Nearly allied to G. rotundifolium.

Obovate-leaved Bed-straw. Pl. 1 ½ foot.

52 G. Java'num (Blum. bijdr. p. 943.) branches tetragonal, hairy; leaves 4 in a whorl, roundish obovate, 3-nerved, with the margins and veins downy beneath; cymes pedunculate, trichotomous, leafy. —Native of the East of Java, on the mountains.

Said to be allied to G. elegans.

Java Bed-straw.

53 G. Neesi'num (Rq. diss. mess. ex D. C. prod. 4. p. 600.) stems ascending, erectish, branched, tetragonal, beset with short hairs; leaves 4 in a whorl, roundish-ovate, ending each in a very short cusp, 3-nerved, hairy; peduncles axillary and terminal, longer than the leaves, trichotomous, hairy; fruit nearly globose, beset with hooked bristles. 2. F. Native of Teneriffe, in the Chestnut woods. G. hisrütum, Nees, in Buch. in. berl. p. 113. t. 22. but not of Ruiz et Pavon. G. ovatifolium, Schott, Spix, and Mart. 1. p. 55. ex Link. in Buch. can. p. 151. Flowers white. —Said to be nearly allied to G. rotundifolium.

Nees's Bed-straw. Pl. ascending.

54 G. elegans (Wall. in Roxb. fl. ind. 1. p. 382.) stems diffuse, ascending, tetragonal, hairy; leaves 4 in a whorl, elliptic, oblong, sessile, 3-nerved, rather hairy above, and villous all along the nerves and margins beneath; peduncles axillary and terminal, trichotomous, hardly pilose, disposed in a panicle; fruit roundish, hispid from bristles, which are hooked at the apex. 2. F. Native of Nipaul. G. Pandúanum, Wall. cat. no. 6212. Roots creeping. Fruit small. Flowers white. Habit of G. cruciátum.

Var. B., gläbrus'énum (Rq. diss. mess. ex D. C. l. c.) stems and leaves smoothish. 2. II. Native of Nipaul.


55 G. Hamiltonii (Spreng. cur. post. p. 39.) stems erect, branched, pilose; leaves 4 in a whorl, oblong, acute, rather pilose on both surfaces; peduncles terminal, trichotomous, loose-flowered; fruit hispid. 2. F. Native of Upper Nipaul, at Mereha. G. latifólium, Ham. in D. Don, prod. fl. nep. 133.

Hamilton's Bed-straw. Pl. 1½ foot.

56 G. hirtéfólium (Rq. diss. mess. ex D. C. prod. 4. p. 600.) stems weak, branched, rather scabrous; leaves 4-6 in a whorl, linear, bluntish, glabrous above, and scabrous from pili on the keel and margins beneath; peduncles axillary and terminal, bifid, disposed in a kind of panicle; pedicles divaricate; corollas bristly outside; fruit roundish, hispid from bristles, which are hooked at the tops. 2. F. Native of Nipaul, at Narainhyth. G. ciliátum, D. Don, prod. fl. nep. p. 133, but not of Ruiz et Pav. G. Aparine, Roxb. fl. ind. 1. p. 382.? Stems rather hispid. Flowers small, milk-coloured.

Hairy-flowered Bed-straw. Pl. ½ to 1 foot.

57 G. uncinéla'num (D. C. prod. 4. p. 600.) stems weak, diffuse, branched, tetragonal, hispid at the base, and glabrous at the apex; leaves 4 in a whorl, ovate, acutish, hispid on both surfaces, hardly 3-nerved at the base; peduncles dichotomously corymbose, few-flowered; fruit beset with bristles, which are hooked at the apex, and about equal in length to the diameter of the fruit. 2. F. Native of Mexico, between Tampico and Real del Monte, where it was collected by Berlandier.


58 G. Chamisso'sii (Hook. et Arn. in bot. misc. 3. p. 363.) plant quite glabrous, perennial; stems erectish, acutely tetragonal; angles smoothish; leaves deflexed, oblong, acute, with revolute margins; pedicels axillary and terminal, trifid, bifid, or trichotomous; pedicles very much divaricate; fruit roundish, hispid from compressed bristles, which are acute at the apex, but not hooked. 2. F. Native of Chili, about Valparaiso. This approaches somewhat in habit to Aspérula galioides.

Chamisso's Bed-straw. Pl. 1 foot.

59 G. Gillie'sii (Hook. et Arn. in bot. misc. 3. p. 364.) perennial; stems herbaceous, diffuse, almost simple, acutely 4-angled; leaves 4 in a whorl, oval, obliquely 1-nerved, with spinulose margins; pedicels axillary and terminal, 3-flowered, equal in length to the leaves; flowers pedicellate; fruit hispid; bristles longer than the fruit, not hooked at the apex.

Var. a: stem and leaves glabrous. 2. F. Native of Chili, in El Valle de Los Caigas, Andes of Mendoza, Cordillera of Chile.

Var. B: stem and leaves hairy. 2. F. Native of Chili, at El Malpaso and Los Palomares, Andes of Mendoza.


60 G. Suffruticosum (Hook. et Arn. in bot. misc. 3. p. 365.) suffruticosum, hairy, canescens; stems erectish, simple, terete; leaves oblong-linear, mucronate, hairy: the nerves as well as the revolute margins pilose; pedicels alternate. longer than the leaves, divaricately pilose. 2. F. Native of Chili, in Vina de La Mar, near Valparaiso. The hairs forming the pubescence point downwards.

Suffruticosum Bed-straw. Pl. 1 foot.

61 G. Eriocarp'snum (Bartl. in herb. Hennke, ex D. C. prod. 4. p. 600.) plant suffruticosum, glabrous, erect; leaves 4 in a whorl, oblong, 1-nerved; flowers trichotomously pilose; fruit beset with bristles, which are as long as it, but are not hooked at the apex. 2. F. Native of Cordillera of Chili. This is very distinct from all other species.


62 G. Tricho'carpum (D. C. prod. 4. p. 600.) stems dichotomous, much branched, glabrous, tetragonal, having the angles scabrous from retrograde bristles, the rest glabrous; corollas trichotomous, few-flowered; fruit beset with bristles, which are a little shorter than it, but not hooked at the apex. —Native of Chili, about Rancagua, among bushes. Allied to G. eriócarpum, but differs in the bristles of the fruit being shorter and fewer.


63 G. boreá'le (D. C. fl. fr. suppl. p. 498.) stems erect, straight, tetragonal, smoothish; leaves 4 in a whorl, linear-lanceolate, 3-nerved, glabrous; pedicels axillary, trichotomous, much longer than the leaves, disposed in a terminal panicle; bracteas obovately orbicular. 2. H. Native throughout the whole of Europe, in moist rocky shady places, by rivers and lakes; plentiful in some parts of Britain, as in the north of England and Scotland. Roots creeping, brownish. Leaves with scabrous margins. Flowers milk-coloured.


RUBIACEAE. CCXVI. GALIUM.


Northern Bed-straw. Pl. 1½ foot.

65 G. coriacea (Bunge in Ledeb. fl. ross. alt. ill. t. 216.) stems branched, tetragonal, scabrous at the base; leaves coriaceous, shining, with revolute scabrous edges: lower ones 4 in a whorl, obovate-oblong: upper ones opposite, oval, rather scabrous, as well as the stems; peduncles axillary, 2-4-flowered; fruit hispid from hooked pili at the base, much shorter than the pedicels. 2. H. Native of Siberia, in the fissures of rocks at the river Katunga, at a place called Boom, and at the river Tschuija. Peduncles slender, bifid, trifid, rarely twice trifid, rather hispid. Flowers yellowish-white.

Coriaceus-leaved Bed-straw. Pl. ¾ to 1 foot.


Circinaria-like Bed-straw. Pl. 1 to 1½ foot.

67 G. lanceolatum (Torr. fl. un. st. 1. p. 163.) stems erect, glabrous; leaves 4 in a whorl, ovate-lanceolate, acute, with ciliately scabrous edges, 3-nerved at the base; peduncles terminal, dichotomous, divaricate, longer than the leaves; flowers terminal, sessile, deflexed; corollas very acute; fruit beset with hooked bristles. 2. H. Native of North America, in the states of New York, Massachusetts, and Boston; and of Canada about Quebec. G. circinans β lanceolatum, Torr. cat. new york, p. 239. G. Torreyi, Bigel. fl. bost. ed. 2. p. 56. G. circinans var. Nutt. Flowers milk-coloured.

Lanceolate-leaved Bed-straw. Pl. 1 to 1½ foot.

68 G. Branchatium (Pursh, fl. amer. sept. 1. p. 103.) stems flaccid, elongated, brachiatly branched, hispid; branches short; leaves 6 in a whorl, oblong-lanceolate, acuminate, glabrous, having the margins and keel ciliated by bristles; floriferous branches verticillate, longer than the leaves, divaricately dichotomous; pedicels 2-flowered; fruit beset with hooked bristles. 2. H. Native of North America, from New England to Virginia, in meadows, and on the margins of woods, frequent. G. longicaule, Rafin. fl. lud. p. 75.0. Flowers white.

Branchiate Bed-straw. Pl. 1 to ½ foot.

69 G. Cuspidatum (Muhl. cat. ë Ell. sketch. carol. 1. p. 197.) stems prostrate, glabrous; leaves usually 6 in a whorl, lanceolate, acuminate, a little ciliated; peduncles trifid: lobes of corolla acuminate; fruit pilose. 2. H. Native of Carolina and Georgia. Flowers white. Fruit beset with long white pili.

Cuspidate-flowered Bed-straw. Pl. prostrate.

70 G. hispidulum (Michx. fl. bost. amer. 1. p. 79.) stems procumbent, much branched, hispid; leaves 4 in a whorl, oval-lanceolate, acuminate, with revolute edges, wrinkled, hispid on both surfaces; flowers nearly solitary, terminal; fruit hispid. 2. H. Native of Lower Carolina. Perhaps the same as G. lappaceum, fl. per. 1. p. 59.0. ex Pursh, fl. sept. amer. 1. p. 104. Flowers white.


Dense-flowered Bed-straw. Pl. 1 foot.


73 G. triflorum (Michx. fl. amer. 1. p. 80.) stems procumbent, tetragonal, hispid or smoothish; leaves 6 in a whorl, oblong, cuspidate, glabrous, scabrous along the nerves and edges, 1-nerved; peduncles axillary and terminal, 3-flowered, longer than the whorles of leaves; flowers pedicellate; fruit beset with bristles, which are hooked at the apex. 2. H. Native of Carolina, Pennsylvania, New York, Canada, Unalaska, Sitka, and Norland, in rather humid shady places. It is common from Quebec to the Rocky Mountains, and as far north as lat. 55°, and from the west side of the Rocky Mountains to the Pacific. Cham. et Schlecht. in Linneæa. 3. p. 222. Torrey, fl. un. stat. 1. p. 167. Wildl. hort. berol. t. 66. G. cuspidatum, Muhl. cat. p. 15. G. suaveolens, Walñ. fl. lapp. p. 48. Req. dis. ex herb. D. C. There are varieties of this with either rough stems, as in G. aparine, or glabrous stems. Flowers small, white. Habit and stem of Asperula odorata.

Var. β. viridiflorum (D. C. prod. 4. p. 602.) stems smooth; corollas green. 2. H. Native about Moscow, in mossy woods. G. hyssopifolium, Goldb. in litt. 1821. Req. dis. mss. ex herb. D. C.


74 G. Maritimum (Linn. mant. p. 38. but not of Thunb. prod. 3.) plant villous all over; stems much branched, tetragonal; leaves 4-6 in a whorl, but the ultimate ones are opposite, all lanceolate-linear, acute; peduncles axillary, 1-flowered; corollas and fruit villous or hispid outside. 2. H. Native of Nice and
the Levant, in exposed rocky places. Corollas reddish. Stems
creeping at the base.

Var. β, villorum (D. C. prod. 4, p. 602.) plant more crowded;
leaves 4-8 in a whorl. 2. H. Native of the south of Europe,
and at the bottom of the Pyrenees. G. villorum, Lam. dict. 2.
—Barred, icon. p. 81.—Bocc. mus. 2, p. 110. t. 86. Fruit
clothed with white hairs.

1 foot.

75 G. Brachyphylhum (Schultes, mant. 3. p. 180.) plant
smoothish, much branched, procumbent; leaves 4-6 in a whorl,
but the upper ones are opposite, all lanceolate, mucronate,
and reflexed; pedicels 2-3-together, axillary, 1-flowered; fruit
scabrous from pubescence. 2. H. Native of Caucasian, about
Buduce, in the calcareous range, &c. G. brevifolium, Stev.
mem. nom. 3, p. 253. but not of Smith et Sibth. G. alpèstre,
taur. suppl. p. 107. Flowers white. This is an intermediate
plant between the granular and villous species.

Short-leaved Bed-straw. Pl. procumbent.

76 G. Greæcum (Linn. mant. p. 38.) stems suffruti
cose, branch
ed at the base; branches erect, hispid; leaves 6 in a whorl,
linear, hairy, erect; peduncles axillary and terminal, few
flowered, a little longer than the leaves; fruit beset with long
white bristles. 2. H. Native of Greece, on Mount Parnassus,
and the islands of Cois and Candia, on exposed rocks. Sibth et
t. 166. Peduncles forming a racemose or thyrsoid panicle.

Flowers small, yellowish-brown.


77 G. caënum (Req. diss. miss. ex D. C. prod. 4, p. 602.)
stems suffruti
cose, tufted; branches very hairy and hoary; leaves
lanceolate, with involute margins, hairy on both surfaces, hoary
beneath; peduncles eymose, few-flowered, 2-3 times longer
than the leaves; fruit hispid. 2. H. Native of Syria, where it was
collected by Donati and Labillardiere. Flowers small, purplish.

Perhaps only a variety of G. greæcum.

Hoary Bed-straw. Pl. ½ foot.

78 G. Micranthum (Pursh, fl. amer. sept. 1. p. 103.) stems
much branched, divaricate, beset with retrograde prickles;
leaves short, lanceolate, mucronate, glabrous, having the margins
and keel prickly; floriferous branches divaricate branched;
pedicels usually 2-flowered; fruit hispid. 2. H. Native of
North America, from Canada to New York, in mountain bogs.

Said to resemble G. uliginosum very much.

Small-flowered Bed-straw. Pl. divaricate.

§ 4. Coccogalia (from coccus, kokkos, a grain, and gailium; in
reference to the granular fruit). D. C. prod. 4, p. 602. Perennial
plants. Leaves 4 in a whorl. Flowers on long peduncles, herma
phrodite. Fruit granular.

79 G. cotinoides (Cham. et Schlecht. in Linnæa. 3. p. 227.)
stems diffuse, weak, tetragonal, beset with retrograde bristles
along the angles; whorles of leaves distinct; leaves 4 in a whorl,
sessile, lanceolate, acute, with the nerve and margins scabrous;
panicles trichotomous, few-flowered, terminal; pedicels capillary,
very long; fruit glabrous, minutely tubercular. 2. F. Native of
Chili, in hedges near Taluanga, and about Conception.

This is a very showy species, with the habit of G. uliginosum.


80 G. Lanuginosum (Lam. ill. no. 1360.) stems, branches,
and peduncles clothed with long soft dense hairs; leaves 4 in a
whorl, lanceolate, acute, glabrous, with scabrous margins; pedi


Var. \( \beta \), trachyphyllium (Wallr. l. c.) stems and leaves rather scabrous; fruit glabrous; flowers deep yellow. \( \psi \). H. Native of Europe and Caucasus, in open places. Mill. fig. t. 120. Oed. fl. dan. t. 1146. Mart. fl. rust. t. 54. Curt. fl. lond. 6. t. 13. Smith, engl. bot. t. 660. G. vèrum pubescens, Guss. prod. 171. G. tuberculatum, Presl, del. prag. p. 120.


Var. \( \delta \), maritimum (D. C. fl. fr. 4. p. 248.) stems low, much branched, glabrous at the base, villous at the apex; ovaries glabrous. \( \psi \). H. Native of Armoracia, in sand by the sea side.

Var. \( \epsilon \), tomentosum (Meyer, verz. pfl. p. 54.) stems and fruit densely clothed with tomentum. \( \psi \). H. Native of Caucasus, on the tops of the Talsich mountains near Drych.

The common name Bed-straw given to all the species is from the verb to straw, anciently written straw. Before the invention of feather-beds a variety of herbs were used to stew beds with; among these doubtless this was one. In Johnson's edition of Gerard, it is called our Ladies' Bed-straw (p. 1127.). From the notion of its curling milk, Dioscorides has named it γλαυκον; and it is said to have been used in many parts for this purpose, but from later experiments it has not succeeded in coagulating milk. It has probably been put into milk destined to make cheese, not so much for the purpose of curling it, as of giving it a flavour, or as Matthioli expresses it, to make it eat the sweeter. The French formerly prescribed the flowers in hysterical and epileptic cases. Boiled in alum-water the flowering stems dye a good yellow colour. The roots dye a very fine red, not inferior to madder.

True Ladies' Bed-straw or Cheese-renten. Fl. July, Aug. in Britain. Pl. 1 to 2 feet.

86 G. RUTHE\'NEUM (Willd. spec. l. c. p. 596.) leaves 8 in a whorl, linear-filiform, cuspitate, with revolute scabrous margins; stems also scabrous; flowers panicked; peduncles pubescent; fruit hispid from villi. \( \psi \). H. Native of Siberia and Caucasus, growing along with G. vèrum. Flowers deep yellow.

Var. \( \beta \), rosmarinifolium (Ledeb. fl. alt. l. c. p. 158.) leaves 8-10 in a whorl, linear, shining above and pubescent, and clothed with hoary tomentum beneath, with revolute edges; stems tomentose suffruteose at the base; panicle coarctate; fruit villos. \( \psi \). H. Native of Siberia, at the river Tschuja, in the Kairic desert in dry exposed places.

Ruthian Lady's Bed-straw. Pl. 1 foot.

87 G. Ver-MOLLUGO (Wallr. in Schiede, pl. hybr. p. 64.) stems tetragonal, rather downy; leaves sublanccolate-linear, rather scabrous, with revolute scabrous edges, downy beneath; panicles rather divaricate; flowers rather distant; corollas cream coloured, with acutish segments. \( \psi \). H. Native of Germany. This is a hybrid raised from the seed of G. vèrum, impregnated by G. mollugo. G. vèrum \( \beta \), Rem. et Schultes, syst. 3. p. 233. G. mollugo var. ochroleuca of authors.

 Vera-Mollugo or Hybrid Ladies' Bed-straw. Pl. 1 to 2 feet.

88 G. TunE\'A\'NUM (Lam. dict. l. c. p. 583.) stems erect, terete, canescens; leaves 8-10 in a whorl, linear, downy, with rough revolute edges; pedicles many flowered, disposed in a panicle; fruit hispid. \( \psi \). F. Native of Tunus, about Algiers in hedges. Descf. fl. atl. l. c. p. 129. Poir. voy. 2. l. c. p. 110. Stems villous. Flowers yellow. Resembles G. vèrum.

Tunus Bed-straw. Pl. 1 to 2 feet.

89 G. MIN\'UTUM (Lin. spec. l. c. p. 154.) stems decumbent, smooth; leaves 8 in a whorl, lanceolate, mucronate, serrated from prickles, glabrous, incurved; peduncles reflexed; fruit fleshy. \( \psi \). H. Native of Russia. Gmel. sib. 3. p. 169. no. 45. Flowers yellow. The plant resembles G. vèrum very much, and is probably only a variety of it.

Minute Bed-straw. Pl. decumbent.

90 G. HUMI\'I\'UM (Bieb. fl. taur. l. c. p. 104.) stems prostrate, much branched, villous; leaves 6 in a whorl, linear, spreading much, villous; floriferous branches axillare, aggregata; lobes of corolla acutish; fruit downy. \( \psi \). H. Native of Caucasus, Tauria, on the lower Volga, in exposed places, and by way sides common. Corollas cream-coloured; anthers yellow. Habit and inflorescence like that of G. vèrum.

Trailing Bed-straw. Pl. trailing.

91 G. ARE\'AE\'NUM (Lois. fl. gali. l. c. p. 585.) plant glabrous; stems prostrate, much branched; leaves 6-10 in a whorl, linear-oblong, short-apatieulate, thick, with revolute rather scabrous edges; corymb small, on short peduncles, crowded into a panicle; fruit glabrous, rather fleshy. \( \psi \). H. Native of the west of France, from Bayonne even to Armoracea on the south, in the sand by the sea side. D. C. fl. fr. suppl. p. 492. G. hierosolymitaniun, Thom. chl. land. 40. but not of Lin. G. megalocephalum var. \( \beta \), D. C. fl. fr. ed. 3. no. 3530. exclusive of var. a. G. minittum, Aubr. morb. p. 16. Flowers yellow, varying from 3-5-dent. Distinct from the sea side variety of G. vèrum.

Sand Bed-straw. Pl. prostrate.

§ 7. Eriocagia (from erica, a heath, and gaium; the habit of the species is that of E'rica). D. C. prod. 4. p. 604. Perennial or suffruteosus plants. Leaves 4-6 in a whorl. Inflorescence axillare. Flowers hermaphrodite.

92 G. ERE\'COIDES (Lam. dict. l. c. p. 583.) stems suffruteosus, much branched, downy; leaves approximate, 4-5 in a whorl, linear-lanceolate, with revolute margins, apiculate, stiff, smoothish; flowers axillary, nearly sessile, solitary, bifracteata; corolla pilose outside; fruit covered with stiff short hairs. \( \psi \). G. Native of Monte-Video and Chili. Cham. et Schlecht. in Linne. 3. p. 225. Larger leaves 2-3 lines long, and the smaller ones only half a line. Flowers minute, cream-coloured. Fascicles of leaves sessile, hence the plant has the habit of a heath. Stems decumbent.

Var. \( \beta \), intermédia (Cham. et Schlecht. in Linne. 3. p. 225.) plant shrubby, clothed with short down; leaves linear, quite glabrous, ending in a long cusp each. \( \psi \). G. Native of Brazil, in Campo d'Utma.

Var. \( \gamma \), atherodes (Cham. et Schlecht. in Linne. 3. p. 225.) quite glabrous in every part, as also the fruit; leaves linear, with revolute edges. \( \psi \). G. Native of Brazil, in Estrella do Campo Aguda. G. atherodes, Spreng. cur. post. p. 39.


93 G. HI\'I\'I\'UM (Lam. dict. l. c. p. 583.) root woody; stems herbaceous, branched, tetragonal, very leafy, hispid; leaves 4-5 in a whorl, sessile, lanceolate, more or less hairy on both surfaces; flowers axillary, verticillate, nearly sessile, bibracteata; lobes of corolla acute; fruit glabrous, tubercular. \( \psi \). G. Native of the south of Brazil and Monte-Video. Cham. et Schlecht. in Linne. 3. p. 224. Req. diss. siss. G. réflexum, Pohl, in litt. G. megalopétamum, Spreng. cur. post. p. 39. ex Cham. et Schlecht. in Linne. Stems decumbent or erect. Flowers yellow. Inflorescence of G. verticillâtum.

Hairy Bed-straw. Pl. decumbent or erect.

94 G. CAMOFRUM (Pohl, in litt. ex D. C. prod. 4. p. 604.) plant quite glabrous; stems erect, tetragonal; leaves 4 in a whorl, sessile, linear, acutish, spreading, with revolute edges, more or less ciliat; flowers axillary, almost sessile; fruit finely granulated.—Native of Brazil, where it was collected by Pohl. Flowers small. Fruit almost like that of G. sp\'ùrium, but differs in being almost sessile. Leaves 4 or 5 lines long. Allied
Rubiaceæ.  


96. G. corona'tum (Sibth. & Smith, fl. grac. t. 125.) stems ascending, branched from the base, smooth; leaves 4 in a whorl, elliptic, obtuse, nearly veinless, with the margins and base ciliated; peduncles quinquefidi, glabrous, bracteate; flowers polygamous; fruit glabrous. 2. H. Native of Bithynia, on Mount Olympus; and of Tauria and Caucasus. Valànía Taürica, Bieb. fl. taur. 2. p. 457.—Buxb. cent. 5. p. 47. f. 39. There is a variety of this with rather hispid stems. Flowers pale yellow.  


Crowneed Bed-straw. Fl. June, July. Clt. 1816. Pl. pro-  
cumbent.


98. G. vèrnum (Scop. carn. ed. 2. no. 144. t. 2.) stems erect, simple or branched from the base; leaves 4 in a whorl, 3-nerved, ciliated; peduncles dichotomous, bracteate, shorter than the leaves; flowers polygamous; fruit glabrous. 2. H. Native of France and Switzerland, Upper Italy, Germany, Hungary, Gallicia, Siberia, &c. in grassy places. Stems and leaves glabrous or hispid, with the exception of the cilia. Flowers yellow or cream-coloured. D. C. fl. fr. ed. 3. no. 3353. Very like G. cruciátum. Valànía vèrna, G. Don, in Loud. hort. brit. p. 411.  


99. G. Pèrsicum (D. C. prod. 4. p. 605.) plant quite glabrous, smooth, erect, of many stems; leaves 4 in a whorl, ovate-oblong, not ciliated; peduncles axillary, many-flowered, 3 times shorter than the leaves, bracteate; fruit glabrous. 2. H. Native of Persia, near Ama'dan, where it was collected by Olivier
pilose, muricately along the angles; lower leaves ovate: cauline ones 6 in a whorl; uppermost one opposite, all with revolute hispid edges; panicles decompound; lobes of corolla cupulitate; fruit glabrous. **O. H.** Native of Gibraltar, on the mountains. Flowers yellow.

*Gibraltar Bed-straw.* Pl. ½ to 1 foot.


*Pigmy Bed-straw.* Pl. small.

107 G. Cordatum (Röem. et Schultes, syst. 3. p. 259.) plant glabrous, erectish, branched from the base; leaves 4 in a whorl, ovate, unequal: floral ones sessile, ovato-cordate, deflexed, and covering the flowers and lower parts of the nodi; peduncles branched, short, few-flowered; fruit glabrous. **O. H.** Native of the Levant, at the foot of Mount Lebanon, where it was collected by Labillardiere, &c. The flowers are probably yellow. This plant is often to be found in gardens under the name of *Cattleya cucullata.* Nearly allied to *G. articulatum.*

*Cordate-leaved Bed-straw.* Pl. ½ foot.

§ 10. *Xantharpaines* (from ξανθος, xanthos, yellow, and αρπαν, aparne, aparine, the Greek name of cleavers or goose grass; in reference to the yellow flowers of the species). D. C. prod. 4. p. 600. *Plants annual.* Leaves 4-8 in a whorl. *Inflorescence cymosely panicled.* Flowers yellow, hermaphrodite. Fruit glabrous.

108 G. Campestre (Schousb. ex Willd. enum. 1. p. 152.) stem erect, tetragonal, having the roughness on the angles turned upwards, not retrograde; lower leaves 4 in a whorl, the rest 6, elliptic, mucronate, with scabrous margins; peduncles dichotomous; lobes of corolla lanceolate, bluntish. **O. H.** Native of Barbary. Röem. et Schultes, syst. 3. p. 294. Link, enum. 1. p. 155. Corollas cream-coloured. Leaves 4 lines long, and 2 lines broad. Stems bentam at the base. Leaves on the upper part of the branches sometimes opposite.

Var. β. *Vahlii* (D. C. prod. 4. p. 606.) stem smoothish; leaves oblong. **O. H.** Native of Barbary, where it was collected by Vahl and Lamarck, &c. See Lam. dict. 3. p. 584. observations under G. megalospermum. The leaves are almost like those of var. a, but the margins are more scabrous. Lobes of corolla not awned. Fruit granular.


109 G. Glomeratum (Desf. fl. atl. 1. p. 128. t. 40.) stem erect, branched, panicled, tetragonal: angles rough; leaves 6-8 in a whorl, linear-lanceolate, mucronately acute, serrulate scabrous on the margins; panicles trichotomous; lobes of corolla very acute, a little awned; fruit glabrous. **O. H.** Native of Barbary, in corn-fields. Flowers pale yellow. Said to be allied to *G. campstare.*

*Glomerate-flowered Bed-straw.* Pl. ¼ to ½ foot.

110 G. viscosum (Vahl, symb. 2. p. 29.) stems ascending, tetragonal, smooth, branched; lower leaves 4 in a whorl: upper ones 6, linear-lanceolate, with serrated margins and a smooth keel; the serratures directed upwards; peduncles filiform, by threes; pedicels 2-flowered; fruit clamy. **O. H.** Native of the kingdom of Tunis, on the mountains. Corolla pale yellow, almost white.

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*Clamydium-flowered Bed-straw.* Pl. ¼ foot.


111 G. Unfvelli (Req. diss. mss. ex D. C. prod. 4. p. 607.) stem erect, branched at the base, glabrous; leaves 6-8 in a whorl, linear, erect, glabrous, with revolute edges; peduncles axillary and terminal, trifid; pedicels 3 times longer than the flowers; fruit glabrous. **O. H.** Native of the islands in the Grecian Archipelago, in arid places. G. floribundum, D'Urville cat. no. 130. but not of Smith. Flowers purplish in the dried state. Habit of *G. setacea,* but differs in the fruit being quite glabrous.

*D'Urville's Bed-straw.* Pl. ½ foot.

112 G. Divicaricatum (Lam. dict. 2. p. 580.) stem ascending or erect, branched at top, slender, smoothish; leaves 6-8 in a whorl, linear, acute, hispid; peduncles axillary and terminal, slender, elongated, divaricate, trifid at the apex; pedicles twice the length of the flowers; fruit glabrous. **O. H.** Native of the south and middle of France; Liguria and Sicily, in arid sandy places. D. C. fl. fr. no. 3370. icon. rar. t. 24. Req. diss. mss. G. tenua, Vill. dauph. 2. p. 92 t. 7. Flowers greenish-


113 G. Tenuissimum (Bieb. fl. taur. 1. p. 104.) stems weak, ascending, much branched, rather scabrous along the angles; leaves 6-8 in a whorl, linear, acute, scabrous, hispid; peduncles axillary and terminal, trichotomous, divaricate; pedicels length of peduncles; fruit glabrous. **O. H.** Native of Tauria, Caucasus, Iberia, in uncultivated and sterile places. G. purpureum, Pall. ind. taur. but not of Lin. Flowers small, greenish-white. Very nearly allied to *G. divaricatum,* and probably only a variety of it according to Steven, but differs in the pedicels being 3 or 4 times longer.


115 G. Apicum (Sibth et Smith, fl. græc. t. 126.) stems pilose, diffuse; leaves 4 in a whorl, obovate, uniform, with scabrous edges; peduncles trifid, leafless; fruit glabrous. **O. H.** Native of Candia and other islands in the archipelago, frequent. Pedicules 3-flowered; middle flower hermaphrodite and quadridif; lateral ones male and trifid. Certainly a species of *Vailiandia.*

*Sunny Bed-straw.* Pl. diffuse.

116 G. Gaudichaudii (D. C. prod. 4. p. 607.) stems weak, decumbent, tetragonal, rather hispid; leaves 4 in a whorl, ob-
RUBIACEAE. CCXVI. Galium.

long-linear, with hairy revolute edges; floriferous branches short, axillary, few-flowered; lobes of corolla hardly acutish; fruit glabrous.—Native of New Holland, at Port Jackson, where it was collected by Gauchaud. Stems 8-10 inches long. Leaves 2-3 lines long, shorter than the internodes. Flowers white.

Gauchaud's Bed-straw. Pl. decumbent.

§ 12. *Europaeris* (from eu, well, and aparine, cleavers; the section is supposed to contain the true kinds of cleavers). D. C. prod. 4. p. 607. Plants annual. Stems scabrous. Leaves 4-8 in a whorl. Inflorescence axillary. Flowers usually hermaphrodite. Fruit granular or hispid, diously globose.


119 G. *sacri*um (Lin. spec. p. 154.) stems decumbent, scabrous from retrograde prickles along the angles, but glabrous at the knees; leaves 8-9 in a whorl, lanceolate, mucronate, keeled, scabrous from retrograde prickles along the keel and edges; peduncles many-flowered, hardly recurved, while in the fruit longer than the leaves; fruit glabrous, smooth. O. H. Native of Europe and Siberia, in fields and all cultivated ground; in Scotland, in cornfields about Forfar, but rare. D. C. fl. fr. ed. 3. no. 3377. Smith, engl. bot. t. 1871. G. agrétei leiospermum, Wallr. sched. p. 59. G. hispidum, Hofm. germ. 1. p. 74. G. adaeirens, Jacq. hort. vind. ex Jan. herb. G. aparine var. Spreng. Flowers green. Perhaps two species are confused under this name, differing much in the size of the fruit.


120 G. *scabri*um (Vahl, in Horn. hort. linn. 1. p. 135.) stem angular, scabrous from retrograde prickles; leaves 8 in a whorl, linear, spreadingly reflexed, longer than the internodes, mucronate, very scabrous above, and scabrous from prickles along the keel and margins; peduncles axillary, few-flowered, suberymbose; fruit globose, diously hispid from bristles, which are hooked at the apex. O. H. Native of Egypt.


121 G. *aparine* (Lin. spec. p. 157.) stems weak, branched, rough from retrograde prickles, villous at the nodi; leaves 8 in a whorl, lanceolate-linear, apiculated, scabrous from retrograde prickles along the margins and keel; peduncles simple and bifid, scabrous; fruit diously globose, very hispid from bristles, that are hooked at top. O. H. Native throughout the whole of Europe, north of Asia, and North America, in hedges, fields, and in most cultivated places; plentiful in Britain. Oed. fl. dan. t. 495. Smith, engl. bot. t. 816. Bull. herb. fr. t. 215. Heyne, term. bot. t. 13. f. 6. Mart. fl. rust. t. 104. Woodv. med. bot. suppl. 269. Valantia Aparine β, Lam. fl. fr. 3. p. 383. Aparine hispida, Moench. meih. p. 640. Rubia tinctorum, Lapeyr. ex Benth. Aparine, Doed. pemp. 353. Petiv. brit. t. 30. f. 11. Flowers small, pale buff-coloured. Fruit rather large. Stems climbing. The well-known property of this plant of adhering to whatever it comes in contact with, acquired it the names of Cleavers or Clivers, and Catchweed or Scratch weed; and from being a favourite food or medicine of geese, Goosegrass, Goose, and Goslingweede. The walks, according to Linnaeus, are used in Sweden as a filter to strain milk through. Dioscorides relates that the shepherders made the same use of it in his time. It is reckoned to purify the blood, and for that purpose the tops are an ingredient in spring broth. The expressed juice of the herb taken to the amount of 4 ounces or a quarter of a pint night and morning, during several weeks, is very efficacious in removing many cutaneous disorders. It has been most celebrated in scrofulous and cancerous sores, but the experiments made has not turned out in its favour. The seeds are a good substitute for coffee. The roots, like most of the genus, will dye red, and eaten by birds have tinged their bones of that colour.

Var. β, minor (Req. dist. mss. ex D. C. prod. 4. p. 608.) stem dwarf; leaves usually 6 in a whorl, and smaller. O. H. Native of the island of St. Lucia, near Narbonne.


122 G. *vaillant* (D. C. fl. fr. 1805. no. 3581.) stems weak, nearly simple, glabrous at the nodi, but scabrous from retrograde prickles along the angles; leaves 8 in a whorl, linear, having the keel and margins scabrous from retrograde prickles; peduncles simple or bifid; fruit globose dilymoid, rather hispid from a few bristles, which are hooked at their tops. O. H. Native of Europe, in cultivated fields; plentiful in some parts of Britain; G. ingens, Waldst. et Kripl. var. hung. 3. p. 202. (1808) Bess. gall. 121. G. agrétei echinospermum, Wallr. sched. p. 59. G. Aparine β, Lam. Flowers small, yellowish. Fruit about half the size of those of G. aparine, and not so hispid.


123 G. *aparine* (Forsk. descrip. p. 30.) stems weak, prickly along the angles, but the prickles are not retrograde as in most of the species, but lean forward, and the knees or joints are equal and glabrous; leaves 6 in a whorl, oblong, scabrous from retrograde prickles along the margins and keel; peduncles 3 from the top of each branch, bifid; fruit hispid from bristles, which are hooked at the tops. O. H. Native of Arabia, in shady places. Vahl. symb. 2. p. 30. Flowers white. Fruit like that of G. aparine.

Cleavers-like Goose-grass. Pl. procumbent.

124 G. *pauflor*um (Bunge, l. c.) annual; stems weak, glabrous, tetragonal, scabrous from retrograde prickles along the angles; leaves 6 in a whorl, spatulate-oblong, attenuated at the base, cuspidate by a spine, hispid above, and glabrous be-
neath, with scabrous margins; peduncles axillary, a little longer than the leaves, bracteate, 1-2-flowered; corollas very minute, obsect; fruit didymous, very hispid from hooked bristles.

2. G. Native of China, in humid places, near Sri-jui-say.

**Few-flowered Goose-grass.** Pl. decumbent.

125 G. australë (D. C. prod. 4. p. 600.) stems weak, pro-
cumbent, branched, tetragonal, pilose, on one side; leaves 4 in a whorl, oblong, mucronate acutely, rather pilose, with sub-
revolute edges; peduncles axillary, 3-flowered, hardly longer than the leaves; fruit very hispid from bristles.—Native of New
Holland, at Bass Straits, where it was collected by D'Urville. Said to be nearly allied to G. recurviurn, but differs in the ped-
cels not being recurved, and in the fruit being twice the size.

**Southern Goose-grass.** Pl. procumbent.

126 G. gra'cile (Bunge, in mem. acad. sc. Petersb. 2. p.
109.) stem simple, erect, quite glabrous, shining, tetragonal; leaves 4 in a whorl: lower ones obovate, middle ones ellipti-
cus, superior ones oblone. 1-nerved, scabrous from dots, hispid on the margins; panicles axillary, dichotomous, very slender, exceeding
the leaves; corollas very minute, obsect; fruit hispid from hooked bristles.

2. G. Native of China, on mountains, near Lan-zuán-sy.

**Slender Goose-grass.** Pl. ½ foot.

127 G. te'nerum (Schleich. ex Gaud. fl. holv. 4. p. 442.) stems filiforam, glabrous; leaves 6 in a whorl, obovate, seta-
cuously apiculate, scabrous from retrograde prickles on the margins; peduncles by threes, trifid, spreading; fruit hispid.

O. H. Native of the Alps of Switzerland. Corollas small, white.

**Tender Goose-grass.** Pl. procumbent.

128 G. ligitiórum (D. C. fl. fr. no. 3382. icon. rar. t. 26.) stems decumbent, branched, rather scabrous; leaves 4-6 in a
whorl, linear-lanceolate, acute, shorter than the internodes, rather scabrous; peduncles elongated, divaricate, bifid or trifid;
fruit nearly globose, hispid at the top from somewhat hooked hairs.

O. H. Native of the south of France, Italy, Sicily, in rough
stone places, and probably about Paris, but very doubtful. G. Parisienne, Lin. spec. p. 157. exclusive of the synonyms. G. 

sic. p. 61. ex Guss. Flowers small, reddish. This species differs from G. Anglicum and G. gracile in the fruit being hispid.

**Var. β, nidum** (D. C. prod. 4. p. 609.) stems short, erect.

O. H. Native of Europe, in very sterile places. D. C. icon.

tar. 26. right-hand figure.

**Litigious Goose-grass.** Fl. June, July. Pl. procumbent.

129 G. microspé'rum (Desf. fl. atl. 1. p. 130.) stems erect,
tetragonal, glabrous, rough; branches divaricate; leaves 6 in a
whorl, linear-acute, denticulated; fruit hispid. O. H. Native of Barbary, near Marse; and of Sardinia. Aspérula scabra,
Very nearly allied to G. divaricatum, Lam., and is perhaps only a variety of it, with hispid fruit. According to Steven, obs.
ined in herb. Willd. It is only a variety of G. litigious.


½ foot.

130 G. se'ta'ceum (Lam. dict. 2. (1786.) p. 584.) stems fili-
form, erect, scabrous at bottom; leaves usually 6-8 in a whorl,
but from 4 to 8, linear-setaceous, with rather scabrous margins:
lower ones oblong; peduncles slender, divaricate, trifid; fruit hispid from bristles, which are hooked at the apex. O. H.
Native of Spain, Mauritania, Sicily, Provence, in exposed stone
G. microcarpum, Wahl, symb. 2. (1791.) p. 30. G. capillare,
Cav. icon. 2. (1792.) p. 75. t. 191. f. 1. Lag. gen. et spec. no.
127. G. floribundum, Sibth. et Smith, fl. greac. t. 134. ? G.

capillare and G. microcarpum, Spreng. syst. Flowers red. The
oldest name is here admitted for this plant, as in all other cases.

**Scilaceous-leaved Goose-grass.** Fl. June, July. Clt. 1819.

Pl. 1 to ½ foot.

131 G. sitthóphi (Rom. et Schultes, syst. 3. p. 244.) stems smooth;
leaves 8 in a whorl, linear, revolute scilaceous, scabrous:
lower ones obovate; pedicels capillary; fruit rather pilose.
O. H. Native of the Grecian Islands, on sterile hills. G. capillare, Smith, prod. fl. greac. 1. p. 94. but not of Cav.
G. Créticum annuum tenuifolium flore albo, Tourn. cor. p. 4.
Flowers pale yellow or cream-coloured. Perhaps only a variety of G. microspermum or G. setaceum.

**Sitthóphi's Goose-grass.** Pl. 

132 G. bre'viórum (Sibth. et Smith, fl. greac. t. 155. but not of Stev.) stems villous; leaves 7 in a whorl, obovate, awned,
scabrous; peduncles trichotomous, terminal; lobes of corolla
awned; fruit hispid. O. H. Native of Caramania, on the sea-
Shores. Flowers cream-coloured. The bristles on the stem and
leaves are not retrograde, as on most of the species. Perhaps
the same as G. album, Willd. ex Rom. et Schultes, syst.

**Short-leaved Goose-grass.** Pl. 1 foot.

133 G. a'leum (Forsk. descr. const. p. 20.) stems erect,
downy, coloured at the nodi; leaves 6-8 in a whorl, oblong,
mucronate, with scabrous hardly serrulated margins, glabrous above, and villous beneath, especially on the keel;
fruit hispid. O. H. Native about Smyrna. Flowers white.

**White-flowered Goose-grass.** Pl. ½ foot.

134 G. recu'rum (Req. diss. 1791. ex D. C. prod. 4. p. 609.)
stems weak, decumbent, smoothish; leaves 6 in a whorl, but the uppermost ones are only 4, obovate-oblong, nar-
rowed at the base, acutish at the apex, glabrous; peduncles axillary, 3-flowered, equal in length to the leaves, deflexed while in
fruit, hairy; fruit small, globose, hispid. O. H. Native of the Grecian Archipelago, among rocks. G. micranthum, D'Ur


Montpelier, at Pont Jouvenal, where it was collected by Requier.


138 G. Smirni; branches erect, simple, bluntly quadrangular, scabrous; leaves 4 in a whorl, uppermost opposite, all deflexed, elliptic-lanceolate, scabrous; flowers axillary, by threes, therefore 6 in a whorl, erect; fruit hispid, with distinct, elongated mericarps. O. H. Native of the Greek Islands; among rocks. Shérdia crética, Smith, fl. græc. t. 116. Flowers greenish yellow.


† Species of Gálium not sufficiently known.

* Species natives of Europe.

139 G. Sóleiroli (Lois. nov. nov. not. 7.) stems weak, angular, downy (Lois.), villous (Spreng.); leaves 5-6 in a whorl, ovate-lanceolate, acute, hairy; peduncles dichotomous (Lois.), divaricate, trifid, few-flowered (Spreng.); fruit wrinkled. Ρ. H. Native of Corsica, by the sea-side, where it was collected by Sóleiroli. G. Córiscum, Spreng. cur. post. p. 39. Flowers unknown.

Sóleiroli's Bed-straw. Pl. procumbent.

140 G. Goldlachicum (Kluk. in Bess. prím. fl. gal. 2. p. 337.) stems procumbent, diffuse, tetragonal; leaves 8 in a whorl, narrow-lanceolate, awned, girded by strong hairs at the apex; flowers umbellate; fruit globose.—Native of Galicia, in grassy places. Said to be like G. leíve and G. Boccíiá.


141 G. Pentándreum (Gilex. ex Kluk. in Bess. prím. fl. gal. 2. p. 338.) stems erect, branched; leaves 8 in a whorl, linear-lanceolate, spotted with white at the apex; racemes few-flowered; flowers pentamers; fruit didymous—Native of Galicia. Flowers yellowish. Said to be nearly allied to G. vêrâm, and is probably merely a pentamers-flowered variety of that plant.

Pentandrous Bed-straw. Pl. 1 foot.

142 G. ochroleúcum (Kit. in Schultes, cestr. fl. ed. 2, vol. 1, p. 305.) stems erect, quadrangular, smooth; leaves 8 in a whorl, linear-subulate, with very rough margins, and ending in large mucrones each; flowers by threes, corymbose, campanulately funnel-shaped. Ρ. H. Native of Austria, on mountain rocks. Flowers cream-coloured.—Perhaps a species of Aspérula.

Cream-coloured-flowered Bed-straw. Pl. 1 foot.

143 G. Montanum (Lin. spec. p. 155.) stems weak, scabrous; leaves 4 in a whorl, linear, smooth; corymbs trifid. Ρ. H. Native of Germany, France, England. Corolla white, purplish outside before expansion. Anthers brown. This plant is not known at the present day, as the plant under this name in the Linnean herbarium does not agree with the characters given of it by him.

Mountain Bed-straw. Pl. ½ to ⅔ foot.

** A species native of the Levant.

144 G. hierosolymíta-num (Lin. amem. 4. p. 451.) leaves 10 in a whorl, lanceolate-linear; flowers umbellate, fastigate.

—Native of Palestine. Stature of G. rúbrum. The rest unknown.

Jerusalem Bed-straw. Pl. ½ to 1 foot.

*** Species natives of Asia.

145 G. tubérósus (Lour. coch. p. 79.) root oblong, tuberous; stem procumbent, simple; leaves 4-5 in a whorl, lanceolate, glabrous; pedicels axillary, 1-flowered, crowded, longish; fruit rough.—Native of China and Cochinchina, where it is cultivated for the sake of the tubers, which are farinaceous, and are eaten when boiled. Flowers hardly known. Perhaps a true species of Gálium.

Tuberous-rooted Bed-straw. Pl. procumbent.

146 G. striócosum (Thunb. nov. act. ups. 7. p. 141. t. 4. f. 1-9.) stems procumbent, tetragonal, scabrous along the angles; leaves 6 in a whorl, elliptic, ending in a spinoe point, hispid from pili yellowish, and nearly glabrous beneath, with ciliately scabrous edges; flowers axillary, on short peduncles.—Native of Japan. G. uliginósus, Thunb. fl. jap. 58.

Strigose Bed-straw. Pl. decumbent.

*** Species natives of the Cape of Good Hope.

147 G. mucronátum (Thunb. prod. p. 30. fl. cap. 151.) stems downy, weak, tetragonal, rising in numbers from the same root; leaves 6 in a whorl, linear, mucronate, glabrous, with revolute serrated edges; branches few-flowered; fruit glabrous.—Native of the Cape of Good Hope. Perhaps the same as G. mucronátum, Spreng. pug. 2. no. 49. The G. mucronátum, Lam. and the G. mucronátum, Ruiz et Pav. are distinct species. Mucrones of leaves white.

Mucronate-leaved Bed-straw. Pl. ½ foot.

148 G. hórdidum (Thunb. fl. cap. 1. p. 556. phybl. bl. p. 16.) stem suffruticos, erect, tetragonal, prickly along the angles; leaves usually 8 in a whorl, linear, reflexed, serrated by prickles. Ρ. G. Native of the Cape of Good Hope.

Horrid Bed-straw. Shrub 2 feet.

149 G. glá'rum (Thunb. prod. p. 30. fl. cap. 152.) stems flexuous, erect, tetragonal, glabrous, serrated along the angles; leaves 6 in a whorl, obovate-oblong, acute, glabrous, with ruplicately-serrated edges; peduncles ample, lateral and terminal, pinnated. Ρ. G. Native of the Cape of Good Hope. Flowers white. Very like G. aspérum.

Glabrous Bed-straw. Pl. 1 foot.

150 G. A'spérum (Thunb. prod. p. 30. fl. cap. 554.) stem flexuously erect, beset with white twisted hairs, and scabrous along the angles; leaves 6 in a whorl, oblong, glabrous, with ruplicately serrated margins; flowers few. Ρ. G. Native of the Cape of Good Hope. Angles of stem rough from retrograde denticulations. Fruit glabrous.

Rough Bed-straw. Pl. 1½ foot.

151 G. expá'num (Thunb. prod. 30. fl. cap. 152.) stem tetragonal, smooth, with divaricate downy branches; leaves 6 in a whorl, linear, mucronate, glabrous, with revolute margins; pedicels trichotomous, spreading, divaricate; fruit smooth. Ρ. G. Native of the Cape of Good Hope. Corollas white.

Expanded Bed-straw. Pl. 1 foot.

152 G. Cape'nsé (Thunb. prod. p. 30. fl. cap. 151.) stems frutescent at the base, erect, branched; branches terete, downy; leaves 6-8 in a whorl, linear-lanceolate, glabrous, with revolute margins; peduncles dichotomous; fruit glabrous, smooth. Ρ. G. Native of the Cape of Good Hope. Flowers white.

Cape Bed-straw. Shrub 1 foot.

**** Species natives of North America.

158 G. unifé'rum (Michx. fl. bor. amer. 1. p. 79.) stems flaccid, smooth; leaves 4 in a whorl, linear, acute, glabrous;
peduncles axillary, solitary, 1-flowered, very short; flowers drooping; fruit glabrous. 2. H. Native of Carolina. Fertile branches ascending. Said to be nearly allied to C. tinctorium. Flowers white. G. uninervum, Req. ined. in herb. D. C. is a variety of G. triflorum.

One-flowered Bed-straw. Pl. ascending.

154 G. parviflorum (Rafin. med. disp. 5. and in Desv. journ. bot. 1. p. 297.) stems diffuse, angular, glabrous; leaves 5-6 in a whorl, linear-lanceolate, very acute, glabrous; flowers very numerous, panicked.—Native of New York, about Newport and Delaware. Flowers small, white.


155 G. spinulosum (Rafin. med. sern. p. 40, but not of Merat.) plant diffuse; leaves 4-6 in a whorl, cuneiform, cuspidate, spinulose, scabrosus; peduncles lateral, dichotomous, manyflowered; fruit scabrous.—Native of Maryland. Desv. journ. bot. 4. p. 270. Rem. et Schultes, syst. 3. p. 528.

Spinulose Bed-straw. Pl. diffuse.

156 G. Mexicanaum (H. B. et Kunth, nov. gen. amer. 3. p. 387.) stem beset with retrograde prickles; leaves 8 in a whorl, linear, acuminate pungent, glabrous, with revolute edges, which are, as well as the middle nerve, rough from retrograde prickles, one-half shorter than the internodes; corynbs terminal, sub-trichotomous; fruit hispid. 3. H. Native of Mexico, near Guanaxauti. Perhaps a species of Rubia.


***** Species natives of South America.

157 G. denticulatum (Bartl. in herb. Haenk, ex D. C. prod. 4. p. 612.) stems diffuse, branched, rather hispid from bristles; leaves 4 in a whorl, ovate, cuspidate, ciliate by distant bristles, rather hairy on both surfaces, 1-nerved; flowers few, terminal, usually by threes; pedicels capillary; fruit glabrous.—Native of Mexico, at Real del Monte. Perhaps a species of Rubia.


158 G. hispidum (Ruiz et Pav. fl. per. 1. p. 50.) stems procumbent, tetragonal, much branched, hairy; leaves 4 in a whorl, lanceolate, reflexed, hairy; peduncles axillary, 1-flowered, solitary, short; fruit scabrous. 3. H. Native of Peru, in the province of Canta, in shady places. Perhaps a species of Rubia.


159 G. piliferum (H. B. et Kunth, nov. gen. amer. 3. p. 337.) stems weak, beset with retrograde prickles; leaves 8 in a whorl, linear-lanceolate, acuminate by hairs, glabrous, with revolute edges, which are, as well as the middle nerve, beset with retrograde prickles, much shorter than the internodes; flowers terminal, on long peduncles; fruit hispid. 3. H. Native of New Granada, on the Andes. This plant ought probably to be excluded from the genus, on account of its campanulate corolla. Habit of G. uliginosum.


160 G. canescens (H. B. et Kunth, nov. gen. amer. 3. p. 336.) stems almost glabrous; branches and leaves villous; leaves 4 in a whorl, ovate, acuminated, triple-nerved, canescent beneath, much shorter than the internodes; floriferous branches bifid; flowers lateral and axillary, solitary and terminal, by threes; fruit beset with hooked bristles. 3. H. Native about the town of Quito. Habit of G. maritima, but is said to be annual. Perhaps a species of Rubia.

Canescent Bed-straw. Pl. procumbent.

161 G. Caripense (H. B. et Kunth, nov. gen. amer. 3. p. 337.) stem glabrous, beset with retrograde prickles; leaves 8 in a whorl, upper ones 6, oblong-lanceolate, mucronate, having the margins beset with retrograde prickles, much shorter than the internodes; flowers terminal, usually by threes, pedunculate; fruit hispid. 3. H. Native of Cumaná, near Caripé, in shady places. Said to be allied to G. tinctorium, but is annual.

Caripé Bed-straw. Pl. diffuse.

162 G. lappaceum (Ruiz et Pav. fl. per. 1. p. 59.) stem rather scendant, much branched, tetragonal; branches villous, dichotomous; leaves oblong or obovate, 4 in a whorl, hispid; upper ones 3 in a whorl, lanceolate; peduncles axillary, 1-flowered; fruit hispid from bristles.—Native of Peru, about Huancaco, at Puelles Collem. The fruit is said to be baccate. Perhaps a species of Rubia.


***** Species the native habitats of which are unknown.

163 G. dichotomum (Lehm. ind. sem. hort. hamb. 1823. p. 7.) stem dichotomous, frutescent, quadrangular; leaves 4 in a whorl, obovate-lanceolate; fruit glabrous. 3. H. Native country unknown. Said to be allied to G. fruticoseum, but the leaves are much broader and shorter, and the flowers are larger.


164 G. rufidum (Ait. hort. kew. 1. p. 144.) stem erect, tetrate, pilose, rather scabrous; leaves verticillate, linear, scabrous above; panicles divaricate. 3. H. Native country unknown.


Cult. The species of Gálium are of the most easy culture and propagation. They will all grow in any common soil. The perennial kinds are easily increased by dividing the plants, or by seeds. The seeds of annual species should be sown where the plants are intended to remain. Those species natives of bogs or marshes should be planted in a moist situation; and those natives of warmer climates should be protected during winter, either by covering with mats or hauhum of other herbs, or by placing them in a green-house. None of them are worth-cultivating, unless in botanical gardens.


LIN. SYST. Tetrándria, Digynia. Calyx with an oblong tube, and the limb not persicuous. Corolla 4-parted, campanulate; lobes ovate, very short. Stamens 4, very short. Stigmas 2. Fruit oblong, rather incurved; one of the mericarps being abortive, the fruit is only 1-seeded.—An annual, erect, much-branched, slender, glabrous herb. Leaves 2, oblong, and stipulas 2, very like the leaves, constituting a 4-leaved whorl. Flowers 3 from each axil, on short pedicels, and therefore constituting 6-flowered whorles. Bractea large, membranous, complicate, and as if it were holding the fruit within its hollow. Flowers small, all fertile. Fruit hispid at the apex.


Cult. Sow the seeds in a warm dry situation, where the plants are intended to remain for seed.

LIN. SYST. Polygynia, Mone‘cia. Flowers by threes; middle one fertile, hermaphroditic, and the two lateral ones male, and combined with the middle one. Tube of calyx ovate; limb dentilculated, permanent, the denticulations many, irregular and stiff. Corollas rotate; male ones trifid, and the hermaphroditic one quadrifid. Stamens 3-4. Styles 2 in the hermaphroditic flower; stigmas capitiate. Fruit 3-horned, in consequence of the ovaria of the three flowers being combined; the lateral horns sterile, and the middle one biovulate, but usually only 1-seeded at maturity. —Annual branched herbs. Stems tetragonal. Leaves oval, opposite, and stipulas 2, very like the leaves, forming a 4-leaved whorl. Flowers 3 in each axil, sessile, small, yellow, therefore they appear 6 in a whorl. —According to the observation of A. Richard, the seeds are half naked at maturity from the rupturing of the mericarp.

1. V. MÉRASIA (Lin. spec. p. 1480.) stem, leaves, and calyces glabrous. O. H. Native of the south of Europe, in dry rocky places, and on old walls; on the whole coast of Tuscany; on the sandy shores of the County of Nice; and in the south of France, about Nemours; also about Montpellier and Leghorn. Sibth. et Smith, fl. grac. 137. V. quadrifolia, Mœch. meth. p. 610.—Sabb. hort. 1. t. 83.—Mich. gen. 13. t. 7.—Mor. oxon. 3. sect. 9. t. 21. f. 2.—Col. ephrr. t. 297. Angles of fruit fringed.

**WALL CROSS-WORT**. Fl. May, July. Cl. 1739. Pl. 1/2 foot.


**VAR. β. ACULEATA** (D. C. prod. 4. p. 614.) plant larger; fruit glabrous, longer than the denticulations of the calyx. O. H. Native of the kingdom of Naples, among rubbish and on old walls.

**HISPID CROSS-WORT**. Fl. May, July. Cl. 1768. Pl. 1/2 to 3/4 foot.

Cult. Sow the seeds on an old wall or on rock-work, or in any dry sandy soil and situation.

**Tribe XIII**.

**OPERCULARIA** Æ (this tribe contains plants whose fruit opens by an operculum). A. Rich. mem. soc. hist. nat. Par. 5. p. 142. D. C. prod. 4. p. 614.—Opecularia, Juss. ann. mus. 4. p. 418. and 10. p. 328.—Opecularia Gaertn. fruct. 1. p. 111. t. 24. Flowers combined: having the calyceine tubes resembling at length a pecicular operculum. Corollas 3-5-cleft. Stamens 1-5; filaments hardly adnate to the tube of the corolla at the base. Style short; stigmas 2, slender, elongated, acute. Fruit 1-seeded by abortion, combined, 2-valved (f. 112. b.), at length dehiscing.—Herbs or shrubs, usually natives of Australia. Leaves opposite. Stipulas twin on both sides, distinct or combined. Flowers combined into a head, girded by a partial, many-toothed involucrem. Heads of flowers sometimes umbellate and pedunculate, and sometimes sessile and capitulate, usually girded by a universal involucrem.—This tribe agrees with *Spermacoceae* in habit and stigmas, but the number of stamens is variable, and therefore it approaches the order *Valerianaceae*.

CCXIX. POMAX. CCXXX. OPERCULARIA.


LIN. SYST. Mono-Tetradria, Monogynia. Limb of calyx wanting. Corolla 3-4-cleft. Stamens 1-4. Seeds wrinkled from tubercles.—Suffrutaceous herbs. Leaves opposite, furnished with one leaf-formed stipula on each side. Peduncles 7-10, terminal, umbellate, involucrated by the 2 floral leaves and 4 small stipulas, bearing at their tops a small distinct head of flowers each; heads girded by a blunt 8-10-toothed involucrem. Flowers 3 within each partial involucrem, joined together by the tubes of the calyces.


**HAIRY POMAX**. Fl. June, July. Cl. 1826. Pl. 1/2 to 1 ft.

2. P. OLA’BRÉA (D. C. l. c.) plant glabrous in every part; leaves elliptic, attenuated at the base. ß. G. Native of New Holland, about Port Jackson. Stipulas smaller than in the preceding species.

**Glabrous Pomax.** Shrubs 1 foot.

**Cult.** The species of this genus grow best in a mixture of loam, peat, and sand; and cuttings root freely under a handglass.


LIN. SYST. Mono-Pentandria, Monogynia. Limb of calyx 3-4-lobed. Corolla 3-5-cleft. Stamens 1-5. Seeds nearly smooth.—Herbs suffruticosae at the base. Leaves opposite, furnished with distinct stipulas on both sides. Heads of flowers globose, terminal, or rising from the forks of the branches, pedunculate, or nearly sessile. Universal involucrem wanting, or composed of the 2 upper leaves and 4 small stipulas. Partial involucrea acutely 8-10-toothed.

1. O. HISPIDA (Spreng. syst. 1. p. 385.) stems diffuse, furrowed, tetragonal, rough from numerous hairs; leaves small, ovate, pilose; heads pedunculate, rising from the forks of the branches, drooping. ß. G. Native of New Holland. O. aspéra, Juss. ann. mus. 4. p. 427. t. 70. f. 1. Universal involucrem wanting; partial ones 8-10-toothed, each containing 3-5 flowers. Corolla 5-cleft, monandrous or diandrous, white.


2. O. Sessiliflora (Juss. l. c. p. 427. t. 170. f. 2.) glabrous; stems diffuse, slender, hardly furrowed; leaves linear; heads of flowers small, hemispherical, sessile in the forks of the branches ß. G. Native of New Holland.

**FIG. 112.**
Partial involucra 4-5 in the same head, each containing 2-4 flowers. Corollas 4-5-cleft, monandrous or diandrous, white. Leaves like those of the species of Linaria.


19 O. *A PECIFÓLIA* (Labill. nov. holl. 1. p. 35. t. 48.) glabrous; stems diffuse, very slender, suffruted; leaves oblong-linear, short; stipulas joined in one on both sides; heads of flowers terminal, small, hemispherical, involucreted by about 4 verticillate leaves. [7] G. Native of New Holland, in Van Lewin's Land. Juss. mem. mus. 4. p. 427. Partial involucra 1-3 in each head, each containing 3-4 flowers. Corollas 4-5-cleft; monandrous or diandrous, white. (Fig. 112.)

**Top-flowered Opercularia.** Shrub 1 foot.


5. **O. VAGINÁTA** (Labill. nov. holl. 1. p. 35. t. 46.) glabrous; stem erect, woody at the base, rather angular; leaves linear; stipulas combined into a long sheath, which is bidentate at top on both sides; heads globose, with papery, terminal. [7] G. Native of New Holland, in Van Lewin's Land. Juss. mem. mus. 4. p. 428. Partial involucra 5-9 in a head, each containing 3-5 flowers. Corolla 4-cleft. Stamens 4, ex Labill.

**Sheddied-stipuled Opercularia.** Shrub 1 foot.


**Hairy Opercularia.** Pl. 1 foot.

7. **O. HYSSÓPÓLIA** (Juss. mem. mus. 4. p. 428. t. 71. f. 1.) stem erect, rather angular, clothed with short down; leaves narrow-lanceolate, with somewhat ciliated margins; stipulas combined entire, acute; heads of flowers rising from the forks of the branches, on short peduncles, drooping a little, globose. [7] G. Native of New Holland. Partial involucra about 5 in every head, each containing 2-4 flowers.

**Hyssop-leaved Opercularia.** Shrub 1 foot.

8. **O. LIGUSTRÓLIA** (Juss. mem. mus. 4. p. 428. t. 71. f. 2.) stem erectish, tetragonal, hairy from short down, but glabrous between the nodi; stipulas combined at the base on both sides, acutely 2-lobed; heads of flowers rising from the forks of the branches, on short peduncles, drooping. [7] G. Native of New Holland, about Port Jackson. The rest as in the preceding species.

**Privet-leaved Opercularia.** Shrub 1 foot.


10. **O. OCYMIPTÓLIA** (Juss. ann. mus. 4. p. 428. t. 71. f. 3.) glabrous; stems diffuse, tetragonal, suffruted; leaves ovate-oblong, petiolate; stipulas combined in one on both sides; heads of flowers rising from the forks of the branches, on short peduncles, drooping, globose, naked. [7] G. Native of New Holland. Heads larger than peas, with 7-9 partial involucra in every head, each containing 4-6 flowers. Corolla 3-4-cleft. Stamens 2-3, ex Juss.


11. **O. RUINDÓIDEA** (Juss. ann. mus. 4. p. 428.) stems tetragonal, ascending, glabrous; leaves lanceolate, with revolute margins; margins and middle nerve scabrous beneath; stipulas combined on both sides, entire or bidentate; heads on short peduncles, rising from the forks of the branches, drooping, globose, naked. [7] G. Native of New Holland, on the Eastern Coast. Heads of flowers larger than peas. Partial involucra 5-7 in every head, each containing 5-6 flowers. Corolla 3-4-cleft. Stamens 3-4.

**Madder-like Opercularia.** Pl. 1½ foot.

† **Doubtful species.**

12. **O. ASPÉRA** (Géört. fruct. 1. p. 112. t. 24.) leaves oblong, scabrous, veiny; heads of flowers pedunculate, axillary.—Native of New Zealand, ex Solander. O. aspera, Spreng. syst. 1. p. 385. Probably the same as *O. hispida*.

**Rough Opercularia.** Pl. 1 foot.

13. **O. DÍPIYLLA** (Géort. L. c. p. 113.) stem and leaves unknown; heads of flowers rising from the forks of the branches; partial involucra hispid, many, in every head, each containing 3-4 flowers; flowers tetramerous.—Native of New Zealand. Juss. ann. mus. 4. p. 428. Rubioides diphylla, Soland. mss. The rest unknown.

**Two-leaved Opercularia.** Pl. 1 foot?

**Cult.** For culture and propagation see Pòmax, p. 662.

**CCXXI. LIPOS'TOMA** (from *lépis*, *leipo*, to fall from, and *stoma*, *stoma*, a mouth; lid from capsule). D. Don, in edinb. new phil. journ. Jan. 1830. Sweet, fl. gard. n. s. with a figure.

**L. SYST. TETRÓNDRIA, Monogynia.** Limb of calyx 4-parted. Corolla tubular at the base, and ventricose at the throat, and bearded inside, with a 4-lobed limb; lobes ovate, spreading, valvate in avitation. Stamens 4, inserted in the throat, exserted; filaments compressed; anthers linear, versatile. Style capillary; stigmas 2, subulate, hispid. Capsule globose, 2-celled, opercular, many seeded, but often 1-celled from the middle dissepiment having vanished. Placentas 2, spherical, stipitate, inserted beneath the middle of the dissepiment. Seed small, angular, scabrous. Embryo slender, with oblong plano-convex cotyledons, and a cylindrical obtuse radicle, which is a little longer than the cotyledons.—Diffuse trailing pilose herbs, natives of Brazil. Leaves opposite, petiolate. Stipulas subulate, interpetiolar. Flowers sessile, capitulate, intermixed with bracteas. Heads of flowers pedunculate, solitary, axillary. Corollas blue.


**Capitate-flowered Lipostoma.** Pl. trailing.

2. **L. SER'ÉCEUM** (D. Don. l. c.) plant hairy; hairs adpressed; leaves ovate, acute, when young silky. Y. S. Native of Brazil, in pastures. The whole plant is clothed with silky adpressed hairs. Heads of flowers smaller than the preceding. Corolla
blue, hairy. Seeds triquetrous, dark brown, beset with elevated dots.

Silky Liposoma. Pl. trailing.

Cult. For culture and propagation see Richardsiopsis, p. 628.

† Genera of Rubiaceae not so sufficiently known as to be placed in any particular situation in the body of the order.


Linn. syst. Pentandria, Monogynia. Calyx with a short tube, and a 5-parted limb; lobes flat, obtuse. Corolla coriaceous, funnelform, with a short tube, which is woolly inside, and a 5-parted, rarely 4-parted limb; segments of the limb twisted to the right in aestivation. Anthers linear, sessile within the tube of the corolla. Style clavate, spirally 10-ribbed. Ovary 2-celled, covered by an epigynous disk. Fruit unknown.—A shrub, with slender terete branches. Leaves opposite, coriaceous, lanceolate, acuminate, downy beneath and on the branches, on short petioles. Flowers numerous, glomerate, on short pedicels, axillary. Calyxes tomentose.—This genus is nearly allied to Psilospermum, but is distinguished from it in the aestivation of the corolla, and in the fruit not being silique-formed.

1 P. glomeratum (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 619.) ภ S. Native of the island of Luzon, one of the Philippines. Leaves 3½ inches long and 1 broad. Flowers small.

Glomerate-flowered Psilobium. Shrub.

Cult. For culture and propagation see Psychotria, p. 599.

CCXXIII. PLATYMERIUM (from πλατύς, platys, broad, and μέτρον, metron, a measure; probably from the parts of the flowers being broad). Bartl. in herb. Hænke. D. C. prod. 4. p. 619.

Linn. syst. Tetra-pentandria, Monogynia. Calyx with a short tube, and a rotate 5-parted, rarely 4-parted limb; lobes flat, obtuse. Corolla coriaceous, funnel-shaped, with a short tube, which is woolly inside, and a 5-parted, rarely 4-parted limb; segments of the limb twisted to the right in aestivation. Anthers linear, sessile within the tube of the corolla. Style clavate, spirally 10-ribbed. Ovary 2-celled, covered by an epigynous disk. Fruit unknown.—A shrub, with slender terete branches. Leaves opposite, coriaceous, lanceolate, acuminate, downy beneath and on the branches, on short petioles. Flowers numerous, glomerate, on short pedicels, axillary. Calyxes tomentose.—This genus is nearly allied to Psilobium, but is distinguished from it in the aestivation of the corolla, and in the fruit not being silique-formed.

1 P. glomeratum (Bartl. in herb. Hænke, ex D. C. prod. 4. p. 619.) ภ S. Native of the island of Luzon, one of the Philippines. Leaves 3½ inches long and 1 broad. Flowers small.

Glomerate-flowered Platymerium. Shrub.

Cult. For culture and propagation see Psychotria, p. 599.


Linn. syst. Tetra-pentandria, Monogynia. Calyx small, tubular, with 5-toothed border. Corolla tubular, slender. Stamens 5? Style and fruit unknown.—Stems quadrangular. Leaves opposite, petiolate, ovate, acute at the apex, acuminate at the base, yellowish beneath, soft to the touch. Stipulae large, interpetiolar, broadly ovate, acute, glabrous. Heads of flowers almost sessile, surrounded by large 5-toothed calyciform villous involucra. The place which this genus should occupy in the order is very doubtful.

1 S. Africana (Beauv. fl. d'Ind. 2. t. 76. fig. 75.) Native of the west coast of Africa, in deserts about the river Gaboon: we have also seen it in the neighbourhood of the Gaboon river. Flowers pale yellow.

Africana Stipularia. Shrub.

Cult. For culture and propagation see Psychotria, p. 599.

CCXXV. BENŽONIA (named in compliment to the celebrated African traveller Benzoni, who died at Benin, the habitat of the plant). Schum. pl. guin. p. 113. D. C. prod. 4. p. 620.

Linn. syst. Tetra-pentandria, Monogynia. Calyx with a glbose tube, and a small 5-toothed limb; teeth erect. Corolla tubular, coriaceous, 5-cleft; segments concave, cup-shaped. Anthers triquetrous, sessile in the throat. Style filiform; stigma ovate-globose, acutish, marked by 6-7 longitudinal furrows. Fruit unknown.—A shrub, native of Guinea. Branches terete, beset with pili above, and with papillae below. Leaves opposite, ovate-oblong, acuminate, glabrous, on short hairy petioles. Stipulae interpetiolar, lanceolate, glabrous. Peduncles axillary, dichotomous, corymbose, and as well as the bifid pedicels hairy.

1 B. contorta (Schum. pl. guin. p. 113.) ภ S. Native of Guinea, in various parts.

Corymbose-flowered Benzonia. Shrub 5 to 6 feet.

Cult. See Psychotria, p. 599. For culture and propagation.

CCXXVI. HIMANTANTHUS (from ἰμαντός, himantos, a garment, and ἀνθος, anthos, a flower; the flowers are involucrated by a large bractea before expansion). Willd. rel. ex Roxb. et Schultes, syst. 5. p. 13. D. C. prod. 4. p. 621.

Linn. syst. Pentandria, Monogynia. Tube of calyx adnate to the ovary, turbinate; limb loose, permanent, 5-parted; segments ovate, acuminate, 2 of them one-half smaller than the other three. Corolla funnel-shaped, having the tube much longer than the calyx, dilated a little at the apex; and the limb 5-cleft, with oblong segments. Stamens 5, capillary, very short, inserted in the base of the tube. Anthers linear, erect, shorter than the tube of the corolla. Style truncate, clavate; stigma subulate. Ovary 2-celled, 2-seeded.—A tree. Leaves elliptic-lanceolate, petiolate, quite entire, glabrous. Flowers spicate, sessile, involucrated by a large deciduous bractea each before expansion.—This tree belongs probably to Rubiaceae, but the stipula and situation of the leaves, seeds, &c. are unknown.

1 H. nigida (Hoffm. ex Willd. l. c.). ภ S. Native of Brazil, in the province of Para, where it is called Sucuba by the natives.

Stiff Himantanthus. Tree.

Cult. For culture and propagation see Psychotria, p. 599.


Linn. syst. Pentandria, Monogynia. Calyx permanent, 5-toothed. Corolla campanulate, 5-toothed; teeth oblong. Filaments 5, inserted in the middle of the corolline tube. Anthers linear, exserted. Stigma 1. Capsule woody, 2-valved. Seeds winged.—Trees, natives of Caracas. Leaves opposite. Flowers terminal, trichotomous, panicled, sweet-scented. This is a very doubtful genus from the description given by Willdenow; but according to Richard it is related to Cinchonaceae, in consequence of the winged seeds; but the stipula are not mentioned, and the leaves are said to be deeply and remotely toothed; and therefore it ought probably to be excluded from Rubiaceae.

1 S. erythroxylos (Willd. l. c.) leaves oblong-rhomboid,
toothed at the apex, downy beneath. 7. S. Native of mountain woods, about Caracas.

Red-wooded Sickingia. Tree or shrub.

2 S. LONGIFOLIA (Willd. 1. c.) leaves oblong-ovate, quite entire, glabrous. 5. S. Native along with the preceding.

Long-leaved Sickingia. Tree.

Cult. See Psychotria, p. 599, for culture and propagation.

CCXXVIII. CALYSPHY' RUM (from καλύξ, kalys, a calyx, and σφυρόν, sphyron, a little hammer; the calyx is like a peduncle). Bunge, in mem. acad. mss. Petersb. 2. p. 107.

Linn. Syst. Triandra, Monogynia. Tube of calyx linear-pentagonal, adnate to the ovarium, 10-striped; limb subcampanulate, profoundly 5-lobed; segments lanceolate, equal, acute, erect, deciduous. Corolla superior, funnel-shaped, about equal in length to the calycine segments; throat wide, glabrous; limb ample, spreading, 5-parted; segments roundish, imbriate in activation: the fifth one a little smaller than the rest. Stamens 5, inserted in the bottom of the tube of the corolla, and alternating with its segments. Anthers linear-oblong, 2-celled, dehiscing at each side by a longitudinal chink. Ovary inclosed in the tube of the calyx, 2-celled, many-ovulate. Style filiform, exserted; stigma petalate. Capsule 2-celled; cells many-seeded. Seeds disposed in 2 rows in each cell, inserted in the dissepiet, imbriate, compressed.—Perhaps the genus is more nearly allied to Lobeliaceae than to Rubiaceae.

1 C. FLUIDUM (Bunge, 1. c.) leaves opposite, almost sessile, oblong, acuminate, toothed; flowers 2-4, sessile, terminating the branches; corollas grumose. 5. G. Native of China, in gardens. Flowers size and form of those of Rhododendron Daüricum.

Flowery Calysphyrum. Shrub.

Cult. See Pômaz, p. 602, for culture and propagation.

† † Genera referred to Rubiaceae by authors, but do not belong to the order.

Bellonia, Linn. belongs to Solanaceae; and Gärtnera, Lam., Ustélíà, Will., Págîmia, Aubl. belongs to Logiaceae.


Tube of calyx adnate to the ovarium; limb variable in the different genera, sometimes toothed or parted, sometimes going away in pappus, which is at first involute, and at length expanded. Corolla tubularly funnel-shaped, usually 5-lobed, rarely 3-4-lobed; lobes obtuse; tube equal or gibbous, or spurred at the base. Stamens adnate to the tube of the corolla, but free at the apex, alternating with its lobes when they are equal in number, but varying in number in the different genera from 1 to 5. Anthers ovate, 2-celled. Style filiform; stigmas 2-3, free, or combined in one. Fruit membranous or submentumaceous, indehiscent, crowned by the limb of the calyx in the younger state; sometimes 3-celled, in this case 2 of the cells are vacant; sometimes only 1-celled. Seed in the fertile cell or solitary fruit, pendulous, exalbumbinous. Embryo straight, with a superior radicle, and 2 flat cotyledons.—Annual or perennial herbs, very rarely woody at the base. Roots of the perennial species thickish, intensely sweet-scented; of the annual species slender, white, and inodorous. Leaves opposite, exstipulate, different in diverse species, and in the same plant. In the latter case the lower ones are usually entire, and the superior ones are laciniate. Flowers disposed in cymose corymbs, usually hemiprodite, very rarely dioecious by abortion, usually furnished with from 1-3 bracteas, white, rose-coloured or bluish, but in the genus Nardostachys they are purple, and in Patrinia yellow.

The plants contained in this order are more interesting for the sake of their symmetry and neatness than on account of any particular attractions; they may be considered a connecting link between Rubiaceæ and Dipsáceæ. Most of them are pretty. The Valérianellas are useful esculents, known under the name of corn salads; Centrénthus ruber is also eaten in the same way in Sicily. Their medicinal properties are of a decisive character. The roots of Valeriana officinalis, Pu, Célica, and others are bitter, tonic, aromatic, antispasmodic, and vermifugal; they are occasionally used as febrifuges. The odour of valerian is not generally agreeable, but eastern nations procure from the mountains of Austria the roots of Valeriana Célica, with which they perfume their baths; and the natives of India at this day employ the Nardostachys, the spikenard of old times, as a perfume, and against hysterics and epilepsy.

Synopsis of the genera.


6 Fe'dia. Limb of calyx with 4 unequal subulate lobes (f. 113. c.). Corolla filiform, with an unequally 5-lobed sublingent limb (f. 113. f.). Stamens 2 (f. 113. h.). Stigma bifid (f. 113. g.). Fruit spongy (f. 113. b.), indehiscent, 3-celled.


8 Centránthis. Limb of calyx involute at the time of flowering (f. 114. b.), but afterwards evolute and deciduous, of many-feathered bristles (f. 114. h.). Corolla with a narrow tube, which is spurred at the base (f. 114. c.), and a regular 5-

9 Valeriana. Limb of calyx the same as in Centranthus. Corolla with an obconical or cylindrical tube (f. 115. b.), which is equal or gibbous at the base, and a bluntly 3-cleft limb (f. 115. b.), rarely only 3-cleft. Stamens 3 (f. 115. b.). Fruit indehiscent, 1-celled, and 1-seeded at maturity.


Lin. syst. Tetrandria, Monongia. Limb of calyx truncate or erect, very short, somewhat 5-toothed. Corolla regular, spurred, bluntly 5-lobed. Stamens 4, adnate to the bottom of the tube of the corolla, rarely 5. Stigma trinodal-capitate. Capsule 3-celled, crowned by the limb of the calyx, usually having chaff-formed bracteas adhering to it at the base, with one of the cells fertile, and 2 usually thick.—Perennial herbs. Leaves for the most part pinnate-lobed. Flowers corymmetric, golden-yellow.

1 P. Sibirica (Juss. l. c.) stem beset with 2 rows of hairs; leaves rather fleshy: primordial ones oblong, lanceolate or spatulate, undivided and obtuse, entire, toothed, serrated, or pinnatifid towards the apex; cauline leaves pinnate, with entire, usually obtuse segments; fruit adnate to the paleae. 4. H. Native of Siberia, among subalpine rocks. Sims. Bot. mag. t. 2925. P. coronata, Fisch. in litt.; Valeria Sibirica, Lin. spec. p. 48. but not of Wild. Valeriaia Ruthenica, Wild. spec. 1. p. 181. Fédia Sibirica, Vahl, enum. 2. p. 122. Gernet. 3. fr. t. 86. f. 3. Valerianella lutea, Moench. Valeria Sibirica b hümilis, Gmel. spec. 3. p. 123. no. 3. Amm. ruth. no. 25. t. 3. Radical leaves spatulate, entire, toothed or serrated, but sometimes pinnatifid at the apex; cauline leaves pinnate. Fruit crowned by the 5-toothed limb of the calyx. Flowers yellow. Root black, strong-scented.


4 P. heterophylla (Bunge, in mem. acad. imp. peterb. 2. p. 109.) stem leafy, downy; lower leaves pinnatifid, with distant ovate-oblong coarsely toothed lobes: the terminal lobe the largest, sharply toothed or deeply lobed, acuminate; superior leaves quite entire or serrate, with oblong-linear elongated quite entire lobes; flowers corymmetric; achenia bracteate. 4. H. Native of the north of China, on the mountains. Nearly allied to P. rupéstris, but differs in the lobes of the leaves being fewer, shorter, broader, and in being variously cut, and in the upper leaves being of a different form.

Variable-leaved Patrinia. Pl. 1 foot.

5 P. Scabiosaefolia (Link, enum. 1. p. 131.) stem glabrous; radical leaves ovate or oblong, deeply serrated and lunate; cauline leaves pinnatifid, with lanceolate-linear acute segments; terminal segment very long; corylums loose, rather panicled; fruit triquetrous, naked. 4. H. Native of Dahuria. Sweet-flags. fl. gard. t. 154. Todd. bot. cab. t. 1340. P. scabiosaefolia, Fisch. in litt. Fédia scabiosaefolia, Trev. act. bonn. 13. p. 165. Flowers yellow. There is a variety of this plant having the radical leaves rather pilose, and the rest glabrous. Limb of calyx wanting or truncate.


6 P. Villosa (Juss. 1. c.) stem villous; leaves villous; radical ones petiolate, auriculate; cauline ones sessile, toothed; corylums panicled. 4. H. Native of Japan. Valeria Sibirica, Thunb. fl. damp. 5. p. 22. t. 6. but not of Wall. Fédia villosa, Vahl, enum. 2. p. 10. Peduncles axillary and terminal. Bracteas linear. Flowers yellow.

Villos Patrinia. Pl. 1 foot.

7 P. Ceratophylla (Hook. fl. bor. amer. 1. p. 290.) stem glabrous; leaves all rather fleshy, downy, petiolate; radical ones linear-lanceolate, entire, pinnatifid or bipinnatifid, with divericate lobes; cauline leaves profoundly pinnatifid, with linear segments; panicles elongated; peduncles ternately verticillate. 2. H. Native of North-west America, common on low wet soils between the Kettle Falls and Spokane, and in the valleys of the west side of the Rocky Mountains. Root thick, fusiform. Stems simple. Peduncles opposite or 3-4 in a whorl. Pedicels short, and flowers crowded. Flowers white. The roots during the spring months are collected by the Indians, baked on heated stones, and used as an article of winter and spring food. From a bitter and seemingly pernicious substance, it is thus converted into a soft and pulpy mass, which has a sweet taste, resembling that of treacle, and is apparently not wholesome.

Horn-leaved Patrinia. Pl. 1 to 1 1/2 foot. Cult. The species of Patrinia grow well in any light soil, and are easily increased by seeds.

II. NARDOSTACHYS (from nardos, nardos, a shrub, and stachys, a spike; but is so named from the plant called spikenard.) D. C. coll. mem. vitt. 1-2. prod. 4. p. 624. —Patrinia, D. Don. prod. fl. nep. p. 159.

Lin. syst. Tetrandria, Monogyna. Limb of calyx 5-parted; lobes ovate-oblong, acute, foliaceous, somewhat denticulated, permanent. Corolla regular, spurred, bluntly 3-lobed, with a bearded throat. Stamens 4, adnate to the bottom of the corolla. Stigma capitata. Capsule 3-celled, crowned by the calycine lobes, and shorter than those, but not adnate to the bracteas.—Herbs, with the habit of Scorzonerà hümilis, having very sweet-scented perennial roots, which are beset with erect fibres at the neck. Leaves entire, oblong; radical ones very long; cauline ones

1 N. Jatamani  (D. C. coll. mem. vii. t. 1.) stem villous; leaves downy; radical ones lanceolate-long: cauline leaves sub-lanceolate; fascicles of flowers opposite, pedunculate, and terminal. 2. F. Native of Nipaul, on the Himalaya mountains and Gosaingthang; in Mandon and Chitor provinces; in the provinces of Delhi, Bengal, and Deccan. Valeriana Jatamansi, Jones in asiat. res. 2. p. 405. and 4. p. 109. Roxb. in asiat. res. p. 451. D. Don, in Lamb. cinch. p. 180. with a figure. Valeriana spica, Vahl, enum. 2. p. 13. Patrunia Jatamansi, D. Don, prod. fl. nep. p. 159. Nardus Gar. ab. hort. arom. p. 193. with a figure of the root. Nardus Indica. J. Bauh. hist. 3. p. 502. Nardostachyton or Spica Nardi or Nardus Gangitns or Nardus Syrica of the ancients, and Jatamangsi of the natives of India. It had long been a desideratum among the moderns to know to what order and genus the plant belonged, which produced the spikenard of the ancients. We are indebted to that learned orientalist, the late Sir William Jones, for having first pointed it out satisfactorily, although he confounded it with another species totally distinct, and from which he has taken his botanical description and figure. This mistake arose from his not having received perfect specimens himself; but trusting wholly to the account and drawing given him by a friend, who was entirelyversed in botany, and who therefore could not be supposed to distinguish accurately two plants of the same genus. The Jatamani or Jatamangsi belongs to the genus Nardostachys, and resembles in several respects the Celtic Nard, Valeriana Céltica. The roots are simple, perpendicular, from 4 to 6 inches long, and the upper half is very thickly covered with the remains of the past leaves, resembling coarse hairs, and the smell resembles those of Valeriana officinalis. This smell, which to many would not perhaps prove grateful, has led some to doubt its being the spikenard of the ancients. Dr. Francis Hamilton, in his account of Nipaul, has expressed some doubts on the subject, but he says, "As there can be no disputing about taste, I cannot take upon myself to say how far the encomiums bestowed on the spikenard are applicable to this valerian, and the native women no doubt consider the smell very agreeable, because most of such as can afford it use oil impregnated with this root for perfuming their hair. All I can say is, that if this root is the spikenard of the Roman ladies, their lovers must have had a very different taste from the youth of modern Europe. Notwithstanding the objections that might be raised against the Jatamansi, on the ground that the perfume produced by its roots would not prove perhaps so grateful to our modern ladies, yet to the ladies of ancient Rome it might have been highly grateful, as it is to those of Nipaul at the present day. The late Sir William Jones, in two learned dissertations published in the second and fourth volumes of the Transactions of the Asiatic Society, has, indeed, so fully demonstrated by so many proofs that the Nardostachys is identical with the spikenard of the ancients, and this opinion is supported by so many concurring circumstances, that there can, I think, be no doubt now left on the subject. The Valeriana Hardwickii, with which Sir W. Jones confounded it, has short fleshy roots, sending out numerous cylindrical fibres, the radical leaves coriaceous, and those of the stem pinnate and ternate. The flowers panicked, and in other respects it differs widely."

Jatamansi or Spikenard. Pl. ½ foot.  

2 N. grandiflora  (D. C. coll. mem. vii. t. 2.) stem quite glabrous; leaves oblong, glabrous: cauline ones ovate or coriaceous; heads of flowers solitary, terminal. 2. F. Native of Nipaul, at Kamaon. Fédia grandiflora, Wall. mss. Bracteas 5-nerved, membranous, oval, longer than the capsule. Capsule downy; lobes of calyx evidently dehiscencnt.

Great-flowered Spikenard. Pl. ½ foot.

Cult. See Triplostégia, p. 680. for culture and propagation.

III. DUFRESNIA (named after Peter Dufresne, M.D., author of Histoire Naturelle et Medicale de La Famille des Valerianes, 4to, Montpelier, 1811.) D. C. coll. mem. vii. t. 3. prod. 4. p. 624.


1 D. orientalis  (D. C. coll. mem. vii. t. 3.) 2. F. Native of the Levant, between Mosul and Bagdad, where it was collected by Olivier and Bruguier.

Oriental Dufresnia. Pl. ½ foot.

Cult. This plant should be grown in a pot in a mixture of peat, loam, and sand; and placed among other alpine plants; it can only be increased by seeds.


LIN. SYST. Triandria, Monogynia. Limb of calyx toothed, permanent. Corolla spurless, regular, 5-lobed. Stamens 3. Stigma nearly undivided or trifid. Fruit 3-celled, rather membranous, indehiscent, crowned by the toothed or acerate limb of the calyx.——Annual herbs. Stems dichotomous at the tops. Leaves oblong, or linear, undivided, or toothed at the base, or the superior ones pinnatifid. Flowers solitary in the forks, or in fascicled corymbs, bracteate, small, white, rarely rose-coloured.

§ 1. Locista (from locusta, a locust; so named from some semblance in the branches). D. C. prod. 4. p. 624. Mature fruit 2 or 3-celled; one of the cells alone fertile, and gibbous on the back; the two sterile ones equal or broader than the fertile one, sometimes distinct, and sometimes coadunate, from the dissepiment having vanished.

* Mature fruit 2-celled.

VI. Valericanna.

Turgida Lamb's-lettuce. Pl. ½ to 1 foot.
5 V. gibbosa (D. C. coll. mem. t. 3. f. 3.) fruit globose, somewhat compressed, glabrous, crownless, coriaceous and flat on one side, and gibbous on the other, and furnished with 2 stripes on both sides; fertile cell turgid, cellular, and furnished with a furrow; and the 2 sterile ones smaller, and furrowed on the back; bracteas linear-oblong, spreading, quite entire; flowers subcapitate; leaves oblong-linear, entire. O. H. Native of Sicily, on the mountains in exposed places. Fédia gibbosa, Guss. 1. p. 28. Herb smoothish, 2-3 inches high. Nearly allied to V. turgida.

Gibbous-fruited Lamb's-lettuce. Pl. ½ foot.
6 V. costata (D. C. prod. 4. p. 620.) fruit roundish, a little compressed, glabrous, not crowned; fertile cell turgidly cellular and convex on the back, and the 2 sterile ones profoundly furrowed on the back; bracteas oblong, spreading, with glabrous edges; flowers subcapitate; leaves linear-oblong, quite entire. O. H. Native of the south of Tauria, in vineyards. Fédia costata, Stev. mem. mosc. 5. p. 344. Bibl. suppl. p. 28. Herb 1-2 inches long, simple, slender, smoothish. Fruit nearly allied to V. turgida and V. gibbosa, but much smaller.

Ribbed-fruited Lamb's-lettuce. Pl. 1 to 2 inches.

§ 2. Psiloceae (from ψιλός, ψιλός, slender, and κολός, κοιλός, a hollow; in reference to the narrow sterile cells of the fruit). D. C. prod. 4. p. 626. Fruit 3-celled, flattened in front; fertile cell not cellullarily turgid on the back; and the 2 sterile ones filiform, and much narrower than the fertile one, usually close and nerved.

* Limb of calyx parted into recurved stiffish teeth.


9 V. corniculata (Mey. verz. p. 49.) fruit oblong, with the 2 sterile cells filiform, and the fertile one convex on the back; crown of fruit tubular, trisulate; teeth elongated, linear, usually dentilicate, straight or hooked at the apex. O. H. Native of Caucasus, in corn-fields near Baku. Habit of plant nearer to V. uncincata than to V. echinata.

Horned-fruited Lamb's-lettuce. Pl. ½ to 1 foot.

* Limb of calyx crccit, toothed or entire, never recurved.

10 V. eriocarpa (Desv. journ. bot. 2. p. 314. t. 11. f. 2.) fruit ovate, obliquely ribbed, hispid; the 2 sterile cells of fruit

rust, t. 24. Flowers pale blue. There is a variety of this species having the upper leaves toothed or jagged according to Vahl. Lamb's lettuce is also called corn-salad; Ackerman in German, and Valerianella in Italian. It is a diminutive annual plant, common in corn-fields or sandy soils. The leaves are of a pale glaucous hue, and rather succulent. When cultivated it rises almost a foot high, and flowers in March. Gerarde tells us that foreigners using it while in England led to its being cultivated in our gardens. It is used in salads through the winter and early in spring, both as a substitute for common lettuce in those seasons, and to increase the variety of small salads. For these purposes it has long been a favourite plant in France under the denominations of mâché, doucette, salade de chanoine, and poule grass. It is raised from seed, of which a quarter of an ounce is sufficient for a bed 4 feet by 5. To answer the common demand 2 or at most 3 sowings will be sufficient, viz. a principal sowing at the beginning or towards the middle of August, a secondary sowing early in September, to furnish together crops in winter and early spring; and a smaller sowing in spring at the close of February or in the course of March, if the plants are required in continuation throughout that season, though they are apt to get rank tasted in warm dry weather. If wanted throughout summer, sow once a month, and cut the crop quite young. Sow the seeds in any bed of common mellow earth, broad cast, and rake in the seed. When the plants are up, thin them to 2 or 3 inches asunder, that they may have room to acquire some small stocky growth for gathering. For seed leave some plants in spring.

Var. ß. lasiocarpa (Rechb. l. c. f. ñ.) fruit downy.

Salad Lamb's-lettuce. Fl. April, May. Britain. Pl. ½ to 1 ft.
2 V. radia (Dufr. val. p. 57.) fruit oblong, rather tetragonal, glabrous, smooth; limb of calyx obliquely truncate, almost wanting; sterile cells of fruit combined in one, from the dissemination being incomplete, equal in size to the fertile one; bracteas linear-oblong, spreading, ciliate a little; leaves oblong-spatulate, attenuated at the base, subdenticulate. O. H. Native from Pennsylvania to Carolina, in corn-fields. Valeriana radia, Wild. spec. 1. p. 185. Fédia radia, Michx. fl. bor. amer. 1. p. 18. Bart. comp. 1. p. 20. Fruit downy, according to Michx.; but in the specimen it is obviously glabrous. Flowers pink. Perhaps only a variety of V. olistira. The young leaves are used as a salad.

3 V. exscapa (Stev. mem. soc. mosc. 3. p. 251.) fruit 2-celled, one of which is sterile, ovobate, ribbed, glabrous, sessile at the neck, and protruded at the apex, and 5-6-toothed: teeth oblong, straight, thick: leaves ligulate, glabrous; stem none. O. H. Native of Caucasus, near Gandsha. Fédia exasperata, Lev. mem. mosc. 5. p. 354. Rem. et Schultes, syst. 1. p. 366. Fédia acutus, Bibl. suppl. p. 35. Flowers pink. The fruit is said to be 2-celled, with both the cells fertile, but it is probably like the other species, having only one of the cells fertile, and the 2 sterile combined ones.


** Mature fruit 3-celled.

4 V. Turgida (D. C. prod. 4. p. 626.) fruit nearly globose, compressed on one side and concave-convex, almost awnless, glabrous; fertile cell turgid, convex and cellular on the back, and the 2 sterile cells about equal in size to the fertile one; bracteas oblong, spreading, ciliate; flowers subcapitate; leaves obvolute: upper ones oblong-linear, quite entire. O. H. Native of Tauria, in corn-fields. Fédia turgida, Stev. mem. mosc. 2. p. 178. but not of others. A very distinct species.
very narrow; limb of calyx obliquely truncate, campanulate, 6-toothed; teeth erect, the 3 front ones the shortest; bracteas adpressed, linear; leaves oblong-linear, quite entire, or toothed at the base. 


**Var. β. rugulosa** (D. C. Fl. prod. 4. p. 627.) bracteas ovate-lanceolate; habit firmer. 

O. H. Native along with the species. Fédia rugulosa, Spreng. pag. 2. p. 2. 

**Woolly-fruited Lamb's-lettuce.** Fl. April, May. CIt. 1821. Pl. $\frac{1}{2}$ to 1 foot. 

11 V. mixta (Dufr. val. p. 59. t. 3. no. 6.) fruit ovate, villos, having the 2 sterile cells very narrow; limb of calyx oblique, with 3 short teeth; bracteas linear, adpressed; leaves oblong, quite entire. 


**Mixed Lamb's-lettuce.** Fl. May, June. Cit. 1818. Pl. $\frac{1}{2}$ to 1 foot. 

12 V. MORISONI (D. C. Fl. prod. 4. p. 627.) fruit ovate, rather conical, downy; limb of calyx oblique, tridentate on one side, and furnished with 1-2 nearly obsolete teeth on the other; the 2 sterile cells of fruit filiform, much narrower than the fertile one; bracteas subulate, erect, cartilaginously ciliated; flowers corystose; leaves linear-tongue-shaped, quite entire or few-toothed at the base. 


—Mor. oxon. t. 16. f. 35. Fédia locusta olitoria, Oed. fl. dan. t. 738. Flowers purple. 

**Var. β. leioarpa (D. C. Fl. prod. 4. p. 627.) fruit glabrous.** 

O. H. Native along with the species. F. dentata, Stev. F. Morisoni, Agardh. Fédia dentata, var. leioarpa, Rehb. pl. crit. t. 62. There are varieties of this, having the leaves 3 in a whorl, and pinnatifid. 

**Morison's Lamb's-lettuce.** Fl. April, June. Britian. Pl. 1 ft. 

13 V. purecula (D. C. Fl. prod. 4. p. 627.) fruit ovate, downy, hardish, rather angular, not umbilicated; limb of calyx very short, oblique, 3-5-toothed; the 2 sterile cells of the fruit filiform, and very narrow; bracteas linear, erect, ciliately denticulated, with membranous margins; flowers corystose; leaves linear-oblong, quite entire, or hardly undenticate at the base. 


**Downy Lamb's-lettuce.** Pl. $\frac{1}{2}$ foot. 

14 V. TRUNCATA (D. C. Fl. prod. 4. p. 627.) fruit ovoid, downy, convex on the back, and bicostate in front; the 2 sterile cells of fruit filiform, much narrower than the fertile one; limb of calyx ear-formed, obliquely truncate, quite entire, equal in length to the fruit; bracteas linear, dilated and concave at the base, ciliately serrated; flowers corystose; leaves oblong, quite entire. 

O. H. Native of Caucausus, and Cydonia, in corn-fields; also of the Island of Melos, and in Cazar and Theodosia. Fédia truncata, Rehb. pl. crit. t. 115. Fédia dentata, Sieb. ex Rehb. V. auricula, D'Urrv. enum. 5. but not of D. C. 

**Truncate-calyxed Lamb's-lettuce.** Pl. $\frac{1}{2}$ foot. 

§ 3. Platyglâce (from Platy-ge, platus, broad, and kolas, a hollow; in reference to the broad, hollow, sterile cells of the fruit). D. C. Fl. prod. 4. p. 627. Fruit 3-celled, furrowed in front; sterile cell not ciliately gibose on the back, and the two sterile cells broader than the diameter of the fertile one, or nearly equal to it; the transverse section nearly orbicular. 

* Limb of calyx entire or toothed; erect; teeth not hooked at the apex. 

15 V. auricula (D. C. Fl. fr. suppl. p. 492. coll. mem. t. 3. f. 6.) fruit ovate, glabrous; limb of calyx obliquely truncate, almost quite entire, acutely auricle-formed; the 2 sterile cells of the fruit broader than the fertile one; bracteas spreading, linear, glabrous; flowers disposed in dichotomous corymbs, rather loose; leaves oblong, quite entire, or toothed at the base. 

O. H. Native of Europe, in fields, especially in the south. Fédia auricula, L. gen. helv. t. 1. p. 84. t. 4. Rehb. pl. crit. t. 68. Fédia olitoria, Gaertn. fr. t. 2. p. 86. Flowers pink. This species is often confused with V. dentata, and numerous others. There is a variety of it with pinnatifid leaves and villous fruit, according to Rehb. 

**Var. β. laxiflora** (D. C. Fl. prod. 4. p. 626.) dwarf; leaves obovate-oblong. 


**Auricled-calyxed Lamb's-lettuce.** Fl. May, June. Cit. 1821. Pl. $\frac{1}{2}$ foot. 

16 V. dentata (D. C. Fl. fr. no. 3331.) fruit ovate, glabrous, smoothish, chinky in front; limb of calyx obliquely truncate, auricle-formed, tridentate; the 2 sterile cells of the fruit broader than the fertile one; bracteas spreading, linear-lanceolate, glabrous, hardly ciliated; flowers dichotomously corystose, rather loose; leaves oblong-linear, quite entire. 

O. H. Native of Europe, in woods; and of Caucausus, near Rakau, in corn-fields. Dufr. val. p. 57. t. 3. no. 5. Fédia dentata, Vahl, enum. 2. p. 20. exclusive of the syn. of Moris. Valerianâ dentata, Willd. spec. 1. p. 183. V. rimosa, Bast, journ. bot. 1814. 1. p. 20. Val. olitoria, Sturm. deutsch. fl. with a figure. Flowers blue. This is an intermediate plant between V. auricula and V. *pumila*, and probably not distinct from the former. 

**Toothed-calyxed Lamb's-lettuce.** Pl. $\frac{1}{2}$ foot. 

17 V. pumila (D. C. Fl. fr. no. 3335.) fruit nearly globose, inflated, glabrous, engravexen in front, retuse at the apex; limb of calyx tridentate, short, unequal; the 2 sterile cells of the fruit broader than the fertile one; bracteas spreading, lanceolate, with membranous villosely-ciliated margins; flowers corystose; leaves oblong-linear, deeply toothed at the base. 


**Var. β. laxiflora (Rom. et Schultes, syst. 5. p. 366.) fruit** villous. 


18 V. spheerocarpha (D. C. prod. 4. p. 628.) fruit globose, umbilicate on one side, and convex and bicostate on the other; limb of calyx tridentate, one of the teeth longer than the others; bracteas spreading, lanceolate, acute, with scarious serrately ciliated edges; leaves linear-lanceolate, rather scabrous: uppermost ones pinnatifid at the base; stem smooth. ☺ H. Native of Sicily, in pastures on the mountains. Fedia spheerocarpha, Guss. prod. 1. p. 28. pl. rar. p. 14. t. 4. f. 1.


19 V. cyniocaarpha (Meyer. verz. pl. p. 49.) fruit nearly linear, with the 2 sterile cells curved, and the fertile cell rounded on the back, and nearly equal; crown of fruit campanulate, 3 and sometimes 4-toothed: the lateral tooth elongated, linear, and straight, the rest usually obsolete. ☺ H. Native of Caucasus, near Swant, in arid places.


20 V. trigonocaarpha (D. C. prod. 4. p. 628.) fruit trigonal, glabrous, broadly excavated in front, almost without a crown, with callous angles: the 2 sterile cells of the fruit larger than the fertile one; bracteas oblong-linear, glabrous, spreading; flowers capitate: leaves quite entire: lower ones ovate-oblong, upper ones oblong, ciliated at the base. ☺ H. Native about Constantinople, where it was collected by Castagne.


** Teeth of calyceous limb hooked at the apex.

21 V. hamata (Bast, in D. C. prod. 4. p. 628.) fruit ovoid, villous outside, somewhat tetragonal, engraved in front: the 2 sterile cells about equal in breadth to the fertile one; limb of calyx spreading, broader than the fruit, quite glabrous inside, and cleft into 6 lobes beyond the middle; lobes awned, hooked at the apex; bracteas adpressed, oblong, ciliated; flowers rather densely capitate; upper leaves linear, entire or tripartite, and are as well the stem glabrous. ☺ H. Native in the region of the Mediterranean. D. C. coll. mem. t. 3. f. 7. V. coronata, Guss. prod. 1. p. 25. V. coronata integrifolia, Rchb. pl. crit. 1. p. 54. t. 66. f. 1.—Col. echpr. t. 209. Fedia coronata of many authors. Flowers pink.


22 V. coronata (D. C. prod. 4. p. 628.) fruit ovoid, villous, somewhat tetragonal, engraved in front: the 2 sterile cells about equal in breadth to the fertile one; limb of calyx cup-shaped, broader than the fruit, hairy inside, cleft into 6 lobes beyond the middle: lobes awned, hooked at the apex; bracteas adpressed, ciliated; flowers densely capitate; upper leaves pinnatifid, and are as well the stem downy. ☺ H. Native of the region of the Mediterranean. V. coronata, D. C. fl. fr. no. 3333. Dufr. val. 60. t. 3. f. 2. Fedia Sicula, Guss. prod. 1. p. 25. Fedia coronata, Rchb. pl. crit. t. 66. f. 3 et Y. Vahl, enum. 2. p. 20. Flowers pink.


** * Limb of calyx inflated, closed by the inflated calyceous teeth.

23 V. vesicaria (Meen-ch. meth. p. 497.) fruit villous, crowned; limb of calyx bladdery, inflated, 6-toothed; teeth conning, acute; the 2 sterile cells of fruit a little smaller than the fertile one, or nearly equal in size to it; bracteas adpressed, ovate, ciliated, shorter than the fruit; leaves entire or toothed; stem rather villous. ☺ H. Native in the region of the Mediterranean, in corn-fields. D. C. fl. fr. 4. no. 3332. coll. mem. t. 3. f. 8. Dufr. val. p. 60. t. 3. f. 9. Fedia vesicaria, Vahl, enum. 2. p. 20. Rchb. pl. crit. 1. t. 70. Valeriana vesicaria, Willd. Val. locusta, β, vesicaria, Lin. Sibth. et Smith, fl. grac. t. 34. Flowers linc.


§ 4. Solenocaer'ce (from σωλην, solein, a tube, and κολοκ, kolos, a hollow; in reference to the sterile cells of the fruit). D. C. prod. 4. p. 629. Fruit 2-celled, broadly furrowed in front; the fertile cell not cellulyarly gibbose on the back, and the 2 sterile cells broader than the fertile one, and curved, and therefore the transverse section is triluate.

* Lobes of calyx hooked a little.

24 V. platyloba (Dufr. val. 59. t. 3. f. 1.) fruit ovoid, villous outside, rather tetragonal, broadly furrowed in front, boat-shaped; limb of calyx spreading, broader than the fruit, rather hairy inside, 6-lobed to the middle; lobes ovate, each furnished with a hooked mucron; bracteas adpressed, ciliated, ovate-oblong, sub-capitate; upper leaves toothed, and are as well the stem glabrous. ☺ H. Native in the region of the Mediterranean. D. C. coll. mem. 3. f. 9. Fedia discoides, Rchb. pl. crit. 1. p. 54. t. 67. Fedia rotata, Rchb. i. c. p. 93. Flowers pink.


* * * Limb of calyx erect.


† Species not sufficiently known.

26 V. chenopodiifolia (D. C. prod. 4. p. 629.) plant dichotomous; leaves ovate, acute, toothed below; cymes naked, divericate, dichotomous; filaments long. ☺ H. Native of Virginia. Fedia chenopodiifolia, Pursh, fl. amer. sept. 2. p. 727.

Goose-foot-leaved Lamb's-lettuice. Pl.

Cult. The seeds of all the species only require to be sown in the open ground in the early part of spring. All the species answer very well for spring salad.

V. ASTREPHIA (from a, priv., and στρεφω, strepho, to turn; the calyx is not turned back at the time of flowering, as in Valeriana.) Dufr. val. p. 56. exclusive of many species. D. C. coll. mem. vii. prod. 4. p. 629.—Hemesotria, Rafin. ann. gen. phys. 6. p. 88.—Valeriana species, Ruiz et Pav. Smith.—Fedia species, Kunth.

Lin. syst. Tridndria, Meumgynia. Tube of calyx very short, somewhat 5-toothed or subcampanulate. Corolla funnel-shaped, 5-toothed, gibbos on one side at the base, and therefore furnished with a kind of spur. Stamens 3. Style 3-cleft at the apex; stigmas slender. Fruit 2-celled, one of the cells alone fertile; and the other is sterile, and marked by a furrow in the middle, and is therefore probably formed of 2 cells, having the partition between
them obliterated. —Nearly glabrous herbs. Radical leaves rhomboid, cut; cauline ones impari-pinnate, with oval-oblong, deeply toothed segments. Flowers disposed in panicles or corymb, white.—Habit of Valeriana, and the fruit almost of Valeriana, but is easily distinguished from both these genera in the corolla being gibbously spurred on one side at the base, and in the style being 3-clawed.


Herb hardly a hand high. Flowers white.

Cherry-like Asteriæ. Pl. \(\frac{1}{2}\) to \(\frac{1}{2}\) foot.

2. A. CRERIS (Dufr. val. p. 13.) stem glabrous, as also at the nodi; panicle elongated, with dichotomous branches, floriferous in the axis of the forks; corolla gibbous at the base; limb of calyx sub-campanulate, almost entire. \(O. H.\) Native of Chili, among bushes, and in meadows and corn-fields. Valeriaïna crispa, Ruiz et Pav. 1. p. 41. Herb 2 feet high. Flowers white.

Curled Asteriæ. Pl. 2 feet.

3. A. LAAXA (Hook. et Arn. in bot. misc. 3. p. 364.) plant herbaceous, glabrous; radical leaves ovate-cordate, bluntly toothed; cauline leaves lyrate-pinnatifid, terminal lobe the largest; panicle loose, divaricata; ultimate pedicels short, crowded; fruit ovate, excavated on one side, 3-ribbed on the back, and crowned by an annular ring.—Native of Chili, about Concepcion. Fedia laxe, Hook. et Arn. in Beech. voy. pt. bot. p. 28. This species approaches near to Fedia paniculata, but that plant is pubescent, and has a pappose fruit.

Loose-flowered Asteriæ. Pl. 1 foot.

4. A. LOBA (Hook. et Arn. in bot. misc. 3. p. 364.) leaves pinnate-lobed; lobes distinct, coarsely toothed; terminal lobe broadly ovate, lateral ones oblong, much smaller; lower teeth looking downwards, upper ones upwards; rachis glabrous; corymbs pedunculate, opposite, distant, disposed in a panicle; fruit glabrous.—Native of Chili.

Var. \(\alpha\); stem beset with long hairs. The stem below the last pair of opposite cauline leaves is hairy, above them it is glabrous.

Var. \(\beta\); stem glabrous.—Native of Chili, about Valparaíso.

Lobed-leaved Asteriæ. Pl. 1 foot.

Cult. A. cheroshyloides should be treated like other tender annuals; the rest should be protected in winter by placing them in a frame or green-house. All are only to be increased by seeds.


L. syxs. Diandria, Monogynia. Limb of calyx short and straight; lobes 4, subulate, unequal (f. 113. c). Corolla with a filiform spurred tube (f. 113. a.), and an unequally 5-lobed subrinfert limb (f. 113. f.). Stamens 2 (f. 113. h.). Stigma bifi幼稚 (f. 113. k.). Fruit indeliscent (f. 113. b.), rather spongy, 3-celled; the 2 sterile cells narrow, and the fertile one broader and 1-seeded.—Glabrous annual herbs. Leaves entire or toothed. Flowers capitately corymbose or cymose, rose-coloured or purple. Bracteas adpressed.


—Mor. oxon. sect. 7. t. 16. f.

27.—Piss. mon. t. 5. Stem purplish. Flowers red. This is a very ornamental annual. The fruit is like a cornucôpia.


2 F. scorpiôœs (Duf. val. p. 55. t. 1.) leaves ovate, petiole: lower ones quite entire; middle ones irregularly toothed: upper ones ovate-lanceolate, hardly pinnatifid; flowers cymose, unilateral and sessile along the two branches of the cyme. \(O. H.\) Native of the north of Africa, about Tangiers. Flowers purple.

Scorpion-like-cymed Fedia. Pl. \(\frac{1}{2}\) foot.

† Species not sufficiently known.

3 F. paniculâtâ (Colla, app. 3. p. 36.) lower leaves spatulate, nearly entire: middle ones lanceolate, obsoletely toothed: upper ones linear-lanceolate, quite entire; stems erect, glabrous; pedicels dichotomous. \(O. H.\) Native country unknown. Perhaps a species of Valerianaëlæ.

Panicled Fedia. Pl. 1 foot.

Cult. The seeds of the species of Fedia only require to be sown in the open border in spring, like other hardy annuals. A light soil suits them best.


L. syxs. Tràndria, Monogynia. Margin of calyx straight, quite entire. Tube of corolla furnished with a short spur at the base, and gibbous in front; limb 5-cleft, bilabiate. Stamens 3. Capsule cartilaginous, 1-celled, 2-winged; but the capsule may be truly said to be 3-celled, the 2 empty or abortive cells forming the wings. —A glabrous herb, with a habit between Centrînthus and Fedia, but the flowers are triandrous, and the fruit is singularly distinct. Flowers monoeocious, rose-coloured, crowded, in whorles. Bracteas multifid, with subulate segments.

1 P. conqêsta (D. C. prod. 4. p. 631.) \(O. H.\) Native of the north-west coast of America, on the banks of streams and moist rocks, along the shore near the mouth of the Columbia, where it was collected by Douglas. Valerianâlæ congêsta, Lindl. bot. reg. t. 1095.

Var. \(\beta\), minor (Hook. fl. bor. amer. 1. p. 291.) leaves narrow. \(O. H.\) Native along with the species. Valerianâlæ parviflora, Doug. mss.

Crowded-flowered Plectritis. Pl. July. Clt. 1826. Pl. \(\frac{1}{2}\) to 1 foot.

Cult. The seeds of this plant only require to be sown where the plants are intended to remain in the open border.

LIN. Syst. Monandria, Monegynia. Limb of calyx involute (f. 114. b) when the flower is in blossom, but afterwards it unfolds into a deciduous pappus; composed of many plumose bristles (f. 114. h). Corolla with an oboconical tube, which is spurred at the base (f. 114. c), and a regular 5-lobed limb (f. 114. d). Stamens 1 (f. 114. e). Fruit indehiscent, 1-celled, and 1-seeded at maturity.—Quite glabrous European herbs. Leaves undivided or pinnate. Flowers red or white, unilateral along the branches of the panicle, which is corymbose.

* Spur of flower elongated. Flowers red, very rarely white.

1 C. longifolius (Stev. obs. pl. ross. p. 76.) leaves lanceolate-linear, quite entire; spur one-half shorter than the tube of the corolla, and about equal in length to the ovary; corolla twice the length of the limb of the corolla. ♀. H. Native of Armenia, about Tiflis, among rocks. C. angustifolius, Bieb. fl. taur. 1. p. 67. but not of D. C. The leaves are intermediate in breadth between the following two, and are probably glaucous like them. Corollas red, an inch long.


2 C. angustifolius (D. C. fl. fr. 4. p. 259.) leaves linear-lanceolate, quite entire; spur one-half shorter than the tube of the corolla, and about equal in length to the ovary; corollas much exserted. ♀. H. Native of Spain, south of France, Switzerland, Italy, Greece, on the mountains in stony open places. Dufr. val. p. 39. Val. rubra, β. Lin. spec. p. 44. Valeriana angustifolia, Cav. icon. 4. t. 353. Sibth. and Smith, fl. grece. t. 29. but not of Host. Val. monandria, Wil. delph. 2. p. 280. Flowers red, half an inch long. This plant does not change under cultivation.


3 C. ruber (D. C. fl. fr. 4. p. 632.) leaves ovate or lanceolate: upper ones unequal at the base, toothed a little; spur one-half shorter than the tube, and much longer than the ovary; corollas exserted by the corolla but a very little. ♀. H. Native of the south of Europe, the Levant, north of Africa, and on Mount Vesuvius, and now cultivated in almost every garden. It is to be found in some parts of Britain, on chalk cliffs, on walls, and among rubbish, but is probably an escape from gardens. Stev. obs. pl. ross. p. 67. C. maritimus, Gray, brit. arr. 2. p. 479. C. latifolius, Dufr. val. p. 38. H. B. et Kunth, nov. 3. p. 323. Valeriana rubra, All. ped. 1. p. 1. Valeriana rubra, a, Lin. spec. p. 44. engl. bot. t. 1531.—Berg. phyt. t. 141. Do- don, pempt. 351. f. 1.—Riv. mon. t. 3. f. 2. Plant of a glaucous hue. Flowers red.—There is a variety of this with narrow leaves, and another with white flowers. In this and the preceding the root is sweet-scented, and the stem suffruticos at the base.


* Spur of flower very short (f. 114. c). Flowers white.

4 C. nervosum (Moris. elench. sard. 2. p. 4.) leaves all elliptic or oblong-lanceolate, attenuated into the petioles, 3-7-nerved, quite entire; flowers cymose corymbose; spur very short. ♀. H. Native of Corsica, at a place called Alle Trinita, and of Sar- dinia, on the mountains. Valeriana trinitensis, Viv. fl. cors. p. 3. add. fl. italic. p. 67. Flowers white.

Nerved-leaved Spurred-Valerian. Pl. 1 foot.


Cult. All the species are elegant border-flowers. They will grow in any common soil, or on walls or rock-work, and are all readily increased by seed.

IX. VALERIA'NA (said by some to be named after one Valerius, who is said to have used this plant first in medicine; and by others to be from valere, to be in health, on account of the medicinal qualities of V. officinalis). Neck. elem. 1. p. 128. D. C. fl. fr. 4. p. 238. Rœm. et Schultes, syst. no. 119. D. C. prod. 4. p. 632.—Valeriana, Phylläctis, and Aesthæria, Dufr.—Valeriana species and Oligacée species, Wild.

LIN. Syst. Trîndria, Monogyňia. Limb of calyx involute in the time of blossom, but it unfolds itself at last into a deciduous pappus, which is composed of many plumose bristles (f. 115. d). Corolla with an oboconical or cylindrical tube (f. 115. b), which is equal at the base or gibbous, but not spurred, with a bluntly 5-cleft limb (f. 115. b), rarely 3-cleft. Stamens 3 (f. 115. b). Fruit indehiscent, 1-celled and 1-seeded at maturity. —Herbs or subshrubs. Leaves variable even in the same plant. Flowers corymbose, capitate or panicled, nearly all white, rarely blue, rose-coloured, or yellow.


Stiff Valerian. Pl. tufted.

2 V. tenuifâlia (Ruiz et Pav. fl. per. 1. p. 39. t. 65. f. d.) plant stemless; leaves crowded in a stellate manner, linear-subulate, ciliated at the base, very unequal, outer ones very long; corollas sessile, crowded, head-formed; corollas 3-cleft; genitals exserted. ♀. H. Native of Peru, on the tops of the Alps. Phylläctis tenuifolia, Pers. ench. 1. p. 39. Dufr. val. p. 55. Flowers white.

Fine-leaved Valerian. Pl. tufted.
3 V. spathulata (Ruiz et Pav. fl. per. 1. p. 40. t. 68. f. b.) plant tufted; stems many, simple, 2-edged; leaves linear-spatulate, obtuse, downy, hardly ciliated; corollas connate, terminal, involucre; corollas 3-5-cleft; stamens exserted. 2. F. Native of the alps of Peru, at Bomombo, in the province of Tarma. Phyllacis spathulata, Pers. ench. 1. p. 39. The corolla is said, in the text of the fl. per., to be 3-cleft, but it is drawn 5-cleft in the figure; however, in the specimen examined it is obviously 3-cleft. Flowers white.

Spatulate-leaved Valerian. Pl. \( \frac{1}{2} \) foot.

4 V. obovata (Schultes, mant. 1. p. 214.) plant stemless, tufted; root fusiform; leaves disposed in a stellate manner, linear-spatulate, obtuse, hairy; flowers unbellately capitulate, involucrated. 2. N. Native of North America, on dry hills on the banks of the Missouri, about Arikaree. Phyllacis obovata, Nutt. gen. amer. 1. p. 21. Flowers and fruit unknown.

Obovate-leaved Valerian. Pl. tufted.

Sect. II. Arctiastrum (from Arctia and astrum, an affixed signification, like; the plants contained in the section have the habit of species of Arctia.) D. C. pro. 4. p. 633. Corolla 4-5-cleft, with a long tube. Flowers yellow, few, hidden among the upper leaves. Leaves imbricate, coriaceous, thick, quite entire. Stems fruticulose. Perhaps a proper genus.

5 V. arctoideos (H. B. et Kunth, nov. gen. amer. 3. p. 324.) stems suffruticosus, tufted, rather procumbent; leaves imbricated, linear-terete, fleshy, glabrous, dilated at the base, and ciliated; flowers 1-3-together, terminal, sessile; corollas 4-5-cleft; stamens exserted. 2. F. Native of Quito, on the tops of the Andes. Corolla yellow, glabrous, with a very long filiform tube. Style inclosed. Fruit unknown.

Arctiast-like Valerian. Pl. procumbent and tufted.

6 V. sedifolia (D'UrV. fl. mal. p. 44.) stem suffruticosus, spreading; branches ascending, short; leaves imbricated, thick, coriaceous, resinous at the apex, narrowed at the base, very minutely ciliated; flowers 5-7, terminal, propped by the leaves; corolla 5-cleft; stamens equal in length to the corolla. 2. F. Native of the Falkland Islands, upon nearly naked rocks on Mount Chatelux. Flowers yellow.


Sect. III. Phu, or Valeriana vicie (this section is supposed to contain the true species of Valeriana.) D. C. pro. 4. p. 653. Corolla 5-cleft, usually white, rarely red or bluish.

§ 1. Stems suffruticosus, not climbing. Leaves undivided.

7 V. alpifolia (H. B. et Kunth, nov. gen. amer. 3. p. 325.) stems shrubby, procumbent; leaves spatulate, fleshy, quite glabrous, approximate; heads of flowers pedunculate; corolla 5-cleft; style exerted; stamens inclosed. 2. F. Native of the kingdom of Quito, in frigid places at the foot of Mount Antisanza, at Chussulangi. Habit of Globularia cordifolia. Flowers white. Allied to V. spathulata.

Alpnast-leaved Valerian. Pl. procumbent.

8 V. microphylla (H. B. et Kunth, nov. gen. amer. 3. p. 325. t. 275.) stem shrubby, erect; branches terete, clothed with fine down; leaves ovate-oblong, quite entire, 3-nerved, rather coriaceous, downy above; panicles crowded; corolla 5-cleft; stigmas inclosed; fruit glabrous. 2. F. Native on the Andes, about Pasto, in frigid places. Corolla white, with a red throat.

Small-leaved Valerian. Pl. 1 foot.

9 V. connata (Ruiz et Pav. fl. per. 1. p. 59. t. 67. f. c.) stem shrubby, ascending, much branched, with 2 rows of down; leaves lanceolate, connate, quite entire, glabrous, ciliated at the base; corollas compact, opposite, almost sessile, disposed in an interrupted raceme; stamens equal in length to the corolla, which is 5-cleft. 2. F. Native of Peru, in the province of Tarma, at Dizemo, among rocks. Flowers small, white.

Connate-leaved Valerian. Shrub 2 feet.

10 V. quadrangularis (H. B. et Kunth, nov. gen. amer. 3. p. 326.) stem suffruticosus, and is as well as the branches quadrangular, glabrous, pilose at the nodi; leaves ovate-oblong, denticulated at the base, 3-nerved, rather fleshy, glabrous; corollas dichotomous, divaricate; corolla 5-cleft; stamens inclosed; fruit glabrous. 2. F. Native of Peru, on the Andes. Corolla red, gibbous at the base. Pappus about 14-rayed.

Quadrangular-branched Valerian. Shrub.

11 V. triplicata (H. B. et Kunth, nov. gen. amer. 3. p. 326.) branches woody, terete, glabrous; branchlets angularly furrowed; leaves 3 in a whorl, sessile, lanceolate-oblong, coriaceous, glabrous; heads by threes, axillary and terminal, pedunculate; corolla 5-cleft; stamens exserted. 2. F. Native of New Granada, near Santa Fe de Bogota, in frigid places on the mountains.

Three-leaved Valerian. Shrub.

12 V. hirtella (H. B. et Kunth, nov. gen. amer. 3. p. 327.) stem suffruticosus, terete, hairy; branchlets hairy; leaves linear-lanceolate, quite entire, 3-nerved, somewhat coriaceous, rather pilose above, and glabrous beneath; panicles much branched; fruit glabrous. 2. F. Native of the Andes of Quito, on the top of Mount Assauy. Flowers unknown. Pappus 6-8-rayed.

Hairle Valerian. Shrub 2 to 3 feet.

13 V. chamissonis (Cham. et Schlecht, in Linneae. 3. p. 129.) stem shrubby, erect, downy at the tops, and densely leafy; leaves ovate-lanceolate, coarsely and bluntly serrated; panicles straight, pyramidal; corolla 5-cleft; stamens equal in length to the corolla. 2. F. Native of the interior of Brazil. Flowers small. Fruit unknown.

Germander-leaved Valerian. Shrub.

§ 2. Stems scandent, shrubby, rarely herbaceous. Leaves undivided.

14 V. tomentosa (H. B. et Kunth, nov. gen. amer. 3. p. 327.) shrubby, scandent; branches terete, clothed with hoary tomentum; leaves ovate, cordate, denticulated at the base, membranous, downy above, and clothed with white tomentum beneath; corollas axillary, pedunculate, dichotomous; corolla 5-cleft; stamens exserted. 2. G. Native of the temperate parts of Quito, in the valley of Choto. Corolla small, white, gibbous at the base. Fruit unknown.

Tomentose Valerian. Shrub cl.


Clematis-like Valerian. Shrub cl.

16 V. cassifolia (H. B. et Kunth, nov. gen. amer. 3. p. 328. t. 274.) shrubby, scandent; branches terete, glabrous; leaves ovate-elliptic, obtuse, quite entire, rather fleshy, glabrous; corollas trichotomous, divaricate; corolla 5-cleft, pilose outside; stamens inclosed; style exerted. 2. G. Native of New Granada, in frigid places, near La Erre and Sebondo. Fruit unknown.

Thick-leaved Valerian. Shrub cl.

17 V. laurifolia (H. B. et Kunth, nov. gen. amer. 3. p. 528.) shrubby; branches terete, glabrous, tetragonal while young; leaves ovate-oblong, acuminate, quite entire, rather coriaceous, quite glabrous and shining; panicles branched, with the branchlets and bracteas downy. 2. G. Native of New Granada.

Laurel-leaved Valerian. Shrub cl.

18 V. scändens (Lin. spec. p. 47, but not of Forsk.) stem glabrous, herbaceous, scendent; branches terete; leaves trilobate; leaflets quite entire; the terminal broad-ovate, acuminate, large: lateral ones lanceolate, smaller; panicles axillary, loose; stems exserted; fruit rather pilose.

Climbing Valerian. Pl. cl.

§ 3. Stems herbaceous, never scendent. Leaves all undivided.

* Species natives of America.

19 V. pilosa (Ruiz et Pav. fl. per. 1. p. 39. t. 66. f. a.) stem herbaceous, erect, pilose; leaves linear-lanceolate, pilose, with revolute margins: radical leaves obtuse: cauline ones few, dist. acute; corymb racemose; stems exserted.
2. G. Native of Peru, in frigid places. The whole herb has the habit of Plantago albicans. Corollas white.

Pilose Valerian. Pl. 1 foot.

20 V. longifolia (H. B. et Kunth, nov. gen. amer. 3. p. 330.) stems herbaceous, terete, rather hairy; leaves quite entire, coriaceous, glabrous: radical ones linear-lanceolate, petiolate; cauline ones linear, sessile; panicle branched; corolla 5-cleft, glabrous; stems exserted. 2. G. Native of New Granada, in alpine places. There is a variety of this with the stem 1-3 feet high, and the radical leaves 3-12 inches long. Corollas white. Nearly allied to V. pilosa and V. plantaginea.

Long-leaved Valerian. Pl. 1 to 3 feet.

21 V. salicaria-leaved (Vahl, enum. 2. p. 16.) plant glabrous, herbaceous; stem simple, striated, rooting at the bottom; leaves lanceolate, quite entire, sessile: upper ones cordate at the base; corymbs terminal, decomposed.—Native of Buenos Ayres.

Salicaria-leaved Valerian. Pl. 1 ½ foot.

22 V. plantaginea (H. B. et Kunth, nov. gen. amer. 3. p. 330.) stem herbaceous, erect, tetragonal, farrowed, glabrous, pilose at the nodi; leaves quite entire, coriaceous, glabrous: radical leaves oblong-spicate, petiolate: cauline ones lanceolate, sessile, connate at the base; panicles branched; stems exserted; fruit glabrous. 2. G. Native of Quito, in arid places, on the plains of Antisana, and on the declivities of Mount Pichincha. Flowers white. Pappus of fruit few-rayed.

Plantain-like Valerian. Pl. 4 to 6 feet.

23 V. lapathifolia (Vahl, enum. 2. p. 11.) stem herbaceous, striated, glabrous; leaves ovate-cordate, almost quite entire, undivided, villous above on the nerves, the rest of the leaf glabrous: superior leaves sessile; corymb trichotomous.—Native of the Straits of Magellan.

Dock-leaved Valerian. Pl. 1 ½ foot.

24 V. urticifolia (H. B. et Kunth, nov. gen. amer. 3. p. 330. t. 275.) stem herbaceous, erect, terete, hairy; leaves roundish-ovate, subcordate, acute, sinuately toothed, rather pilose above: lower leaves petiolate: upper ones sessile; panicles branched; corymbs downy; corolla gibbous at the base; genitals exserted; fruit glabrous. 2. G. Native of New Granada and Peru. Flowers white. Root a round tuber.

Nettle-leaved Valerian. Pl. 1 foot.

25 V. scorpioides (D. C. prod. 4. p. 635.) stem rather herbaceous, erect, terete, downy; leaves ovate or roundish, denticate crenated, pilose above and on the margins; panicle corymbose, trichotomous; branches of panicle elongated, bearing unilater flowers; fruit small, ovate, glabrous. 2. H. Native of Mexico, in the valley of Tolucca, where it was collected by Berlandier. Habit almost of Feidia scorpioides.

Scorpion-like Valerian. Pl. 1 foot?

26 V. praeterea (H. B. et Kunth, nov. gen. amer. 3. p. 329.) stem herbaceous, farrowed, glabrous: cauline leaves sessile, ovate-cordate, long-acuminated, sharply toothed, stiff, glabrous; panicles much branched; fruit villous. 2. F. Native of Mexico, near Pascuaro. Flowers unknown. Pappus of calyx 11-12-rayed.

Tall Valerian. Pl. 3 to 4 feet.

27 V. macrorhiza (Poepp. pl. exsic. no. 918.) glabrous; radical leaves spatulate, obtuse, tapering into the petiole, which is twice the length of the limb; scape a little higher than the leaves; panicles racemose spicate, terminal, having the racemes opposite: the lower ones pedunculate; floral leaves linear. 2. F. Native of Chili, near the baths of Villa Vicencio and La Quebrada de San Isidro, and on the Andes of Mendoza. Root thick. Flowers white. Stamens exserted. Habit almost of V. coarctata.

Long-rooted Valerian. Pl. 1 foot.

28 V. coarctata (Ruiz et Pav. fl. per. 1. p. 40. t. 68. f. a.) stems herbaceous, erect, simple, striated, downy; leaves narrow-lanceolate, attenuated, dentilicate, ciliated: cauline leaves few; flowers crowded in whorles, disposed in a somewhat interrupted spike. 2. G. Native of Peru, at Huassa-Huassi, in frigid places in the province of Tarma. Flowers white. Fruit said to be oblong, and crowned by 5 scales. Astréphia coarctata, Dufr. var. p. 30.

Coarctate Valerian. Pl. 1 foot.

29 V. serrata (Ruiz et Pav. fl. per. 1. p. 40. t. 68. f. c.) plant tufted, glabrous; stems striated; leaves cuneate-lanceolate, serrated from the middle to the apex; flowers in crowded whorles, disposed in an interrupted elongated spike. 2. F. Native of Peru, in cold places. Astréphia serrata, Dufr. val. p. 51. Flowers white. Fruit as in V. coarctata, to which it comes very near.

Serrated-leaved Valerian. Pl. ½ foot.


Fleshy Valerian. Pl.

31 V. oblongifolia (Ruiz et Pav. fl. per. 1. p. 40. t. 65. f. a.) plant herbaceous, pilose; stems many, striated, almost leafless; radical leaves oblong, dentate, obtuse: cauline ones linear, serrate-cul; corymb contracted. 2. F. Native of Peru, on the alps in the province of Tarma, towards Pasco. Flowers white.

Oblong-leaved Valerian. Pl. 1 foot.

32 V. obtusifolia (D. C. prod. 4. p. 635.) plant herbaceous, erect, glabrous; root tuberous; leaves obtuse: lower ones obovate or oval, petiolate: upper ones sessile, oval-oblong, toothed at the base; corymbs coarctate. 2. F. Native of Chili. Valeriana, no. 630. Poepp. pl. exsic. Fruit unknown. Herb 3-7 inches high. Flowers white, crowded. Stamens not exserted. Allied to V. oblongifolia, and with it is intermediate between the present and following division of the genus.

Blunt-leaved Valerian. Pl. ½ foot.

* * Species natives of Europe and the Levant.

33 V. alliarannea (Vahl, enum. 2. p. 11.) plant glabrous; erect; stem striated; leaves all cordate, undivided, equally toothed, acuminate; lower ones petiolate, upper ones almost sessile; corymb rather contracted; fruit glabrous. 2. H. Native of Cappadocia, Iberia, and throughout Caucasus, in alpine
places. Valériana macrophylla, Bieb. fl. taur. 1. p. 25. Flowers white, tinged with red.

**Alliaria-leaved Valerian.** Fl. June, July. Clt. 1826. Pl. 1 to 2 feet.


35 **V. var.**, _cuspitata_, (D. C. prod. 4. p. 636.) stems humble, nearly naked; lower cauleine leaves ovate, acuminate, undivided or subtrifid. 2. H. Native of Abruzzo, on the Appennines. Val. cuspitata, Bert. med.

**Mountain Valerian.** Fl. June, July. Clt. 1748. Pl. 1 to 1 foot.

36 **V. alpiflora** (Stev. in mem. soc. nat. mos. 5. p. 342.) radical leaves ovate, almost quite entire, obtuse; cauleine leaves triplicate or ternate, acute; upper ones linear, entire; flowers capitately corymbose; pappus of calyx equal to the achenia in length. 2. H. Native of Siberia, of the banks of the rivers Senteled, Uba, and Ima; and of the Alps on the Swiss peaks. V. montana, Bieb. fl. taur. 1. p. 25. no. 67. 3. p. 28. Schultes. mant. 1. p. 258.—Gmel. sib. 3. p. 121. no. 2. The whole plant is glabrous. Corymbs coarctate when in flower, but rather loose while in fruit.

**Alp Valerian.** Pl. 1 foot.

37 **V. saxatilis** (Lin. spec. p. 45.) radical leaves on long petioles, elliptic, 3-5-nerved, undivided, or a little toothed, ciliated; cauleine leaves small, linear; stems erect; corymbs racemose; fruit glabrous. 2. H. Native of the Alps of France, Austria, Italy, &c. Jacq. austr. s. t. 267. vind. 204. D. C. fl. fr. 4. no. 3324. Bert. amen. italic. p. 326. Krok. sil. no. 52. t. 6.—Pluk. phyt. t. 293. f. 2. Root blackish, very sweet-scented, and when chewed leaving a bitterness on the tongue. The whole plant shining, and about half a foot high, with the stems subdivided at top. Flowers white, often dioecio-polygamous.


38 **V. saliuncia** (All. ped. 1. p. 3. t. 70. f. 1.) plant glabrous; leaves spatulate or obovate, obtuse, entire, on short petioles; corymbs sometimes tridentate at the base; stems short; flowers disposed in capitate corymb; fruit oblong, glabrous. 2. H. Native of Savoy, Vallaiss, Piedmont, Dauphiny, Italy, on the higher Alps. Dufr. val. p. 47. V. supina, D. C. fl. fr. 4. no. 3323. but not of Jacq. V. Celtica, Vill. dauph. p. 285. but not of Lin. Root acrid, sweet-scented. Flowers sweet-scented, white, tinged with red.

**Lavender Valerian.** Fl. May, June. Clt. 1824. Pl. 1/2 to 1/2 foot.


**Celtic Valerian.** Fl. June. Clt. 1748. Pl. 1/2 to 1/2 foot.

40 **V. globularia-leperömula** (Ram. in D. C. fl. fr. 4. p. 286.) plant glabrous, glaucous; radical leaves petiolate, ovate, quite entire, obtuse; cauleine ones pinate; lobes or leaflets of the lower leaves obovate, of the superior ones linear; corymbs short, coarctate, subracemose; fruit oblong, glabrous. 2. H. Native of the Pyrenees, on rocks; and of Spain, on Mount Pinnafurtado. Dufr. val. p. 41. no. 4. and no. 5. V. heterophylla, Lois. fl. gall. 1. p. 21. t. 2. but not of Baung. V. glauca, Lapeyr. abr. V. rupicola, Lag. var. 2. p. 212. gen. et spec. 2. no. 16.

**Globularia-leaved Valerian.** Pl. 1 foot.

41 **V. intermédia** (Vahl. enum. 2. p. 9.) plant glabrous, erect; lower leaves on short petioles, cordate, quite entire; corymbs one triplicate, with lanceolate quite entire lobes; corymbs at length panicked. 2. H. Native of the Pyrenees. V. montana γ appendiculata, Lapeyr. abr. p. 19. V. tripeters β. integrifolia, Arn. in litt. Perhaps a variety of _V. montana_ or _V. tripeters_, or a hybrid between these two species. Flowers white.


42 **V. tripeters** (Lin. spec. p. 45.) plant glabrous, erect; radical leaves petiolate, cordate or ovate, toothed; cauleine ones sessile, triplicate, with ovate-oblong or lanceolate lobes, which are toothed a little; corymbs panicked at length; fruit glabrous. 2. H. Native of Europe, in rocky places on the mountains, as of Austria, Carniola, Dauphiny, and Piedmont. Jacq. austr. s. t. 265. Baung. fl. trans. 1. p. 36. var. a and β.—Pluk. phyt. t. 251. f. 7-8.—Barrel. icon. t. 742. Root brownish, strong smelling. Flowers white, in loose corymbs. There are varieties of this plant having the radical leaves cordate or ovate, and the stem ones more or less divided, toothed or cut; lobes or leaflets of the upper leaves linear, undivided.


43 **V. saxicola** (Meyer, verz. plf. p. 49.) root creeping; stems nearly terete; radical leaves oblong or ovate, quite entire; lower cauleine leaves petiolate, trifid or triplicate; lobes linear or oblong: uppermost leaves linear, sessile, entire; flowers hermaphrodite, corymbose, crowded. 2. H. Native of Western Caucasus, among alpine rocks.

**Rock Valerian.** Pl. 1 foot.

44 **V. Pyrenaeica** (Lin. spec. p. 46.) plant downy, erect; stems striated; lower leaves large, petiolate, cordate, unequally-toothed; superior ones pinate, having the 1-2 lower pairs of _4r2_.
lobes or leaflets oblong or acuminated, and the terminal one broad-ovate or roundish, cordate, serrated; corylms ample; fruit glabrous.  

2. H. Native of the Pyrenees, in woods; and of Scotland, in woods, particularly about Edinburgh and Glasgow. D. C. fl. fr. no. 3317. Sowerb. engl. bot. t. 1591. — Pukl. sert. f. 232. f. 1. V. Canadensis, Riv. mon. t. 6. — Buxb. cent. 2. p. 19. t. 11. A showy pale green herb, with large leaves. Flowers pale red, disposed in ample corymbs. There is also a white flowered variety of this plant.


45 Valeriana. (Lam. ill. 1. p. 92.) plant glabrous, erect; stems terete, nearly smooth; radical leaves petiolate, undivided, oblong-oblong, remotely toothed, the rest pinnate; leaflets or lobes ovate or ovate-oblong, toothed; corylms subpanicled; fruit glabrous.


Italian Valerian. Pl. 1 to 2 feet?

46 V. elongata (Lin. spec. p. 1664.) plant glabrous, erect; stems striated; radical leaves petiolate, oval; cauleine leaves sessile, subcordate or hastate; upper leaves deep-3-5-cleft, acute; panicle elongated, with the lateral branches short and subleaves; corolla very short, tubularly campanulate; fruit glabrous.  

2. H. Native of Austria, Carniola, &c. on the Alps. Jacq. fl. auct. 3. t. 219. vind. t. 1. Morr. ox. sect. 7. t. 15. f. 29. Root whitish, with little taste or smell. Flowers dusky. Stems 6-10 inches high.

Var. β, poligama (D. C. prod. 4. p. 637.) plant larger; upper leaves trifid.  

2. H. Native of Galicia, in humid meadows. V. dioica, Bess. prim. 1. p. 48. enum. p. 40. V. polygama, Bess. in litt. Flowers coruleous, a little larger than in V. elongata; but very similar in form.


47 V. asarifolia (Dufr. val. p. 44.) plant glabrous, erect; radical leaves petiolate, cordate-rempon, a little toothed; cauleine leaves few, pinnate; lobes or leaflets of the upper leaves linear; corylms rather contracted.  


48 V. tuberosa (Lin. spec. p. 46.) plant glabrous; radical leaves ovate, lanceolate-oblong or oblong, undivided, quite entire; cauleine leaves pinnatifid, with 2-3 pairs of linear segments or lobes, the terminal segment the largest; corylms at first ovate, hairy.  

2. H. Native of the south of Europe, from Spain to Caucasus; of Siberia, near Sogra and Wydrixca, and from Buchtorni to Lake Noor Saisan. Vahl, enum. 2. p. 12. Dufr. val. p. 45. D. C. fl. fr. no. 3220. Lob. icon. t. 717. f. 2. Cam. epit. p. 16. Root tuberous, blackish, simple or double, ovate or oblong. There are varieties of this species with the cauleine leaves pinnatifid, or the lower ones are quite entire, oblong-lanceolate and elongated, and the upper leaves more or less pinnatifid. Flowers pale red.

Var. β, monorhiza (D. C. prod. 4. p. 637.) root simple, nearly glabrous; radical leaves ovate-cordate.  


49 V. Phu (Lin. spec. p. 45.) plant glabrous, erect; stems terete, smooth; radical leaves oblong or elliptic, undivided; cauleine ones pinnatifid, with oblong lobes; corylms panicked; lobes of stigma 3, slender; fruit glabrous, but exhibiting 2 hairy lines.  


Phu or Garden Valerian. Fl. May, July. Chlt. 1597. Pl. 2 to 4 feet.

50 V. duhania (Bunge, in Led. fl. alt. 1. p. 52.) primary radical leaves quite entire or auricled; the rest lyrate, pinnatifid, and the cauleine leaves pinnate; leaflets oblong, obtuse, almost entire; superior ones decurrent; corylms compound; flowers hermaphrodite.  

2. H. Native of Siberia. V. officinalis, Falk. topon. beitr. 2. no. 50. —Gmel. fl. sib. 3. p. 120. no. 1. exclusive of the synonyms. This species is very nearly allied to V. officinalis, but differs from it in the lower leaves being undivided or auricled. Stem and margins of leaves beset with minute, adpressed hardly conspicuous pili.

Var. a, lentisfolia (Bunge, l. c.) segments of leaves 7-11, more remote and broader than in var. β.  

2. H. Native of Siberia, frequent on schistous mountains in exposed places.

Var. β, angustisfolia (Bunge, l. c.) segments of leaves 21-27, more crowded and narrower, and more elongated than in var. a.

2. H. Native of Siberia, near Salair and Barnaul.

Doublous Valerian. Pl. 2 to 3 feet.

51 V. dioica (Lin. spec. p. 44.) plant glabrous, erect; stems striated; radical leaves petiolate, ovate or subpatulate, undivided; cauleine leaves pinnatifid, with linear-oblong lobes; flowers dioecious; corylms of the male flowers loose; of the female ones contracted; lobes of stigma almost combined; fruit glabrous.  


Var. β, integrifolium (D. C. prod. 4. p. 637.) all the leaves both radical and cauleine are quite entire.

2. H. Native of Silesia. V. dioica semplicifolia, Reich. icon. 1. p. 48. t. 59.—Loes. pruss. no. 724. t. 84.


** Species natives of America.**

52 V. capitata (Pall. in Willd. herb. no. 789. exclusive of Cham. et Schlecht. which is Gentiana frigida,) plant glabrous, erect; stems down at the nodi; radical leaves petiolate, roundish, simple; cauleine ones almost sessile, simple or ternate; leaflets sinuously serrated, middle one the largest; panicles terminal, capitate, girded by long linear bracteas; tube of corolla elongated; fruit ovate, compressed, glabrous.  

2. H. Native of the higher ranges of the Sagen Alps, at the bay of St. Laurence; Kotzebue's Sound; on the Arctic shores of America beyond Behring's Straits; and between the Coppermine and Mackenzie rivers. Link, jahrb. 1. pt. 3. p. 66. Cham. et Schlecht. in Linnæa. 3. p. 130. Perhaps distinct from V. tripetris, ex Stew. obs. in herb. Willd.

Capitulate-flowed Valerian. Pl. 1 foot.

53 V. sylvestris (Banks, mss. Richards, in Franklin. 1st journ. ed. 2. append. p. 23) plant glabrous, erect; stems striated; radical leaves petiolate, ovate or subpatulate, undivided; cauleine leaves pinnate-parted, with ovate-lanceolate nearly entire

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VALERIANAE.  IX. Valeriana.

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segments; flowers hermaphrodite; lobes of stigmas 2–3, minute; fruit ovate, compressed, glabrous.  *V. H.* Native of Newfoundland, ex Banks, Clearwater River, ex Richards, Prairies of the Rocky Mountains abundant, ex Drummond. In every respect this agrees with the European *V. dioica*. It differs from *V. Pha* by the smaller and shorter fruit, and entire absence of the two hairy lines.

**Wood Valerian.** Pl. 1 foot.

54 **V. laxiflora** (D. C. pro. 4. p. 638.) plant glabrous, ascending, suffruticoso at the base; leaves petiolar, ovate or oval, with a few coarse irregularly dentately cut teeth; floriferous branches elongated, almost naked; superior leaves pinnatifid-parted, with 1–2 linear quite entire leaves on each side; floral leaves linear; panicle loose, with opposite branches, which are trifid and few-flowered at the apex.  *F. H.* Native of Chili. Valeriana, no. 825. Poepp. pl. exsic. Fruit oblong, glabrous.

**Lae-flowered Valerian.** Pl. ascending.


**Shining-rooted Valerian.** Pl. $\frac{1}{2}$ foot.

56 **V. Humboldtii** (Hook. et Arn. in bot. misc. vol. 3.) stem herbaeous, erect, terete, and is as well as the leaves smooth; radical leaves entire, roundish-elliptic, crenated; cauline leaves sessile, pinnatifidly lyrate; panicles much branch'd; corollas quinquefoil; stamens exerted; fruit glabrous, crowned by feathered pappus.  *F. H.* Native of Peru, in rocky places. *V. hyalinorhiza*, H. B. et Kunth, nov. gen. amer. 3. p. 381, but not of Ruiz et Pav.

**Humboldt's Valerian.** Pl. $\frac{3}{4}$ to $1\frac{1}{2}$ foot.

57 **V. pinnatifida** (Ruiz et Pav. fl. per. 1. p. 40. t. 69. f. b.) plant herbaeous, glabrous; stems erect, simple, striated; two lower leaves lanceolate, quite entire; the rest pinnatifid, with oblong serrate-toothed lobes; panicle loose; lateral corymbs ditrichotomous; stamens exerted.  *F. H.* Native of Peru, at Chancay and Lima on hills. Val. brachïata, Pers. ench. 1. p. 87. Root tuberous, sweet scented, as in *V. Pha*. Flowers white. A variety of the present plant, or a distinct species, was gathered by Bertero in the grassy pastures on Mont La Leona at Rancagua, in Chili.

**Pinnatifid-leaved Valerian.** Pl. 1 foot?

58 **V. leucoca'rea** (D. C. pro. 4. p. 638.) plant herbaceous, erect, glabrous; lower leaves on long petioles, oboval-oblong, obtuse, attenuated at the base, membranous; cauline leaves very few, small, pinnate-parted at the base, with linear lobes; panicle loose, with opposite trichotomous branches; fruit pale, glabrous, compressed.  *F. H.* Native of Chili. Valeriana, no. 847. Poepp. pl. exsic. Stem 2 feet high. Radical leaves with the petioles 10–12 inches long. Stamens not exerted. Pappus of calyx plumose.

**White-fruited Valerian.** Pl. 2 feet.

59 **V. vagina'ta** (H. B. et Kunth, nov. gen. amer. 3. p. 381.) plant glabrous; stems tufted, simple, tetragonal; radical leaves oblong-elliptic, petiolate, toothed a little; cauline leaves sinuate pinnatifid, sheathed at the base, with linear pilose segments; corymbs crowded; stamens inclosed; style much exerted.  *F. H.* Native of New Spain, in humid places near Real del Monte. Corolla glabrous, gibbous at the base, white.

**Sheathed-leaved Valerian.** Pl. $\frac{1}{2}$ foot.

60 **V. panicu'la** (Ruiz et Pav. fl. per. 1. p. 41. t. 70. f. a.) plant herbaceous, villous; stems many, erect, strictly furrowed, terete, rather 2-edged; radical leaves undivided, cordate, acut; cauleine leaves pinnate, with 3–5 ovate acute, dentiluated leaflets; panicle diffuse; stamens length of corolla.  *F. H.* Native of Peru, in moist rocky places. Corollas small, gibbous at the base, white. Pappus of calyx 10-rayed.

**Panicled-flowered Valerian.** Pl. 2 to 3 feet.


**Few-flowered Valerian.** Pl. 2 feet.

62 **V. herbe'ca'ra** (D. C. pro. 4. p. 638.) plant herbaceous, erect, glabrous; lower leaves petiolate, oboval-oblong, coarsely toothed; superior ones sessile, pinnate-parted, with lanceolate-toothed lobes; branches of panicle opposite, trichotomous; bracts linear, obtuse; fruit small, ovate, velvety from short crowded down.  *F. H.* Native of Chili. Valeriana, no. 942. Poepp. pl. exsic. Herb 1$\frac{1}{2}$ foot high. From the fruit being casenous, it agrees with *V. Papilla*, but the fruit is 3 or 4 times smaller.

**Hairy-fruited Valerian.** Pl. 1$\frac{1}{2}$ foot.

5 § 5. Stems herbaceous. Leaves all pinnate-lobed.  

*Species natives of America.*

63 **V. papilla** (Bert. in litt. ex D. C. pro. 4. p. 638.) stems erect, glabrous; leaves glabrous, lyrate pinnatifid; having the lateral lobes linear and entire, and the terminal one large, oboval-oblong, and somewhat sinuate; panicle trichotomous; fruit oblong, very hispid.  *F. H.* Native of Chili, in sandy pastures along the Cachapul, at a place called St. George, where it is called by the natives *Papilla*, and about the banks of Collina. Herb 1$\frac{1}{2}$ foot high. Pedicels pilose. Fruit large. Flowers unknown. Pappus blackish.

**Papilla Valerian.** Pl. 1$\frac{1}{2}$ foot.

64 **V. pyrami'dalis** (H. B. et Kunth, nov. gen. amer. 3. p. 331.) plant glabrous; stem herbaeous, terete, furrowed; leaves pinnate, with sessile ovate-cordate quite entire segments or leaflets; panicle much branched, pyramidal; genitils almost inclosed; fruit oblong, glabrous.  *F. G.* Native on the walls of the city of Quito. Corolla with a very short tube, white.

**Pyramid-al-panicled Valerian.** Pl. 3 feet.

65 **V. bridges'si** (Hook. et Arn. in bot. misc. 3. p. 365.) glabrous; leaves lyrate pinnatifid; lobes erose, curled; lateral ones small, terminal one much larger; radical leaves obovate, and more entire than the rest; panicle elongated, with opposite dichotomous distant branches; fruit ovate, glabrous.—Native of Chili, on the mountains and plains near Valparaiso. Very closely allied to *V. crispa*, with a totally distinct fruit, which, in this species, is not flat on one side, with a tubercle on the other, but presents a tubercle which is internally spongy on both sides, nor is it half so large as in *V. crispa*.

**Bridges's Valerian.** Pl. 1 to 2 feet?
66. *V. polemonoides* (H. B. et Kunth, nov. gen. amer. 3. p. 332.) plant downy; stems herbaceous, erect, terete; leaves pinnate; leaflets oblong, on short petioles, quite entire, rather fleshy, smoothish above; panicle much branched; genitils inclosed. _2. F. Native of the kingdom of Quito, between Humbato and Llaetaecunga. Corolla glabrous, gibbous at the base, white.

*Polemonium-like* Valerian. Pl. 2 to 3 feet.

67. *V. decussata* (Ruiz et Pav. fl. per. 1. p. 42. t. 70. f. b.) plant herbaceous, downy; stems erect, striated; leaves pinnate; leaflets lanceolate, acuminate, a little dentilicated; the terminal one rather the largest; panicle loose, divaricate, downy; staminules nearly inclosed. _2. F. Native of Peru, among rocks, and in hedges. Peduncles decussate. Corolla small, white.

*Decussate-peduncled* Valerian. Pl. 3 feet.

68. *V. polystachya* (Smith, icon. ined. 3. t. 51.) plant glabrous, erect; stems a little striated; leaves pinnatifid, with linear quite entire acute segments; racemes compound, elongated, composed of opposite spikes.—Native of Buenos Ayres, in moist places, where it was collected by Commerson. Vahl, enum. 2. p. 5. Astrëphia polystachya, Dufr. val. p. 51. Oligacocë polystachya, Willd. herb. Corolla hardly gibbous at the base.

*Many-spiked* Valerian. Pl. 2 feet.

69. *V. sorificolia* (H. B. et Kunth, nov. gen. amer. 3. p. 332.) stems herbaceous, erect, terete, rather pilose below; leaves pinnate; leaflets sessile, ovate-oblong, cuneated at the base, coarsely serrated, glabrous; panicle much branched; staminules inclosed; style exerted. _2. F. Native of Mexico, on the western declivities of mountains between Valladolid and Puecuarao. Corolla glabrous, gibbous at the base, white.

*Mountain-Ash-leaved* Valerian. Pl. 2 to 3 feet.

70. *V. sanguisorboïdæ* (Cav. icon. 5. p. 456.) plant herbaceous, glabrous; stems prostrate at the base, and erect at the apex; leaves pinnate; petioles naked almost to the middle; leaflets sessile, ovate, few-toothed, equal; panicle racemose, oblong, rather loose. _2. F. Native of the Cordillera of Chili. V. sanguisorbas, Pers. ench. 1. p. 37. Flowers white.

*Burnet-leaved* Valerian. Pl. 1 foot.

71. *V. glauca* (Poep. pl. exsic. no. 127.) plant herbaceous, erect, glabrous; stems terete, naked at the apex; leaves glau- cous, pinnate; leaflets obovate-oblong, toothed, those at the base of the petiole small, and those at the top of the leaf larger and confluent; branches of pinnate opposite, trichotomous; bractæe linear. _2. F. Native of Chili, where it was collected by Poepigg. Allied to *V. sanguisorboïdæ*, but the petioles are almost leafy to the base. Leaflets narrowed into the petioles.

*Glaucescent* Valerian. Pl. 1 to 2 feet.

72. *V. virgata* (Ruiz et Pav. fl. per. 1. p. 42. t. 66. f. b.) plant suffruticosæ, almost glabrous; stem much branched, striated, rather downy; leaves pinnate; leaflets entire or bifid, with linear bluntish entire lobes; corymbis paniculatæ, with dichotomous branches, bearing a sessile flower in each fork; stamens exerted. _2. F. Native of Peru, in the province of Canta, among broken rocks. Flowers white.

*Twiggly* Valerian. Pl. 3 feet.

73. *V. globiflora* (Ruiz et Pav. fl. per. 1. p. 43. t. 65. f. b.) plant herbaceous, humble, hispid on one side; stems striated, hardly longer than the leaves, almost naked; leaves pinnate; leaflets sinuate-toothed; flowers capitate; bractæae spatulate, membranous. _2. F. Native of Peru, on the alps in the provinces of Tarma and Canta. Corollæ white.

*Globe-flowered* Valerian. Pl. 1; 1 foot.

74. *V. lyra* (Vahl, enum. 2. p. 4.) plant herbaceous, glabrous; stem bearing 2 leaves; radical leaves lyrate; leaflets oblong, dentately serrated; the terminal one rather pinnatifid:

**Species natives of Asia.**

80. *V. lesschenaultii* (D. C. coll. membr. viii. prod. 4. p. 640.) plant herbaceous, glabrous, erect; stems nearly terete; leaves pinnate, with 3-4 pairs of membranous repandly toothed leaves, with an odd one; the leaves of the upper leaves very narrow; panicule loose, elongated; lateral corymbis dichotomous; flowers sessile in the forks; fruit oblong, downy. _2. F. Native of Mexico, in the valley of Tolucco. Very like *V. Hardwickii*, but differs in the stem and leaves being quite smooth, in the segments of the leaves being more ovate, in the corymbbs being dichotomous, and in the fruit being oblong.

*Toluccana* Valerian. Pl. 1 to 2 feet?

77. *V. mexicana* (D. C. coll. membr. viii. prod. 4. p. 640.) plant herbaceous, glabrous, erect; stems almost terete; leaves pinnate, with 2 pairs of oblong leaflets, and an odd one: the latter is larger and ovate, and usually auricled at the base, but all are repandly toothed; panicle loose, elongated, having the lateral branches elongated and trichotomous; staminules exerted; fruit ovate, scabrous. _2. F. Native of Mexico, about the city, where it was collected by Berlandier. Very nearly allied to *V. Hardwickii* and *V. Toluccana*, but is distinguished from both by its angular stem.

*Mexican* Valerian. Pl. 1; 1 foot.

**Species natives of Asia.**

80. *V. lesschenaultii* (D. C. mem. viii. prod. 4. p. 640.) radical leaves petiolate, ovate, obtuse, crenated, hairy on both surfaces; stems erect, simple, glabrous between the joints, but the joints are pilose; cauline leaves remote, small; sessile; upper ones pinnately divided into 3-5 linear glabrous lobes, the terminal lobe the longest; corymbbs contracted; fruit villous. _2. F. Native of the East Indies, on the mountains of An- gueda, where it was collected by Leschenault. Stem 2 feet high. Radical leaves with the petiolas, hardly 2 inches long. Habit of *V. doedic*. 

*Leschenault's* Valerian. Pl. 2 feet.

81. *V. reflexa* (Wall. cat. no. 434.) the whole plant is
VALERIANEE. IX. VALERIANA.

Tschuaj, against the mouth of the river Tschegan. Root with long thick yellowish white fibres, emitting sermenta. Leaves glabrous, rather fibrous, the primary ones simple or auricled. Flowers disposed in whorles of threes. Pappus of fruit greyish-violet.

Rock-loving Valerian. Pl. ½ to ¾ foot.

88 V. ALTENFIOLIA (Led. fl. alt. 1. p. 52.) caule leaves alternate, pinnate; leaflets lanceolate-linear, downy beneath as well as on the stem; flowers corymbose. 2. H. Native of Siberia, near the city of Irkutzk. Stem erect, simple. Radical leaves wanting in the specimen examined. Upper caule leaves sessile, but the petioles become gradually elongated to the base. Genital exerted. Corolla 5-parted, cleft longitudinally.

Alternate-leaved Valerian. Pl. 1 to 1½ foot.

89 V. DIOSCORES (Sibth. et Smith, fl. græc. t. 33.) plant glabrous, erect; lower leaves lyrate pinnate, with ovate toothed leaflets: the terminal one large; upper leaves with equal lanceolate toothed leaflets; cymes crowded, panicked; peduncles dichotomous. 2. H. Native of Lycia. Roots tuberous. Flowers pale red.

Dioscorides' Valerian. Pl. 2 feet.

*** Species natives of Europe.

90 V. SAMBUCIFOLIA (Mikan, in Rœm. et Schultes, syst. 1. p. 351.) stems erect, striated, glabrous, pilose at the joints; leaves all pinnate; leaflets 4-5 pairs and an odd one; those of the lower leaves ovate, and coarsely toothed, of the superior ones oblong-lanceolate toothed, and rather decurrent; panicles thyrsoid. 2. H. Native of Germany. Link, enom. hort. berol. 1. p. 63; V. altissima, Horn.? This is a larger plant in all its parts than V. officinalis, and does not change by culture. Flowers pink.


91 V. OFFICINALIS (Lin. spec. p. 45.) plant smoothish, erect; stems furrowed; leaves all or nearly all pinnate, with 7-8 pairs of lanceolate serrated leaflets, and an odd one; corollas at length panicked; fruit glabrous. 2. H. Native of Europe and Caucasus, in humid places, and about the banks of pools and rivers; plentiful in Britain. Dufr. val. p. 40. D.C. fl. fr. no. 3315. Blackw. herb. t. 171. Woolav. med. bot. t. 96. Heyne, arz. gew. 3. t. 32. Curt. lond. 6. t. 3. Sowerb. engl. bot. 698. Oed. fl. dan. t. 570. V. sylvestris, Dodon. pemp. 349. f. 2. Phû, Column. phyt. 114. Phû Germânicum, Fusch. hist. p. 857. This is a very common and a very variable plant, having the stem from 2 to 4 feet high, glabrous or pilose: the lower leaves almost undivided, or all pinnate, with the leaflets broader or narrower, and more or less decurrent, most often toothed, very rarely quite entire, shining or opaque; corollas contracted or loose; but all these variations are hardly considered varieties. V. lucida, Hort. par. V. excelsa, Poir. dict. 7. p. 301. V. altissima, Mikan in Dess. enom. p. 4. V. répens, Host, austr. 1. p. 35. are only varieties of V. officinalis. Root composed of long slender fleshy fibres, uniting into a hard, and sending out long fleshy creeping shoots from the crown. Leaves bearded at the base on the under side. Flowers pale red, having a singular odour. Pappus of seeds 12-rayed, purplish. In high dry pasture heaths and woods, the plant becomes smaller and more hairy, with the leaves narrower, and the roots more highly aromatic and less nauseous.

The roots have a strong, and to most people a disagreeable smell; its taste is warm, bitterish, and subacid, communicating its properties to wine, water, and spirit; but it is best in substance, and may be taken from half a drachm to 2 drachms to a dose. There is no doubt of its possessing antispasmodic virtues in an eminent degree. It is often prescribed with advantage in
hysterical cases; and instances are not wanting where it appears to have removed some obstinate epilepsies. In habitual constiveness it is an excellent medicine. The unpleasant flavour of valerian is best concealed by a small addition of mace. A tincture of the root in proof spirit, and in volatile spirit, is ordered in the London Pharmacopœia. Dr. Cullen says, that if it has sometimes failed, it is from the disease depending upon different causes, or the root being frequently employed in an improper condition, or in doses not large enough.—It is well known that cats are much delighted with the roots. Dr. Stokes informs us, that rats are equally fond of them, and that rat-catchers employ them to draw the rats together.

**Officinal Valerian.** Ff. June, July, Britain. Pl. 1 to 4 ft.

92 V. Siricœnœsis (Bongard, in mem. acad. imp. Petersb. 2. p. 145.) stem erect, glabrous, but pilose at the nodi; lower leaves ternate: superior ones pinnate, with 2 pairs of ovate, acuminated, corymbs dense, contracted. 2. H. Native of the island of Sitcha, where the roots are used by the natives as a precious medicine. Very nearly allied to V. sambucifolia and V. officinalis.

**Sitcha Valerian.** Pl. 2 to 3 feet.

93 V. angustifolia (Tausch. ex Host, fl. austr. 1. p. 36. but not of Cav.) plant downy, erect; stems furrowed; leaves pinnate; leaflets linear-lanceolate, obtuse, ciliated, quite entire, the 3 terminal ones confluent. 2. H. Native of Bohemia, on hills and mountains. Flowers rose-coloured. Root like that of V. officinalis.

**Narrow-leaved Valerian.** Pl. 1 to 2 feet.

**** A species native of the Cape of Good Hope.

94 V. Cape‘ensis (Thunb. prod. p. 7. fl. cap. p. 33.) plant glabrous, erect; stem striated; leaves pinnate; segments or lobes alternate? ovate-toothed, acute, the odd one the largest; corymbs plicate. 2. G. Native of the Cape of Good Hope, in valleys on the mountains. Habit of V. officinalis, but differs from it in the shorter lobes of the leaves. The roots are used in the same way as V. officinalis. Stem pilose at the joints.

**Cape Valerian.** Pl. 1 foot.

† Species not sufficiently known.

95 V. Leucophæa (D. C. prod. 4. p. 641.) V. orientalis minus florae leucophaee, Tourn. cor. p. 6. Allied to V. tuberosæ, ex Stev. obs. p. 67, but the bracteas are long and distant. Flowers dusky.

**Dusky-flowered Valerian.** Pl. 1 foot.

96 V. angustifolia (D. C. prod. 4. p. 641.) V. orientalis angustifolia, floribus et radice Valerianae hortensia, Tourn. cor. p. 6. This plant is nearly allied to V. officinalis, but differs in the narrower leaves.

**Narrow-leaved Valerian.** Pl. 2 to 3 feet.

**Cult.** All the hardy species thrive well in any common garden soil, and are easily increased by dividing at the root. Many of them are very ornamental border-flowers. The tender kinds, or those from warmer climates, should be grown in pots, in a mixture of peat, sand, and loam, so that they may be protected in winter by placing them in a frame or greenhouse.

X. BET'CEKEA (named after M. Betcke, who has described many species of Valeriana). D. C. coll. mem. vii. prod. 4. p. 642.


1 B. samolifolia (D. C. prod. 4. p. 642.) lower leaves ovate-oblong: upper ones ovate-roundish, sessile, stem-clasping; gymnos small, on short peduncles in the axils of the leaves; bracteas oblong. 0. H. Native of Chili, in mountain pastures near La Punta de Cortes, and about Valparaiso and Concepcion. Valériana seu Fédia samolifolia, Bert. in litt. 1829. and in bull. sc. 1830. p. 111. Habit of Samolus or Claytonia.

Samolus-leaved Betcke. Pl. ½ foot.

2 B.? Gilliesii (Hook. et Arn, in bot. misc. 3. p. 366.) plant quite glabrous; root tufted, woody; radical leaves roundish-elliptic, almost 3 times shorter than the petioles, quite entire; scapes about equal in length to the leaves; flowers in crowded heads; fruit glabrous, lanceolate, angular; limb of calyx short, urceolate.—Native of Chili, in cliffs of rocks near La Casa de Pietro, and the Andes of Mendosa, forming dense masses. B. samolifolia, Gill. but not of D. C. There is on the scape usually one pair of floral leaves: from the axil of each arises a head of flowers, in addition to the terminal one; and these three heads are often so close as to appear like one. This is probably not a species of Betcke; its fruit is not triquetrous; nor is the limb of the calyx 1-toothed and deciduous; but the fruit is still 1-seeded.

Gillies's Betcke. Pl. ½ foot.

**Cult.** The seeds will only require to be sown in the open ground in May, in a sheltered situation.

XI. TRIPLOSTE'GIA (Triploos, triploos, triple, and stegos, stigmas, a covering; the flowers are clothed by 3 covers, a double involucrum and the calyx). Wall. cat. no. 436. D. C. coll. mem. vii. prod. 4. p. 642.

**Linn. syst. Triandria, Monogynia.** Flowers covered by a triple tegument, a double involucrum, and the calyx. Outer involucrum 4-parted and 4-keeled: inner one tubular, 8-toothed, and 8-ribbed. Calyx adhering to the ovarium, with a small 4-toothed limb. Corolla funnel-shaped, 5-cleft, not gibbus at the base, nor spurred. Stamens 3, rising from the base of the tube; anthers a little exerted. Stigma capitate. Utricius 1-seeded, beaked, covered by the double involucrum, and crowned by the teeth of the calyx, downy.—An Indian herb. Root long, fibry, scentless. Stems obsolescantly 4-furrowed, simple or sparingly branched, bearing longish articulated hairs towards the top, which are tipped with glands. Leaves approximate at the base of the stem, oval-lanceolate, toothed, pinnatifid, downy above, and rather villous beneath, petiolate; caules leaves few, pinnatifid, small. Corymbs or panicles clothed with glandular down. Flowers small, by threes, downy.

1 T. glanduliferæ (Wall. l. c.) 2. H. Native of Nipaul, on mountains about Gosaingsthan, growing along with Nardostachys.

**Gland-bearing Triplostegia.** Pl. ½ to 2 feet.

**Cult.** This plant should be grown in a pot, in a mixture of loam, peat, and sand, and placed among other alpine plants. It may be propagated by dividing at the root, or by seed.


**Tube of calyx closely girding the ovarium (f. 118. d.).** Limb of calyx variable, short or elongated, entire (f. 117. g.), toothed, or ending in numerous variable bristles (f. 118. d.) which are usually plumose, and pappus-formed. Corolla gamo-
petalous (f. 117. f. f. 118. e.), inserted in the top of the tube, rarely ragger, but usually unequal (f. 117. f. f. 118. e.), 4-5-cleft. Stamens 4 (f. 118. f.), inserted in the tube of the corolla, and alternating with its lobes, nearly always distinct and free; anthers 2-celled. Style filiform (f. 118. g.); stigma simple, longitudinal or subcapitate. Fruit indelihent, membranous or sub-necumteentaceous (f. 118. h. f. 117. c.), crowned by the limb of the calyx (f. 117. i. f. 118. i.), 1-celled, 1-seeded, usually covered by the involucel (f. 117. g.). Seed pendulous in the fruit; albumen fleshy. Embryo straight, with a superior radicle.—Herbs or subshrubs. Leaves opposite, rarely verticillate, very variable in form, and even so in the same individual, the radical and cauline ones being very different. Flowers in dense heads, girded by involucera, very rarely in whorles. Involucel calyciform, girding the flower.

This order was formerly joined with Valeriânee, but is readily distinguished from it by the whole habit, by the flowers being in involucrated heads, and the single flowers being involucellate; by the fruit being constantly 1-celled and 1-seeded, in the stamens being always 4 in number, by the stigmas being simple, and by the seeds being albuminous. In this latter respect it agrees with the order Calycéreæ, but is distinguished from it in the embryo being erect, not inverted, and in the anthers being free, not combined into a tube. It agrees also with Compositae, from which it differs in its distinct stamens, and its pendulous albuminous seeds. What is called the involuce is a curious organ, resembling an external calyx, and is to each particular flower in the head of Dipsaceæ, what the partial involucrum of Compositae is to each umbellule. In several species of Scabiosa the ovary is entirely united with the tube of the calyx. Mr. Brown remarks, that the base of the style coheres with the narrow apex of the tube of the calyx, even in those plants of the order in which the dilated part of the tube is entirely distinct from the ovary. This kind of partial cohesion between pistillum and calyx is directly opposite to what usually takes place, namely, the base of the ovary being coherent, while its upper is distinct. It equally, however, determines the apparent origin or insertion of the corolla and stamina, producing the unexpected combination of floe superius with ovary liberum. The order also agrees in many respects with Nyctaginaceæ and Globulariaceæ.

The plants contained in this order have almost the habit of Compositae; all have the flowers growing in heads. Many of them are elegant border-flowers, and are cultivated with great facility. Some of the species of Scabiosa have been employed as diaphoretic and anti-syphilitic, but are now neglected.

Synopsis of the genera.

TRIBE I.

MORINA. Corolla ringent. Stamens 4, combined by twos, or didynamous. Flowers verticillate, bracteate.

1. MORINA. Involucrum 1-leaved, campanulate, with spiny-toothed edges. Calyx with an ovate tube, and a foliaceous bifid limb. Corolla long, tubular.

TRIBE II.

SCABIOSA. Corolla 4-5-cleft (f. 118. e.), not ringent. Stamens 4-5 (f. 118. f.), free, nearly equal. Flowers aggregate upon a receptacle (f. 118. c.); the heads involucrated by a general involucrum, and each flower girded by a calyciform involucel (f. 117. g.).

2. DIPSACEA. Involucrum of many leaves, much longer than the paleæ among the flowers, which are foliaceous. Corolla 4-cleft. Stamens 4. Fruit crowned by the subtetragonal limb of the calyx, inclosed within the involucel.

3. CEPHALAEREA. Involucrum of many imbricated leaves, which are shorter than the paleæ (f. 116. a). Involucel terminated by a 4-8-toothed crown. Corolla 4-cleft (f. 116. c.). Stamens 4. Fruit tetragonal, crowned by the limb of the calyx, and inclosed within the involucel.


5. PTEROCLEPHALUS. Involucrum double, each series of 4-6 leaves. Receptacle villous or chaffy. Involucel toothed (f. 117. h.) or awned. Limb of calyx ending in feathery bristles (f. 117. i. f. 118. i.). Corolla 5-cleft. Stamens 4, rarely 2-3.


TRIBE I.


SECT. I. DIOTOCALYX (from ιός, dis, twice, and ους, ovs otoos, an ear, and καλυκα, kalys, a calyx; in reference to the limb of the calyx being of 2 lobes). D. C. prod. 4. p. 644. Leaves sinuated and spinose-toothed. Lobes of calyx 2, oblong, more or less emarginate at the apex, unarmar. Stamens combined by twos, perhaps in all the species.

figure. M. orientalis, Mill. M. vitticella, Maench. suppl. Flowers white and reddish on the same plant. Stamens joined from the base to the anthers by two.


_Long-leaved Morina._ Pl. 2 to 3 feet. 3 M. _polyphylla_ (Wall. cat. no. 425. D. C. prod. 4. p. 644.) leaves pinnatifid: lobes spinosely toothed; floral leaves rather villous, elongated, stiffly spinose; lobes of calyx deeply divided. 2. F. Native of Nipaul, at Gosaingatan. Intermediate between _M. Persica_ and _M. longifolia_, but is distinguished from them in the leaves being more elongated and acuminated, and in the lobes of the calyx being bifid beyond the middle. _Corolla and genitals unknown._

_Many-leaved Morina._ Pl. 2 to 3 feet.

**Sect. II. Acanthocaileyx** (from _acanthos_, acanthos, a spine, and _caileyx_, calyx, a calyx; in reference to the limb of the calyx being spiny-toothed). _D. C. prod._ 4. p. 645. Leaves quite entire, except the floral ones, which are a little spiny-toothed. Limb of calyx oblique, irregularly spiny-toothed. Stamens 4, distinct, didynamous.

4 M. _nana_ (Wall. cat. no. 424. _D. C. prod._ 4. p. 645.) cauline leaves quite entire: floral ones bearing spines at the base; involucre 1-leaved, ciliated by spines; limb of calyx oblique, irregularly spiny-toothed. 2. F. Native of Nipaul, at Gosaingatan. M. Nipaulensis, D. Don, _fl._ nep. _prod._ 161. Stem villous at top, as well as the young leaves. Flowers red. _Corollas villous outside, 3 times longer than the calyx._

_Dwarf Morina._ Pl. ½ to 1 foot.

**Cult.** The species of _Morina_ thrive best in a light rich soil; and may be increased by dividing at the root, or by seed.

**Tribe II.**


II. _Dipsacus_ (said to be from _ēdēbās_, dipsas, to thirst; probably in consequence of the conate leaves holding water: _ēdēbās_, _dipsakos_, _dipsakos_, is also the Greek name for the disease called diabetes, which is always accompanied by great thirst). _Tourn._ _inst._ t. 265. Lin. _gen._ 114. _Gært._ _fruct._ 2. t. 86. _Coul._ _dips._ p. 21, f. 24. _Wallr._ sched. crit. p. 49.

**Linn. syst. Tetraéria, Monogynia.** Involucrem of the head of flowers of many leaves, longer than the palea. Palea on the receptacle acuminate, rather foliaceseous. Involucre tetrandrous, 8-furrowed. Limb of calyx somewhat cyathiform or discoid. Corolla 4-cleft. Stamens 4. _Sigmod longitudinal._ Fruit crowned by the subtropical limb of the calyx, and inclosed within the involucre.—_Erect, pilose, or prickly biennial herbs._ Leaves opposite, usually conate at the base, toothed or jagged. Heads of flowers terminal, oblong-ovate or roundish. _Corolla lilac-coloured, yellow, or white._

1 D. _sylvesteris_ (Mill. _dict._ no. 2.) stem prickly; leaves conate at the base, ovate-lanceolate, acuminate, toothed; leaves of involucrem incurved, weak, longer than the heads of flowers; paleace of heads straight, linear-lanceolate, setaceous, bent; involucel not drawn out beyond the furrows. 2. H. Native of Europe and Siberia, frequent; plentiful in some parts of Britain, about hedges and by road sides. _Jaq._ _fl._ austral. t. 402. Oed. _fl._ dan. t. 965. Smith, _engl. bot._ t. 1032. Curt. _lond._ 3. t. 9. D. _sylvesteris_ a, _Coul._ _dips._ p. 22. D. _vulgāris_, _Gmel._ _fl._ _bad._ 1. p. 312. D. _fullo-lūs_, _Thor._ _chol._ _land._ 1. p. 36. _Poll._ _pal._ _no._ 157. D. _purpurāceus_, Fuchs._ _hist._ 225. _Flowers bluish-purple, first breaking forth about the middle of the head._ Heads of flowers ovate-oblong. _The water contained in the basin formed by the leaves is said to cure warts on the hands, and to serve as a beauty-wash for the face; hence Ray conjectures it had its name, Labrum veneris._


2 D. _laciniatus_ (Linn. _spec._ no. 141.) stem prickly; leaves conate at the base, sinuously jagged, and the lobes spiny-toothed; leaves of involucrem erectish, stiffish, usually shorter than the head, which is ovate; paleace straight, linear-subulate; involucel not drawn out beyond the furrows. 3. H. Native of Europe and Siberia, in hedges and ditches, as of Germany, France, Alace, Austria, Caucasus, &c. _Jaq._ _fl._ _austr._ 5 t. 403. D. _sylvesteris_, var. γ, _Coul._ _dips._ p. 22. _Leaves downy beneath._ _Corollas whitish; anthers reddish._


_Jagged-leaved Teazele._ Fl. July, Aug. Clt. 1685. _Pl._ 3 to 5 ft. 3 D. _divaricatus_ (Presl. _fl._ _sic._ p. 57. _del._ _prag._ 117.) stem prickly; radical leaves oblong, rather lyrate, ciliated; cauline ones interruptedly pinnatifid; lobes divaricate, pinnatifid at the base; leaves of involucrem shorter than the head, which is ovate; paleace spinescent, arched; involucels unknown. 3. H. Native of Sicily, on the edges of fields. _Guss._ _prod._ 1. p. 157. D. _laciniatus_, _Uric._ _hort._ _pan._ _p._ 66. ?

_Dicratele Teazele._ _Pl._ 3 to 5 feet.

4 D. _ruderalis_ (Mill. _dict._ no. 1.) stem prickly; leaves conate at the base, oblong-lanceolate, serrated: upper ones entire; leaves of involucrem spreadingly reflexed, shorter than the heads, which are cylindrical; paleace stiff, recurved; involucel not drawn out beyond the furrows. 2. H. Native of the south of Europe, where it is said to grow spontaneously in fields. It is said to be a native of England; but scarcely wild. _Plenc. off._ t. 50. _Sowerb._ _engl._ _bot._ 2050. _Hayn._ _term._ _bot._ t. 41. f. 8. _Coul._ _dips._ p. 22. _D. sativus_, _Gmel._ _fl._ _bad._ 1. p. 314. D. _fullo-lūs_, _Linn._ _spec._ p. 140. D. _sylvesteris_, _Coul._ _in._ _litt._ 1824. —_Lob._ _icon._ 2. p. 17, with a figure. _Flowers whitish, with pale purple anthers._ This and the three preceding have been combined by Coulter.

_Fuller's Thistle or Teazele is called Chardon a foulon in French, Kardendistel in German, and Cardencha in Spanish; Dipsaro in Italian: is a biennial plant from 4 to 6 feet high, prickly and rough in the stem and leaves, and terminated by rough bur-like heads of flowers. It is cultivated in Essex and the West of England, for raising the nap upon woollen cloths, by means of the crooked paleace upon the heads. For this purpose they are fixed round the circumference of a cylinder, which is made to turn round, and the cloth is held against them. There are no varieties of the cultivated Teazele, but the wild species is not
materi ally different, and may be used in its stead, though its chaff is not quite so rigid.

The soils on which the Teazle grows the strongest are deep loamy clays, not over rich. The situation should be rather elevated, airy, and exposed to the south. In the rotation, it may occupy the place of a green and corn-crop, as the first year the plants are treated like turnips, and the second the crop is ripened. The soil should be ploughed deep, and well comminuted by cross ploughings or stirrings with pronged implements.

The sowing season is the beginning of April; the quantity of seed is from 1 to 2 pecks per acre, and in quality it should be fresh and plump. The mode of sowing is almost always broadcast, but no crop is better adapted for being grown in drills, as the plants require hoicing and thinning. The drills may be either sown on ridgelets or a flat surface, in the manner of turnips, or by ribbing. The distance between the rows may be from 18 inches to 2 feet. In Essex, carraway is commonly sown with the teazle crop, but this is reckoned a bad plan.

The after culture of this crop consists the first year in hoicing and stirring the soil, and in thinning out the plants to the distance of 1 foot every way, if sown broad-cast, or to the distance of 6 inches, if sown in rows. Vacancies may be filled up by transplanting, and a separate plantation may be made with the thinnings, but these never attain the same vigour as seedlings.

The culture the second year consists also of hoicing, stirring, and weeding, till the plants begin to root. When the teazle is grown broad-cast, the intervals between the plants are dug by means of spades which have long narrow blades, about the length of 16 or 17 inches, and not more than about 4 inches in breadth. With these the land is usually worked over in the intervals of the plants, three or four times during the summer months; and in the course of the following winter, as about the latter end of February, the land between the plants is to be again worked over by the narrow spades, care being taken that none of the mould falls into the hearts of the plants; and again, about the middle of May, when they begin to spindles, another digging over is given, the earth being raised round the root-stems of the plants, in order to support and prevent them from being blown down by the wind. Some cultivators perform more frequent diggings, that the ground may be rendered cleaner and more mellow; consequently the growth of the plants will be more effectually promoted. The business in Essex has usually the name of spaddling, and is executed with great despatch by labourers that are accustomed to perform it.

The taking of the Teazle crop, when no regard is had for seed, commences about the middle of July, when the blooms begin to fall from the heads. It is the best method to have the heads cut as they become ripe; but the work is usually executed at three different times, at the distance of ten days or a fortnight from each other. It is performed by means of a knife, contrived for the purpose, and a string attached to the haft. This last is done in order that it may be hung over the hand. A pair of strong gloves are also necessary. Thus prepared, the labourer cuts off the ripe heads along the rows or lines, with about 9 inches of stem, and ties them up in handsfull, with the stem of one that is more perfectly ripened. And on the evening of the day on which they are cut, they should be put into a dry shed; and when the weather is fine, and the air clear, they should be taken out and exposed to the sun daily, till they become perfectly dry. Much care must, however, be taken that no rain falls upon them. In doing this, some make use of long small stakes or poles, on which these handsfull are hung during the time of their preparation.

As soon as they are completely dried, they should be laid up in a dry room, in a close manner, till they are become tough, and of a bright colour, and ready for use. They should then be sorted or separated into three different kinds, by opening each of the small bundles. These are distinguished into kings, middlings, and scrubs, according to their different qualities. They are afterwards, the author of "The Somerset Report" says, made into packs, which, of the first sort, contain 9000 heads, but of the second, 20,000; the third is a sort of very inferior value. By some, before forming them into packs, they are done up into what are termed staves, by means of split sticks, when they are ready for sale.

The produce of Teazle varies from 10 to 15 packs per acre; nine packs of kings, nineteen of middlings, and two of scrubs, are reckoned a large crop, with a great bulk of haulm. Often, however, the crop fails.

The use of the heads of the Teazle has been already mentioned. The haulm is of no use but for burning as manure. Parkinson observes, that this is a sort of crop that may be grown to advantage on many lands; in rotation, as a fallow to prepare for wheat; and by burning the straw and refuse stuff after the crop is reaped, it will be found not to impoverish, but rather to improve the land. In their young state, the teazle plants stand the winter without danger, and are a good crop for clearing land of all weeds, from their lateness in the process of hoicing, there being few weeds at so advanced a season; on all these accounts they become an advantageous crop for the farmer.

To save seed, leave a few of the very best plants uncropped, and then, when the seed is ripe, cut off only the largest and terminating heads, from which the seed is easily separated by beating with flails, and cleaned by a winnowing machine or a sieve.

The chief injuries to which the Teazle is liable are those effected by the fly and slugs in its infant state.


5 D. sinuat us (Willd. mss. in Rom. et Schultes, syst. 3. p. 519.) leaves pinnafiddily sinuated: segments laciniately toothed. g. Native of Persia, on the alps in the province of Gil-ian. Coul. dips. no. 22.

Sinuated-leaved Teazle. Pl. 3 to 4 feet.

6 D. ve'roix (Lois. fl. gall. p. 719. t. 3.) stem and leaves echinated from prickles; leaves connate at the base: radical ones sinuated; middle ones pinnafidd: upper ones entire; leaves of involuca spreading, a little longer than the heads, which are ovate; paleæ subulate, straight, stiff; involucel drawn out beyond the furrows into a short membrane. g. g. Native of Corsica and Sardinia, on the edges of fields. Said to grow in plenty in Austria, Bohemia, and Moravia. Tratt. tab. t. 255. D. C. fl. fr. suppl. p. 486. Coul. dips. p. 23. Flowers white or pale red. The central head of flowers is usually cylinrical, and the lateral ones roundish.


7 D. gemelinii (Bieb. fl. taur. 1. p. 92.) stem prickly; leaves sessile: lower ones undivided or cut: superior ones pinnate-parted, with oblong acute segments; leaves of involucra deflexed, incurved, weak, shorter than the heads, which are ovate, or nearly globose; paleæ membranous, aequinately aved; involucel drawn out beyond the furrows into a membranous crown. g. Native of Tauria, at Kuma, about the ruins of Maschar, but rare, ex Steven; at the river Don, ex Golb.; and of Siberia, ex the Irtil, ex Gmel. sib. 2. p. 209.; and of the Kirghisian Steppe, between Bucktorminsk and Lake Noor Saisan, ex Led. fl. alt. 1. p. 127. Coul. dips. p. 23. D. laciniiatus, Falck. top. beytr. 2. no. 140. Corollas blue.


8 D. stragouosts (Willd. mss. ex Rom. et Schultes, syst. 3. p. 520.) leaves toothed and entire, appendiculated: upper ones jagged at the base, ciliated; involucra twice the length of the paleæ; paleæ setaceous, twice the length of the flowers. g.
DIPSAC.E. II. DIPSACUS. III. CEPHALARIA.

I. Native of Persia, in the province of Ghilan. Coulit. dipls. p. 23. Said to be allied to the following.

Strigose Teazle. Pl. 3 to 4 feet.

9 D. virosus (Lin. hort. ups. p. 25.) stem prickly, glabrous; prickles hair-formed under the head; leaves glabrous, petiolate, ovate, toothed, auricled at the top of the petioles; leaves of involuca deflexed, shorter than the heads, which are globoso, but hardly exceeding the pales, which are linear-subulate and pilose; involucel not drawn out beyond the furrows. 3. H. Native nearly throughout the whole of Europe, in woods and hedges; Caucasus, in Alpine places. In England, in moist shady places on a chalky or lime-stone soil. Oed. fl. dan. t. 1448. Jaccq. fl. austr. t. 248. Smith, engl. bot. t. 877. Coulit. dipls. 23. Curt. lond. t. 10. Cephalaria appendiculata, Schrad. cat. sem. geott. 1814. Paleee ciliated. Corollas white. Anthers dark purple or brown.


10 D. striatus (D. Don, prod. fl. nep. 160.) stem unarmed, but beset with short retrograde hairs; leaves petiolate, lanceolate, acute, dentately serrated, beset with villi on both surfaces; leaves of involucel spreading deflexed, shorter than the head, but hardly exceeding the pales, which are glabrous, crowned, straight at the apex, ciliated, canescent; involucels hardly furrowed, crowned. 3. H. Native of Nipaul. D. inermis, var. a, Wall. in fl. ind. 1. p. 367. Stem erect, branched, hexagonal. Flowers cream-coloured. According to D. Don, in fl. nep. the leaves are connate at the base. Heads of flowers spherical.


11 D. inermis (Coulit. dipls. p. 23.) stem unarmed, downy, but having the branches hispid under the heads; leaves petiolate, ternate or somewhat pinnatifid, clothed with adpressed pilly on both surfaces; lobes lanceolate, acuminate, serrated; leaves of involucel deflexed, shorter than the heads, which are glabrous, but exceeding the pales a little; paleae ovate, mucronate, ciliated at the apex; involucels hardly furrowed, crowned. 3. H. Native of Nipaul, in Alpine places. D. inermis, var. β, Wall. in fl. ind. 1. p. 367. D. mitis, D. Don, prod. fl. nep. p. 161. Stem hexagonal, pilose, unarmed. Palaeae about equal in length to the flowers. Corollas yellow.

Unarmed Teazle. Fl. July. Pl. 2 to 3 feet.

12 D. asper (Wall. cat. no. 428. D. C. prod. 4. p. 646.) stem prickly; leaves undivided or pinnatifid, oblong-lanceolate, acuminate, serrated, scabrous on both surfaces from bristy hairs; leaves of involucel deflexed, shorter than the heads, which are globose, but exceeding the pales, which are ovate, ciliated, and mucronate; involucels hardly furrowed. 3. H. Native of the East Indies, on the Pundá Mountains. Stem and branches angular; angles beset with stiff prickles.

Rough Teazle. Pl. 2 to 3 feet.

13 D. Leschenaultii (Coulit. in litt. ex D. C. prod. 4. p. 647.) stem smooth, rather hairy; leaves lyrate pinnatifid, very villous on both surfaces, acuminate, coarsely serrated at the apex: lower ones petiolate, lobes of leaves 3-nerved at the base; leaves of involucel spreading, shorter than the heads, which are globose, and hardly exceeding the pales, which are oblong, acuminate and pilose; involucel drawn out a little into a membranous crown beyond the furrows. 3. H. Native of the East Indies, on the Nellighery Mountains, where it was collected by Leschenault and Noton. Scabiosa Brunoniána, Wall. cat. no. 429. The plant is called Donde Gueda by the natives. Stem 3 feet high, rather hairy, not prickly. Habit of Cephalaria alpina.

Leschenaultii's Teazle. Pl. 3 feet.

Cult. None of the species are worth growing, except in botanic gardens. They will grow in any soil in which the seeds may be sown.


Lin. syst. Tetrándria, Monogynia. Involucra surrounding the heads of many imbricated leaves (f. 116. a.), shorter than the pales. Involucel tetrandrous, rarely compressed, 8-furrowed, terminated by a 4-8-toothed crown. Limb of calyx rather cup-shaped or discoid. Corollá 4-cleft. Stamens (f. 116. d.). Stigma longitudinal. Fruit tetragonal, crowned by the limb of the calyx, inclosed within the involucel. —Perennial herbs. Leaves toothed or pinnatifid. Heads of flowers terminal, globose (f. 116. e.); paleae imbricated: outer ones sterile. Corollas white, cream-coloured, or lilac. —This genus is hardly distinct from Dipsacus, unless in the involucel being very short.

* Perennial plants. Palaeae acuminated, downy.


** Annual plants. Palaeae membranous, awned at the apex.

3 C. Transylvánica (Schrad. l. c.) stems terete, rather pilose at the base; leaves pinnatifid: lower ones lyrate; lobes of the cauline leaves linear-oblong toothed; terminal lobes lanceolate, serrated a little; palaeae glabrous, membranous, oblong, ending in a dark purple awn each; teeth of involucel 8, short, equal. 2. H. Native of the south of Europe, from Vascony to Constantinople, in fields; and of Caucasus, on mountains near Grosnuja. Coulit. dipls. p. 24. t. 1.
III. Cephalaria.

685. Cephalaria. (C. L. S.) annuals, stems terete, leaves pinnatifid, lobes oblong, entire, dentate; flowers blue; involucels small.

Var. a. communque (C. L. S.) stems terete, leaves pinnatifid, lobes oblong, quite entire, dentate; flowers blue; involucels small.

Var. b. seministata (C. L. S.) stems terete, leaves pinnatifid, lobes oblong, entire, dentate; flowers blue; involucels small.

Var. c. corniculata (C. L. S. and Sch.) stems terete, leaves pinnatifid, lobes oblong, entire, dentate; flowers blue; involucels small.

Var. d. corniculata (C. L. S. and Sch.) stems terete, leaves pinnatifid, lobes oblong, entire, dentate; flowers blue; involucels small.

Var. e. corniculata (C. L. S. and Sch.) stems terete, leaves pinnatifid, lobes oblong, entire, dentate; flowers blue; involucels small.
ri- didus, Lag. Succia rigidia, Spreng. l. c.—Conn. horit. amst. t. 93. Shrubby. Flowers white. Said to be allied to C. lev- cynthia. There are varieties of this with either glabrous or scabrous leaves. The upper leaves are cut, with revolute edges.


11 Var. b. verb. attenuata (Rem. et Schultes, l. c. Coult. l. c.) leaves oblong, toothed, and somewhat pinnatifid at the base. G. Scabiosa verbenacea, Lam. ill. no. 1314.


† Species not sufficiently known.


Greek Cephalaria. Pl. 2 feet.


Humble Cephalaria. Pl. 3/4 to 1 foot.


Ustulato-bracted Cephalaria. Pl. 1 to 2 feet.


N.B. Scabiosa marina, Lin. mant. p. 329. is distinct from Scabiosa maritima, Lin., and are probably referrible to the present genus, but are hardly known.

Cult. The hardy herbaceous kinds of Cephalaria are of the most easy culture, and will grow in any kind of soil, and are readily increased by dividing at the root, or by seed. The seeds of the annual species only require to be sown in the open border. The green-house shrubby kinds should be grown in a mixture of loam, peat, and sand, and may be increased either by young cuttings under a hand-glass, or by seed.


Lin. syst. Tetrandria, Monogynia. Involucre of heads of many leaves. Paleae none. Receptacle hairy. Involucel compressed, with 4 hollows closely girding the fruit, denticated at the apex, having 2 of the teeth larger than the other 2, furnished with a short stipe. Limb of calyx cup-shaped, neither papose nor awned at the apex. Corolla 4-5 cleft. Stamens 4.—Erect branched, usually villous herbs.


2 K. frondóntia (Lin. spec. ed. 2. p. 1666. exclusive of Till. syn.) leaves serrated; superior ones lanceolate, quite entire; corollas 10, equal to the involucel; ciliate of calyx 15 in number. G. Native of the Levant. Wildl. spec. p. 561. exclusive of the syn. of Tourn. Rem. et Schultes, syst. 3. p. 87. exclusive of the Lam. syst. Coutil. d. p. 28. Scabiosa propónica, Lag. gen. et spec. p. 9. Plant villous. Corollas purple. Pistilla white; the corolla is said to be 4-cleft by Linneus. This is a doubtful plant, and is perfectly unknown at the present day, as the plant known in our gardens under this name is K. orientalis.


Sect. II. Trichéroides (this section contains plants having the habit of those of the next section). D. C. prod. 4. p. 650. Involucel spreading, 10-12-leaved. Flowers few or many. Involucel bidentate at the apex. Corollas rather irregular. Limb of calyx ciliate.—Annual herbs. Flowers bluish or rose- coloured.

3 K. urvillei (Coutil. d. p. 29. t. 1. f. 10.) lower leaves pinnatifid; superior ones linear, quite entire; corollas 10-12 in each head, nearly equal, hardly longer than the involucel, which is spreading; teeth of crown of the involucel 8, a little awned. G. Native of the island of Léri, in arid fields, where it was collected by D'Urville; and also of Bulgaria. K. orientalis, D'Urville. enum. p. 14. Plant villous? Stems branched, divaricate. Heads of flowers small. Corollas pale blue.

D'Urville's Knautia. Pl. 1 to 2 feet.

4 K. hybrída (Coutil. d. p. 30. and in litt. 1824.) lower leaves petiolate, lyrate; lobes obobuate, toothed: terminal lobe the largest, ovate or roundish; cauline leaves oblong, simple, serrated; heads many-flowered: the 2 teeth of the involucel of many bristles; ciliate of calyx 20-24, obdente. G. Native of the south of Europe. Scabiosa hybrída, All. auct. p. 9.


Sect. III. Trichéra (from τριχεῖς, trichēs, hairs; in reference to the limb of the calyx). Schrad. l. c. D. C. prod. 4. p. 651.—


5 K. arvénsis (Coulit. dips. p. 29. var. α, β, γ, τ. l. f. 13.) stems hispid; leaves sessile, villous; radical leaves unequally pinnatifid, with lanceolate lobes; cauline leaves pinnatifid, with linear lobes; uppermost leaves linear-lanceolate; leaves of involucrum blunt.

6 H. Native of Europe, in corn-fields and meadows. Sowerby, engl. bot. t. 659. Curt. lond. 4. t. 13. Fl. dan. t. 447.— Blackw. t. 185. Flowers bluish, and varying from white to or purple. Perhaps Scabíosa dubia, Mœnch. hess. no. 116. t. 3. which is said to have a 5-cleft corolla, is only a variety of this species. This plant may rather be considered a troublesome weed in corn-fields, but in grass-fields it may be considered rather useful, as it produces a large quantity of foliage, which is not refused by kine, sheep, or horses. The plant varies much in the divisions of the leaves, and in its hairiness. It sometimes occurs with white flowers. The flowers held over the smoke of tobacco in a few minutes become a beautiful green. The plant is slightly astringent, bitter, and saponaceous. The root creeps deep in the ground.

Var. α, vulgáris (D. C. prod. 4. p. 651.) leaves downy: radical ones pinnatifid or entire; cauline leaves always pinnatifid.

7 K. montána (D. C. prod. 4. p. 651.) stems hispid, brachiate; leaves oblong, serrated: lower ones entire and jagged; heads of flowers radiant; leaves of involucrum acute, narrow.


Mountain Knautia. Fl. July, Cilt. 1820. Pl. 3 to 6 feet.

9 K. ciliáta (Coulit. dips. p. 30.) stems very hispid; leaves ovate, hispid, lower ones petiolate, entire, auricled or pinnatifid: cauline ones deeply toothed, cordately stem-clasping or perfoliate; leaves of involucrum ciliated.


11 K. diversífolia (D. C. prod. 4. p. 652.) stems branched, hispid; radical leaves pinnatifid: lobes rather falcate, quite entire; lower cauline leaves petiolate, ovate-lanceolate, bluntly toothed; superior leaves lyrate; uppermost leaves stem-clasping, quite entire; leaves of involucrum ovate-cordate.


10 K. legionáriosis (D. C. prod. 4. p. 652.) stems hispid from retrograde hairs; leaves lanceolate, long-acuminate, remotely toothed; lower ones entire; leaves of involucrum 18, exceeding the flowers.

13 H. Native of Spain, on the mountains of Leonce. Scabíosa Legionáriosis, Lag. nov. gen. et spec. 3. Asteroécéphalus Legionéonis, Spreng. syst. 1. p. 379. Flowers red. There is a variety of this with pinnatifid leaves and white flowers. Said to be nearly allied to *K. sylváctica*.

Leonce Knautia. Fl. June, July. Pl. 2 feet.

11 K. salcéldi; stem scabrous from hairs; leaves all undivided, lanceolate: lower ones entire: upper ones sharply toothed in the middle.

14 H. Native of Spain, on the mountains of Leonce. Scabíosa Salcéldi, Lagasc. Leaves downy on both surfaces, hoary beneath. Peduncles long, beset with rufous villi under the head of flowers. Involucrum of many lanceolate pilose leaves, the length of the flowers, which are of a lilac colour.

4 P. Palestinus (Coulter. dips. p. 31. t. 1 f. 14.) plant clothed with silky villi; lower leaves obovate-oblong; quite entire, the rest lyrate, pinnatifid; lower lobes small, decurrent: terminal lobe large, obovate-oblong; involucre containing 8 florets at the base; crown of involucr. membranous; bristles of calyx 8–10, subulate, spreading, irregularly pilose at the sides.  O. H. Native of the islands of Cyprus and Sic.; and of Palestine. Knautia Palestina, Lin. mant. 117.—


§ 2. Perennial or frutescent species. Leaves jagged or toothed.

5 P. Lusitaniaicus (D. C. pro. p. 4. p. 653.) stems ascending, sparingly pilose; lower leaves bipinnatifid; superior ones pinnatifid; segments of all linear; palea of the receptacle and leaves of involucr. scarious and hairy; involucres many-toothed; awns of calyx 6–9, feathery.  O.  L. H. Native of Portugal, between Abrantes and Casabranca. Scabiosa plumosa, Hof. et Link, Fl. port. 3. p. 91. Cephalaria plumosa, Röm. et Schultes, syst. 3. p. 70. Scabiosa Gramuniaca, Broth. fl. lus. 1. p. 145. Flowers pale red. Perhaps Asteroccephalus intermedius, Lag. gen. et spec. p. 8. which is the Scabiosa intermedi, Röm. et Schultes, 3. p. 76. is referrible to this species, as also Scabiosa maritima and Sc. tenuifolia, Lag. elenchi. hort. mar. 1803. and 1805.


6 P. Bruusonxet (Coulter. in litt. 1824, ex D. C. pro. p. 4. p. 653.) leaves bipinnatifid; corollas equal; awns of calyx 6–7, linear, feathery, hardly twice the length of the involucr.  H. H. Native of Gibraltar, about San Roque, where it was collected by Broussonet.

Broussonet’s Pterocephalus.  Pl. 1 foot.


Tomentose Pterocephalus.  Pl. ½ foot.
§ 3. Perennial or frutescent species, with entire leaves.

9 P. n'ieus (Coults. d. p. 32.) lower leaves orbicular: cauline ones obovate-spatulate, quite entire, and are as well as the stems clothed with white tomentum; bristles of calyx 10-12, plumose, 3 times longer than the seed. \( \frac{2}{2} H \). Native of Spain, on the top of Sierra Toxada. Scaibióa nívea, Aragd, in Rem. et Schultes, syst. p. 81. A very small plant.—According to Spiegel, it is the same as the following.

Sowly Pterocapalus. Pl. 1 to 2 inches.


Spatulate-leaved Pterocapalus. Pl. \( \frac{1}{4} \) to \( \frac{1}{2} \) foot.

11 P. ca'nus (Coults. in litt. 1824. ex D. C. prod. 4. p. 653.) leaves quite entire, obovate-oblong, hoary; peduncles shapen, bearing each one head of flowers; corollas 5-cleft; involuellae lageniform, downy, without furrows; rays of calyx 20-25, plumose, linear, twice longer than the involucre; stigmas margarinate. \( \frac{2}{2} H \). Native of the Levant, between Amadan and Kermanca, where it was collected by Olivier and Bruguier. Scabiosa dentatórum var. from the Levant, Coults. d. p. 32.

Hoary Pterocapalus. Pl. \( \frac{1}{2} \) foot.

12 P. lasióspérmus (Link, in Buch. can. p. 150.) stem suffruticos, with many branches; leaves on very short petioles, oblong-lanceolate, quite entire, crowded, white from short dense tomentum; involucres densely plumose. \( \frac{2}{2} G \). Native of the Great Caneary island, near Trente, and among rocks on the top of Pico Tedi. Pter. dentatórum var. pusilla, Coults. d. p. 32. Scabiosa frutícosa, Smith, mss.

Woolly-seeded Pterocapalus. Shrub small.

13 P. dumétórum (Coults. d. p. 32. var. a,) stem suffruticos, erect, bearing many heads of flowers; leaves petolate, quite entire, oval, acuminate, at the base, smoothish on both surfaces; peduncles and involucres downy; rays of calyx 20-24, plumose, linear, hardly twice the length of the involucr. \( \frac{2}{2} G \). Native of Teneriffe. Scabiosa dumétórum, Bouiss. in Wildll. enum. 1. p. 146. Tribhícia dumétórum, Rem. et Schultes, syst. 3. p. 56. Leaves crowded at the tops of the branches.

Thicket Pterocapalus. Shrub small.

Cult. For culture and propagation see Cephalária, p. 686.

VI. SCABIO'SA (from scabies, the itch; which disorders the common sort is said to cure). Rem. et Schultes, syst. 3. p. 2. Coults. d. p. 32. D. C. prod. 4. p. 654.—Astrocéphalus, VOL. III.
DIPSACEÆ.


9 S. Alēp'ētica (Coul. d. p. 35. t. 2. f. 8.) stem branched; leaves pinnate-lobed; lobes oblong-linear, quite entire; heads of calyx pedunculate; corollas radiant; base of involucels hardly elongated, equal in length to the linear foveole; crowns spreading, 3 times longer than its base, 20-24-nerved; limb of calyx on a long peduncle; bristles shorter than the crown. Q. H. Native of the Levant, between Bagdad and Aleppo, where it was collected by Olivier and Bruguieri. Stems humble, silky, villous. Peduncles smoothish.

Aleppo Scabious. Pl. humble.

10 S. UcKra'nica (Lin. spec. p. 144.) stem branched; leaves ciliated at the base: lower ones pinnatifid, with linear distant lobes: superior ones linear, quite entire; heads pedunculate; corollas radiant; base of involucels hemispherical, equal in length to the foveole, which are ovate-linear; crown 20-24-nerved, acutely toothed, shorter than the bristles. Q. H. Native of the south of Europe, from Spain to Tauria; also of the temperate parts of France. Coul. d. p. 63. var. a, ε, , γ, δ. t. 2. f. 9. D. C. fl. fr. no. 3330. Mor. bibl. ital. p. 9. Rehb. pl. crit. 4. t. 316. but the fruit is erroneous in the figure. Scabiosa alba, Scop. del. 3. p. 33. t. 16. S. argentea, Lin. spec. p. 145. Sibth. et Smith, fl. gracc. t. 168. Desf. ann. mus. t. 11. t. 24. S. Gmelini, St. Hill. bull. phil. 661. p. 149. t. 3. Asterocéphalus pilosus, Lag. gen. et spec. p. 8. Aster argenteus, Spreng. Sclerostémum Scopoli and S. argenteum, Schott.—Gmel. sib. 2. p. 213. t. 87. Cauline leaves ciliated at the base. Flowers from blue to white, and greenish yellow. Segments of corolla entire, ciliated.

Var. v, unbellet'ta (Coul. l. c. var. β.) flowers pedicellate, within the involucrum. Q. H. Native about Venice. Moricand, fl. ven. 1. p. 84.


11 S. Mi'râ'nthra (Desf. ann. mus. 11. t. 25. choix. t. 40.) stem branched; leaves hairy; lower oneslyrate pinnate, with oblong or linear lobes; lower leaves oblong or lanceolate-toothed; heads of flowers on long peduncles, ovate; corollas equal; base of involucels hemispherical, equal in length to the linear ovate foveole; crown 20-24-nerved, acutely toothed, shorter than the bristles. Q. H. Native of Tauria, Caucasus, Armenia, and Iberia, in sterile stony places. S. micrantha and S. Bieberstelnii, Rem. et Schultes, syst. 3. p. 80 and 75. S. Sicula, Bieb. fl. taur. p. 98. S. UcKra'nica ć, Coul. d. p. 35. and diss. mss. 1824. Asterocéphalus micranthus, Spreng. S. orientális villós, flore suave rubente, fructu pulcro oblongo, Tourn. cor. inst. p. 35. Flowers red. Plant villous. According to Desfontaines the radical and upper cauline leaves are entire.


12 S. Olivi'ēn (Coul. d. p. 36. t. 2. f. 10.) stem much branched, dichotomous; leaves linear-oblong, villous, entire or auricled; heads small, pedunculate, few-flowered; base of involucel hemispherical, equal to the ovate foveole; crown entire, spreading, 20-24-nerved, hardly exceeding its base; limb of calyx almost sessile, with much exerted bristles.—Native of the Levant, between Bagdad and Kermansha, where it was collected by Olivier and Bruguieri. Stem glabrous, white. Herb very slender. Flowers white.
Olivier's Scabious. Pl. 1 to 2 feet.

19 S. SETTIFERA (Lam. ill. no. 1321.) stem branched, downy; lower leaves ovate-spandulate, crossed or cut, rather villous; superior ones pinnate, with linear-lanceolate obtuse segments, the terminal segment the longest; corollas radiate, much longer than the involucrum. 2. H. Native of the south of France, about Marseilles. S. atropurpurea 37. 4. D. prod. 4. p. 657. Asterocephalus setifer, Spreng. Corollas lilac. Bristles of calyx 5, black.

Bristle-bearing Scabious. Pl. 2 feet.

20 S. grandiflora (Scop. del. ins. 3. p. 29. t. 14.) stem branched, downy; lower leaves ovate-spandulate, crossed or cut, rather villous; superior ones pinnate, with linear-lanceolate obtuse segments, the terminal segment the longest; corollas radiate, much longer than the involucrum. 2. H. Native of the south of France, about Marseilles. S. atropurpurea 37. 4. D. prod. 4. p. 657. Asterocephalus setifer, Spreng. Corollas cream-coloured or white, with reddish tubes. Bristles of calyx 5, reddish brown.


21 S. maritima (Lin. amon. 4. p. 304.) stem branched; radical leaves pinnatifid, with toothed lobes; middle cauline ones pinnatifid, with linear entire lobes; uppermost ones linear and quite entire; fructiferous heads globose; involucrum twice shorter than the radiant flowers. 0. or g. H. Native of the south of France, Corsica, Italy, and Sicily, in arid places by the sea. D. C. fl. fr. suppl. no. 3309 a. S. Cupani, Guss. prod. 1. p. 160. 0. S. angulata, Rafin. car. p. 81? S. atropurpurea var. Coul. Stem villous. Flowers lilac, rose-coloured or white.


22 S. daucoides (Desf. fl. atl. 1. p. 123. t. 35.) stem almost simple; lower leaves lyrate; cauline ones pinnate-parted, with linear acute cut segments; leaves of involucrum pinnatifid; bracteae exceeding the fruit. g. H. Native of Algiers, on hills. Coul. ditt. mss. 1824. Asterocephalus daucoides, Spreng. syst. 1. p. 388. Very Like S. atropurpurea. Plant downy. Corollas bluish or violaceous.

Carrat-like Scabious. Pl. 1 to 2 feet.

23 S. AMBIVIA (Teml. fl. supple. 5. 1826. p. 77.) plant glabrous; leaves fleshy, shining, crossed; radical leaves oblong, cauline leaves lyrate or pinnatifid, with oblong remote entire lobes; heads few-flowered, radiate; tube of corolla very long; corolla spongy, involute. 2. H. Native of the kingdom of Naples, at Paneta del Fusaro, in corn-fields by the sea side. Flowers purple or blue.

Ambiguous Scabious. Pl. 1 to 2 feet.

24 S. conocephale (Vivian. addl. fl. lin. in fl. lyb. p. 67.) plant hairy; radical leaves elliptic, toothed; cauline ones pinnate; flowers 5-cleft, pedicelate within the involucrum; involucels trifid; seed triaristate.—Native of Liguria, in the valley of T 2.
Andora, and Sicily. Perhaps a prolific variety of S. grandiflora, Guss. or S. atropurpurea.

**Horn-of-Plenty Scabious.** Pl. 2 feet.

25 S. *integrata* (Hoffm. et Link, fl. port. 2. p. 88.) lower leaves oblong, entire; inferior ones lyrate; upper ones pinnatifid or wanting; corollas 5-cleft, radiate. .getUserId(). Native of Portugal. Said to be allied to *S. Columbária* and *S. grandiflora.

**Entire-leaved Scabious.** Pl. 2 feet.

* Species belonging to the present tribe of the genus, but are not sufficiently known.

26 S. *limonfolia* (Vahl, symb. 2. p. 27.) stem shrubby; radical leaves coriaceous, obovate, quite entire, glabrous, and green above, but reticulated and clothed with hoaryomentum beneath; cauline leaves connate at the base; corollas equal, 6-cleft; crown scarious, plicate, denticulated at the apex, broad, extended; limb of calyx sessile; bristles of calyx 4-5, exserted. .getUserId(). Native of Portugal, among the mountains on calcareous rocks. Guss. 1825. prod. p. 164. Coult. dips. p. 42. Asterocephalus limonifolius, Spreng.—*Cop. pang. 2. t. 247.* Lower leaves like those of *Sulcata Limonium.* Corollas blue.

**Limonium-leaved Scabious.** Shrub.

27 S. *saxatilis* (Cav. 1825. icon. 2. p. 68. t. 184.) stem herbaceous, glabrous; leaves lanceolate, quite entire, green above, tomentose beneath; cauline leaves very few, connate at the base; corollas equal, 4-5-cleft; crown white, ciliated; bristles of calyx 5, purple.  getUserId(). Native of Spain, in the fissures of rocks, in Valencia. Coult. dips. p. 42. Asterocephalus saxatilis, Spreng. Corollas white; anths violaceous. Very like *S. sucissa.*


28 S. *s. titens* (Reem. et Schultes, syst. 3. p. 82.) stem herbaceous; leaves undivided, elliptic, serrated, shining, petiolate; corollas radiate, 5-cleft.  getUserId(). Native of the Azores. S. lúcia, Ait. hort. kew. ed. 1. vol. 2. p. 229. but not of Vill. Asterocephalus lúcidas, Spreng.


**Sect. III. Succisa (from succido, to cut down; on account of the praeorous root of the first species).** Coult. dips. p. 37. D. C. prod. 4. p. 657. but not of others. Base of involucres not distinguishable from the tube; having the foveole engraven from the base to the crown. Crown spreading, short, membranous. Limb of calyx sessile, with 5 bristles, of which some are sometimes abortive and sometimes all.

* Corollas 5-cleft.

29 S. *africa* (Linn. spec. p. 145.) stem shrubby; leaves lyrate, coarsely toothed, rather hairy; heads of flowers pedunculate; corollas hardly radiant; tube of involucel obovate; crown one-half shorter than the tube, 24-28-nerved; bristles of calyx 5, exserted.  getUserId(). Native of the Cape of Good Hope. Coult. dips. p. 37. t. 2. f. 12. Shrub evergreen, with the leaves variable in form, sometimes they are obovate-oblong, toothed at the base (Herm. par. t. 219.), sometimes cut at the base (Brey. icon. 33. t. 26.); 5 or 6. *Alissiama, Jacq. hort. vind. t. 185.*) sometimes lyrate pinnatifid (Herm. par. t. 221.). *Indurata, Lin. mant. p. 196. ex Reem. et Schultes, syst. 3. incisa, Mill. dict. no. 18. Young stems and leaves villous. Heads about the size of walnuts. Corollas white, but in the variety altissima pale purple or blue.


30 S. *Fusce* (D. C. prod. 4. p. 658.) stem branched, smoothish; leaves all pinnate, almost glabrous, with linear acute entire lobes; leaves of involucrum equal in length to the corollas, which are 5-cleft and radiant; crown of the involucel, which is somewhat cylindrical, membranous, and 3 times shorter than the tube; bristles of sessile calyx pale, twice the length of the crown.  getUserId(). Native of Dahuria. It was sent to Gey from Fischer under the name of *S. Dahurica.* Perhaps the same as *S. comosa, Reem. et Schultes, syst. 3. p. 84.? in which the corollas are said to be large, showy, and violaceous, and in this bluish-purple.

**Fischer’s Scabious.** Pl. 2 feet.

31 S. *semifapposa* (Salzm. pl. excis. 1825. ex D. C. prod. 4. p. 658.) plant hairy, rather canescent; stem herbaceous, branched; lower leaves oval, coarsely toothed, petiolate; superior ones pinnatifid, with oblong-linear, acute, subdentate lobes; heads of flowers pedunculate; leaves of involucrum linear-subulatate, ciliated, at length reflexed; corollas radiate; heads ovate; lower fruit of the heads without bristles; the rest furnished each with 5 long exserted bristles.—Native about Tangiers and Mogodor. *S. atropurpurea* γ, coroná erectá, Coult. dips. p. 37.

**Semi-papouose Scabious.** Pl. 1 to 2 feet.

32 S. *tuëïda* (Vill. Fl. dauph. 2. p. 293.) plant glabrous; stems usually 1-flowered; leaves shining; radical ones ovate-lanceolate, obtuse, crenated; cauline ones pinnatifid, with linear acute lobes; involucrum usually exceeding the radiant flowers; crown 20-24-nerved, 3 times shorter than the tube; bristles of calyx 5, black, equal in length to the flowers, but 3 times longer than the crown.  getUserId(). Native of France, in alpine places. Savoy, Switzerland, Austria, Syria, and Croatia. D. C. fl. fr. 4. p. 228. Rechb. pl. crit. 4. t. 381. S. strícta, Waldst. et Kt. pl. rar. hung. 2. t. 138. S. Nórica, Vest. bot. zeit. 1805. no. 3. Wahl. fl. carp. p. 39. S. Columbária a, Coult. dips. p. 38. exclusive of the two synonyms. Asterocephalus strietus, Spreng. Corollas pale blue, or of a pale violaceous colour. In the wild plant the stems usually bear only one head of flowers. This plant, with several of the following, are combined under the name of *S. polymorpha,* by Wibel, and by Couleur under that of *S. Columbária.*


33 S. *ame*ná (Jacq. fil. edoc. 1. p. 86. t. 59.) stem branched, rather hairy at the base; radical leaves obovate, toothed or lyrate, rather hairy; cauline leaves pinnatifid, with lanceolate acute nearly entire lobes; peduncules elongated, beset with retrograde villi under the heads; corollas radiate; crown 20-nerved, 3 times shorter than the tube; bristles of calyx 5, of a rufous brown colour, 4 times longer than the crown.  getUserId(). Native of Russia. S. nitida, Bernh. ex Reem. ex Schultes, syst. 3. p. 68. S. longipedunculata, Fisch. et Jacq. *Columbária a.* Coult. dips. p. 38. Asterocephalus aménus, Spreng. Flowers lilac or rose-coloured. There are varieties of this having the involucrum either longer or shorter than the flowers.

**Pleasing Scabious.** Fl. June, July. Clt. 1820. Pl. 2 to 3 feet.

34 S. *agustifolia* (Hoffm. verz. 1826. p. 206.) stem quite glabrous; leaves downy; radical ones petiolate, obovate, toothed; lower ones lyrate-pinnatifid, serrate at the tip; superior ones ovate, somewhat lyrate twice bipinnate, with linear lobes; peduncles scabrous from retrograde hairs at the apex; leaves of involucrum linear, terminated each by a hair.  getUserId(). Native country unknown. Said to be allied to *S. ame*na.

**Narrow-leaved Scabious.** Pl. 1 to 2 feet.

35 S. *ochroleu* (Linn. spec. p. 146.) stem branched, rather hairy; radical leaves lyrate-pinnatifid, downy on both surfaces; cauline ones pinnate-paired, with flat linear lobes; peduncules elongated, rather hairy; crown 20-nerved, one-half shorter than the tube; bristles of calyx fuscecent, 3 times longer than the crown.  getUserId(). Native of Europe, Caucasus, and Sp—
DIPSACEÆ. VI. SCABIosa.

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36 S. Scópóli (Link, enum. hort. berol. 1. p. 128. but not of Vis.) stem clothed with retrograde hairs above; leaves hairy; radical ones oblong, crenate; lower cauleine leaves pinnatifid; superior ones bipinnatifid; lobes linear, cut; leaves of involucrum linear, clothed with adpressed hairs. 2. H. Native of the northern part of Europe. Corollas cream-coloured. According to Link, this species comes nearest to S. ochrolelica, but differs from Coulter, to S. Banática.


37 S. Revesa (Lodev. ined. sem. hort. dorp. suppl. 1834. p. 6.) radical leaves oblong, obtuse, crenate, clothed with numerous hairs; the stem bearing a few; cauleine leaves pinnate, with deeply cut segments; peduncles beset with retrograde hairs; involucrum exceeding the corolla, which are rather radiate and 5-cleft. 2. H. Native country unknown. Said to be nearly allied to S. grandiflora and S. Scópóli.

Hoary Scabious. Pl. 8 to 2 feet.

48 S. KHZANTHâ (Viv. fl. lib. spec. p. 6. t. 3. f. a. b.) radical leaves elliptic: cauleine ones pinnate-lobed: lobes all linear; central peduncle rising from the root, bearing one head: the rest rising from the tops of the branches; leaves of involucrum 5, linear; corollas 5-cleft, radiant; bristles of calyx 5. 2. H. Native of Corynephorus, on the mountains.

Root-flowered Scabious. Pl. 1 to 2 feet.


Hladnik’s Scabious. Pl. 1 to 2 feet.

50 S. Humilis (Host, fl. austr. 1. p. 195. but not of Thunb.) stem branched, glabrous, ascending; lower leaves oblong, crenated or jagged: superior ones pinnate-parted: lobes jagged; peduncles beset with reflexed hairs; leaves of involucrum linear-subulate; corollas 5-cleft, radiant; bristles of calyx 5. 2. H. Native of the Alps of Austria, about Gemona. Corollas white, suffused with purple. Rehb. pl. crit. 5. p. 30. as.

Humble Scabious. Pl. 3 foot.

51 S. deglita (Horn. hort. hafn. 1. p. 127.) leaves all linear: or pinnatifid: peduncles very long; leaves of involucrum exceeding the corollas, which are 5-cleft and radiant. 2. H. Native of Italy. Flowers red or lilac. The plant we have in the gardens under this name appears to be nothing but S. Gra-nuâria.

Neglected Scabious. Fl. June, July. C1t. 1825. Pl. 1 to 2 feet.

52 S. Laciniâ (Licht. in Rem. et Schultes, syst. 3. p. 87.) plant downy; stem dichotomous; lower leaves obovate-oblong, unequally and bluntly serrated: superior ones pinnatifid; lobes cut, acute: corollas 5-cleft, radiant.—Native of the Cape of Good Hope. Leaves of involucrum downy, linear, acute, and sometimes bifid, one-half shorter than the corollas, which are pale violet.

Jagged-leaved Scabious. Pl. 1 to 2 feet.

53 S. Pyrenaica (All. ped. 1. p. 140. t. 25. f. 2. and 26. f. 1.) the whole plant clothed with cinerous tomentum; stem a little branched, few-flowered; radical leaves oblong, crenated: upper cauleine ones bipinnatifid: lobes linear, quite entire; corollas radiant; leaves of involucrum lanceolate; crown 3 times shorter than the tube, 20-nerved; bristles of calyx 5, 4 times longer than the crown. 2. H. Native of the south of Europe, on the lower mountains and hills; and of Africa, on the Taousch Mountains, in dry fields. Dub. bot. gall. p. 256. S. colubriâ, var. Coult. d. p. 38, exclusive of the synomymes. Corollas frequently reddish-purple, but most often of a bluish-purple.


54 S. holosérica (Bertol. dec. 3. p. 49.) plant clothed with soft hoary tomentose velvety down; lower leaves lanceolate, obtuse, crenated: superior ones pinnatifid, with lanceolate acute entire lobes; leaves of involucrum linear; corollas radiant; crown 20-nerved, 3 times shorter than the tube, which is hairy; bristles of calyx 5, black, twice longer than the crown. 2. H. Native of the Appenines, Abruzzo, Dalmatia, and the Pyrenees. D. C. fl. fr. 5. p. 480. Dub. ench. 1. p. 256. S. colubriâ holosérica, Coult. d. p. 39. Asterocephalus sericus, Spreng. Leaves sometimes all simple. Corollas bluish purple.


55 S.WEBRIA (D. Don, in bot. reg. t. 717.) plant clothed with soft silky hoary tomentum; lower leaves petiolate, obovate, crenated: superior ones pinnatifid, with ovate or oblong entire lobes; heads on long peduncles; corollas nearly equal; crown 4 times longer than the tube; bristles of calyx 5, black. 2. H. Native of Phrygia, on the top of Mount Ida. Asterocephalus Webleianus, Spreng. Flowers cream-coloured.

Webley’s Scabious. Fl. July. C1t. 1818. Pl. 4 foot.

56 S. mollis (Willd. enum. suppl. p. 7.) lower leaves supra-compound: superior ones bipinnate-parted: lobes of all very slender and filiform, smoothish, except the margins, which are rather pilose; peduncles very long, scabrous; involucrum equal to the corollas, which are 5-cleft and radiant; crown spreading; bristles of calyx 3-5, short. 2. H. Native country unknown. Rehb. pl. crit. 4. t. 355. S. capillâta, Roem. et Schultes, syst. 3. p. 64. Lower leaves lyrate, soft, tomentose, ex Link. enum. 1. p. 128. Flowers pale violaceous, ex Wild. Perhaps only a variety of S. colubriâ or S. Pyrenaeâ.

Soft Scabious. Fl. June, July. C1t. 1820. Pl. 2 to 3 ft.

57 S. puâma (Poir. dict. 6. p. 723.) plant hispid from grey pili; stem short, almost simple; radical leaves lyrate or pinnatifid, with obtuse toothed lobes: cauleine pinnate-parted, with linear acute lobes, which are sometimes trifid at the apex; leaves of involucrum lanceolate, villous, shorter than the corollas, which are 5-cleft and radiant; bristles of calyx 5, black, nearly equal in length to the corollas. 2. G. Native of the Cape of Good Hope. Asterocephalus pumilus, Spreng. S. acalulis, Lin. mant. 196. Thunb. fl. cap. p. 145. S. nudicalis, Lam. ill. no. 1351. Corollas cream-coloured or nearly white. Plant very hairy.

Dwarf Scabious. Pl. 3 foot.


59 S. dichotomâ (Ucria. pl. lin. add. 249. Willd. enum. 1. p. 144.) smoothish; stem dichotomous; heads almost sessile at the sides, globose; leaves oblong, entire: radical ones petiolate
and toothed: cauline ones almost sessile, quite entire; corollas equal; tube of involucral nearly cylindrical; crown 20-24-merved, one-half shorter than the tube; bristles of calyx spreading, very short, inclosed. O. H. Native of Mauritania, Sicily, &c. Coult. daps. 9. t. 2. f. 15. Guss. prod. 1. p. 163. Asterocéphalus dichotomus, Linn. gen. et spec. 8. S. parriflora, Desf. fl. atl. 1. p. 119. Lower leaves sometimes lyrate or jagged. Corollas 5-cleft, and flesh-coloured; but by some authors they are said to be 4-cleft.


Corollas 4-cleft.

61 S. Succisa (Linn. spec. 148.) root primrose, or appearing as if it was bitten off at the end; radical leaves ovate-lanceolate, acuminated at both ends: cauline leaves conuate, almost entire; heads of flowers pedunculate; leaves of involucrum disposed in 2-3 series; corollas equal; tube of involucrum 4-sided; crown very short, undulate; bristles of calyx short, a little exserted, conviven. O. H. Native of Europe even to Caucasus, very common in bogs and moists meadows and pastures; plentiful in Britain. Fl. dan. t. 279. Smith, engl. bot. t. 878. Curt. Lond. 3. t. 10. Coult. daps. p. 39. t. 2. f. 17. D. C. fl. fr. 4. p. 226. Blackw. t. 142. Asterocéphalus Succisa, Wallr. sched. 1. p. 52. Succisa praténis, Moench. meth. p. 489. The lower stem leaves are toothed, but the upper ones are entire. Involucrum hairy. Flowers violet or dark purplish blue, varying to flesh-coloured and milk-white. The leaves are sometimes gashed according to Haller, and the heads of flowers are sometimes proliferous. In cul-tivation the plant becomes more branched than in the wild state. In days of superstition it was fabled that the Devil, envying the good this herb might do to mankind, bit away a part of the root; hence the plant is commonly called Devil's-bit. This appearance of a stumped root is not peculiar to S. succisa, but is observed in some species of Plantágo, and many other herbs. According to Bergen the root is astringent, and the infusion of it bitters, but not unpleasant. A strong decoction of it, kept a good while, was formerly an empirical secret for gonorrhoeas. LINNEUS says that the dried leaves are used to dye wool yellow or green.

Var. a, hirútæ (Wallr. sched. l. c.) stem, peduncles, and both sides of leaves hairy. O. H. This is the British variety. Succisa hirútæ, C. Bauh. pin. p. 269.

Var. b, labrátæ (Wallr. sched. l. c.) stem and both sides of leaves glabrous. O. H. Succisa labrá, C. Bauh. pin. 269. S. labrá, Schott. in Roëm. et Schultes, syst. 3. p. 61.


62 S. austrális (Wulf. in Roëm. arch. 3. p. 216.) plant smoothish; leaves ovate, elongated, acuminated, almost quite entire: lowermost ones somewhat auriculated at the petioles; heads ovate; leaves of involucrum disposed in two series; corollas equal; tube of involucel lagenasiform; crown obsolete; bristles of calyx abortive. O. H. Native of Upper Italy, Syria, and Pannonia, in marshy parts of woods, and by the sides of rivulets. Coult. daps. p. 40. t. 2. f. 18. Richb. pl. crit. 4. t. 325. S. répens, Brigt. for Jul. 19. Nocc. et Balb. fl. ticin. 68. t. 2. S. pseudaustrális, Roëm. et Schultes, syst. 3. p. 60. Roots creeping, tufted. Corollas of a bluish violet or purple colour, but WULLEN says they are yellow; there are, therefore, 2 plants probably confused under this name, or only mere variations in the colour of the flowers.

Southern Devil's-bit. Fl. June, Aug. Clt. 1820. Pl. 1 ft. 63 S. tenuitólia (Linnaæa. vol. 8.) bristles of pappus twice longer than the denticulated calyx; corollas downy, equal, shorter than the involucrum; heads ovate; stem erect, branched; cauline leaves pinate, with linear, acute, quite entire, elongated segments. O. H. Native country unknown. Said to be nearly allied to S. Austrális.


† Species not sufficiently known.

§ 1. Leaves entire or serrated.

64 S. amplexicauli (Linn. mant. p. 195.) stem herbaceous, bracteolate; leaves stem-clasping, lanceolate, quite entire: radical ones trifid; corollas radiant. 4-cleft.—Native country unknown. Succisa amplexicaulis, Spreng. Said to be nearly allied to S. integrifólia, Lin. Corollas bluish. According to Coulter, it is probably a species of Knautia.

Var. b, lyrátæ (Roëm. et Schultes, syst. 3. p. 62.) lower leaves lyrate, obtuse, crenated; superior ones lanceolate, sessile. O. H. Native of France. S. lyrátæ, Lam. ill. no. 1310. Flowers pale red.

Stem-clasping-leaved Scabious. Pl. 1 foot.

65 S. Cochinní'nsis (Linn. coch. p. 68.) stem quite simple, nearly naked; leaves lanceolate, undivided, undulate; radical leaves quite entire; involucrum 3-leaved; corollas 5-cleft; pappus pilos.—Native of China and Cochín-china. Asterocéphalus Cochinní'nsis, Spreng. Flowers purple. Corollas 5-cleft, nearly equal. Bristles of calyx 5.

Cochín-china Scabious. Pl. 1 foot.

§ 2. Leaves lyrate or pinnate-lobed.

Corollas 4-cleft.

66 S. s Dahlurica (Willd. in Roëm. et Schultes, syst. 3. p. 521.) leaves pinnate-parted; tomentose; lobes pinnatifidly jagged; stem tomentose; corollas 4-cleft, radiant.—Native of Dahluria. Coult. daps. p. 41. There is another plant under this name by Fischer, cultivated in the gardens.

Dahurian Scabious. Pl. 1 foot.

67 S. hítra (Willd. in Roëm. et Schultes, syst. 3. p. 251.) leaves all pinnate, and are as well as the stem hairy; lobes or segments linear-lanceolate, acute; corollas 4-cleft, radiant.—Native of Siberia. Coult. daps. p. 41. The rest unknown.

Hairy Scabious. Pl. 1 to 2 feet.

Corollas 5-cleft.

68 S. Styriá'ca (Vest. in flora. 1821. p. 146.) plant clothed with fine hairs; stem much branched, many-flowered; leaves all pinnate-parted; lobes lanceolate, few, each furnished with a tooth; leaves of involucrum linear, spreading; corollas 5-cleft, radiant, outer lobes acute; crown quite entire; bristles of calyx wanting.—Native of Styria.

Styrian Scabious. Pl. 1 to 2 feet.

Cult. Many of the species of this genus are very ornamental, and are well fitted for decorating flower-borders. The perennial herbaceous kinds are easily increased by seed, or dividing at the root. The seeds of annual kinds only require to be sown
in the open ground. The shrubby species are increased by cuttings under a hand-glass, or by seed. The species most worthy of cultivation are Scutellaria, S. grammatifolia, S. atropurpurea, S. grandiflora, and many others.


Calyx of 5 unequal segments. Corolla regular, funnel-shaped, with a long slender tube, and 5-3-nerved segments; glandular spaces or areoles below the stamens, and alternate with them. Stamens 5, monadelphous; anthers combined by their lower half. Ovary inferior, 1-celled. Style smooth, clavate in the upper part; stigma capitate, undivided. Fruit or achene indehiscent, crowned by the rigid spiny segments of the calyx. Seed solitary, inverted, sessile. Embryo in the axis of fleshy albumen, slender. Herbaceous plants, with alternate leaves without stipulas. Flowers collected into heads, which are either terminal or opposite the leaves, surrounded by an involucrum, and bearing bracteas among the flowers. Flowers sessile, hermaphrodite or neuter. This is a very small tribe of plants, differing from Capparis in their albuminous pendulous ovulum, and half distinct anthers; and from Diphasaceae in their filaments being monadelphous, and their combined anthers.

Synopsis of the genera.

1. Calycera. Crown of fruit in some long horned, and in others short and scaly.

2. Boopis. Limb of corolla not contracted, campanulate. Fruit crowned by the segments of the calyx, which are stiff and membranous, but acute and spinaceous at the apex.

3. Acicarpa. Lower flowers of the heads fertile: superior ones numerous and sterile. Tube of anthers undivided. Fruit combined into a globose echinated head.

I. Calycera (from καλυξ, a calyx, and κερας, kerats, a horn; the crown of the fruit is a long horn). Cav. icon. 4. p. 34. t. 358. Juss. ann. mus. 2. p. 350. Pers. ench. 2. p. 500.

Lin. syst. Syneginesia, Necessaria. Involucrum 5-parted. Flowers fertile, dissimilar, and promiscuous. Segments of the calyx in some long and horn-formed, and in others short and scale-formed. Limb of calyx contracted a little below the lobes. Tube of stamens inserted a little below the contraction of the corolla, divided at the top. Herbaceous plants with sub-pinnatifid leaves and terminal heads of flowers.

1. Cavanillesi (Richard, in ann. mus. 6. p. 77.) glabrous; leaves semi-pinnatifid; fructiferous heads almost 2 inches long, globose; bracteoles narrow and subulate at the apex. F. Native of Chili. C. herbaracea, Cav. icon. 4. p. 34. t. 358. Pers. ench. 2. p. 500. Flowers green.

Cavanilles's Calycera. Pl. 1 foot.


Cosmary-leaved Calycera. Shrub 2 feet.

Cult. The species of Calycera should be grown in pots, in a mixture of loam, sand, and peat; and they will be readily increased by seed.

II. Boopis (from βοῦς, bous, an ox, and ως, ops, an appearance; the flowers have some resemblance to the eye of an ox). Juss. ann. mus. 2. p. 350. t. 58. f. 2. Pers. syn. 2. p. 500. Cassini, dict. 5. suppl. p. 28. Richard, mem. mus. 6. p. 87.

Lin. syst. Syneginesia, Necessaria. Involucrum 7-8-cleft. Flowers fertile, nearly alike. Segments of calyx shorter than the corolla, membranous, some entire, and some deeply toothed. Limb of corolla without any contraction, campanulate, half divided. Column of stamens inserted at the base of the limb of the corolla; tops of filaments distinct.—Many stemmed brancher herbs, with pinnatinate pinnatifid leaves, and terminal heads of flowers.

1. B. anthersoides (Juss. l. c.) leaves pinnatifid; segments of leaves linear. H. Native of Buenos Ayres, where it was first detected by Commerson. Pers. ench. 2. p. 500. Rich. l. c. p. 87, pl. ii.

Anthemis-like Boopis. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

2. B. alpina (Poep. mus. coll. 2. no. 833. ex Cham. et Schlecht. in Linnaea. 6. p. 258.) leaves oblong-obovate, fleshy, entire, or furnished with a tooth on one or on both sides, quite glabrous. F. G. Native of Chili. Root woody. Stem erect, simple, only leafy at the base. Corolla yellowish. Involucrum 12-toothed.

Alpine Boopis. Pl. 2 to 3 inches.


Leucanthema-leaved Boopis. Pl. 1 to 2 inches.

Cult. The seeds only require to be sown in a warm sheltered situation in the open ground.


Lin. syst. Syneginesia, Necessaria. Involucrum 4-5-parted: outer ones adnate to the ovary. Lower flowers of heads fertile, superior ones much more numerous and sterile, with the ovary of all combined. Segments of the calyx for the most part ending in acicular spines. Limb of corolla funnel-shaped. Column of stamens inserted beneath the attenuated part of the limb of the corolla, undivided to the top of the anthers. Bases of connectives knot-formed.—Herbaceous plants, with toothed or entire leaves, and terminal and lateral heads of flowers.

1. A. tribuloides (Juss. l. c.) plant erect, glabrous; leaves oblong, cuneate-obovate, obtuse, with broad teeth; style much exserted. H. Native of Buenos Ayres, where it was collected by Commerson. Cryptocarpa tribuloides, Cassini, dict. 12. p. 85.

Caltrop-like Acicarpa. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

2. A. spatulata (R. Br. comp. p. 29. Richard. mem. mus. 6. p. 78. pl. 12.) procumbent, glabrous; leaves spatulate, tapering a long way at the base, denticulated and entire at the apex, and mucronate; style a little exserted. H. Native of Brazil, where it was collected by Sello. Cryptocarpa spatulata, Cassini, dict. 12. p. 85.

Spatulata-leaved Acicarpa. Cit. 1824. Pl. proc.

3. A. lana (Lag. in Pers. ench. 2. p. 488.) stem woolly; leaves linear, glabrous, having a tooth on one side, and some-
times on both; uppermost leaves entire.—Native of New Spain.


Woolly-stemmed Aeciarpha. Pl. prostrate.

Cult. Being annual plants, the seeds only require to be sown in the open ground in a warm sheltered situation.

N. B. Cevallia sinuata (Lag. gen. et spec. p. 11. with a figure,) appears to be allied to the present order, but the characters of the plant are not sufficiently known.


Calyx superior, 5-toothed, or 5-parted, seldom entire, with the tube adnate to the ovary at the base. Corolla monopetalous, irregular, inserted in the calyx, 5-loped, or deeply 5-cleft. Stamens 5, inserted into the calyx alternately with the lobes of the corolla; anthers cohering; pollen oval. Ovary inferior, with from 1 to 3 cells, but usually of 2 cells. Ovula very numerous, attached to the axis or parietes of the fruit. Style simple; stigma usually 2-loped, surrounded by a cup-like fringe. Fruit capsular or baccate, 1-2-celled, rarely 3-celled, many seeded, dehiscent at the apex. Seeds attached to the axis or parietes of the fruit. Embryo straight, in the axis of fleshy albumen, with the radicle pointing to the hyắm.—Herbaceous plants or shrubs. Leaves alternate, exstipulate. Flowers axillary or terminal, of various colours.

This order appears more nearly related to Compositæ than to Campanulaceæ, in their cohering anthers, and in the irregularity of the corolla; the stigma is surrounded by hairs, which are probably analogous to the indium of Goodeniæ, to which order Lobelieæ approaches very closely. It participates in all the affinities of Campanulaceæ.

The plants contained in this order are all dangerous or suspicious, in consequence of the acidity of their milk. Topa Feuillei yields a dangerous poison in Chili. The most active article of the Materia Medica of North America is said to be Lobelia inflata; it is possessed of an emetic, sudorific, and powerful expectorant effect, especially the first. When given with a view to empty the stomach, it operates vehemently and speedily, producing, however, great relaxation, debility, and perspiration, and even death, if given in over-doses. Barton, 1. p. 189.

The antisyphilitic virtues ascribed to Lobelia syphilitica are supposed to have resided in its diuretic properties; they are, however, generally discredited altogether. Barton, 2. p. 211. Hippobromia longiflora, a native of some of the West India Islands, is one of the most venomous of plants. The Spanish Americans call it Rebeita Cavallos, because it proves fatal to horses that eat it; it acts as a violent cathartic, the effects of which no remedy can assuage, and which ends in death. The leaves are an active vesicatory. Lobelia cardinalis is an acrid plant, which is reckoned anthelmintic. Barton, 2. p. 180. All the plants contained in this order are very ornamental, and therefore well deserving the care of the gardener. The flowers are very showy blue, white, red, scarlet, but seldom yellow.

Synopsis of the genera.

1 Clermontea. Calyx tubular, 5-cleft. Corolla arched, 5-cleft, almost regular. Stamens with combined filaments and cohering anthers; the two lower anthers bearded. Stigma 2-loped, girded by hairs. Capsule baccate, naked at the apex, indehiscent, 2-celled, many-seeded.

2 Rollandia. Calyx 5-parted. Corolla compressed at the sides, with an undivided tube, and a 5-parted, somewhat bilabiata limb. Stamineous column adnate to the superior part of the corolla. Anthers cohering, two lower ones bearded. Stigma pilose. Capsule baccate, crowned by the calyx, 2-celled, many-seeded, indehiscent.

3 Cyanea. Calyx 10-furrowed, with oblong, foliaceous, curled segments. Corolla tubular, arched, with a 5-parted, somewhat bilabiata limb. Stamens, combined filaments, and cohering bearded anthers. Stigma capitate ciliated. Capsule baccate, 10-furrowed, indehiscent, crowned by the limb of the calyx, 2-celled, many-seeded.


5 Praidia. Limb of calyx 5-toothed (f. 119. a.). Corolla cleft on the back, even to the base, and therefore the limb is 5-parted, unilairate, or all on the lower side (f. 119. b.). Stamens combined above and the anthers cohering; the two lower anthers mucronate (f. 119. d.). Stigma 2-loped. Capsule baccate, crowned.

6 Tupa. Calyx spherical, 5-parted. Corolla cleft on the back almost to the base, having the limb divided into 5 segments, which are all united at their tips. Stamens combined almost to the base; anthers cohering, bearded. Stigma 2-loped, protruding. Capsule 2-celled, many-seeded.

7 Siphocampa Junius. Limb of calyx 5-parted (f. 120. d.). Corolla with a curved undivided tube, which is ventricose in the middle, and a 5-parted bilabiata limb (f. 120. b.). Stamens and anthers combined; anthers bearded. Capsule 2-celled, 2-valved, dehiscent.

8 Lobelia. Limb of calyx 5-parted (f. 121. a.). Corolla with the tube cleft on the upper side, and thickened at the base, and a bilabiata limb (f. 121. g.). Anthers cohering; 2 lower ones usually bearded. Capsule 2-celled, 2-valved, dehiscent at the apex.

9 Dortmann. Limb of calyx 5-parted. Corolla with the tube cleft on the upper side, a bilabiata limb, and a bearded throat. Stamens with free filaments, and cohering bearded anthers. Stigma capitate, hairy. Capsule half-spherical, 3-celled, 3-valved, dehiscent, many-seeded, surrounded by the calyxine segments below the apex.

10 Parastranthus. Limb of calyx 5-cleft. Corolla
with hardly any tube, and a bilabiate, 5-parted, reversed limb. Column of stamens under the lower lip. Filaments and anthers combined; the latter bearded. Stigma bifid or trident. Capsule crowned by the segments of the calyx, 2-celled, many-seeded.

11 Isótoma. Limb of calyx 5-parted (f. 122. a.). Corolla salver-shaped (f. 122. d.), or funnel-shaped, with an entire or cleft tube, and a 5-parted, nearly regular limb (f. 122. d.). Filaments combined; anthers cohering, beardless; the two lower ones mucronate. Stigma capitate, protruding. Capsule 2-celled, many-seeded, dehiscent.


13 Lystróma. Limb of calyx 5-parted. Corolla with an entire tube, and a 5-parted sub-bilabiate limb. Anthers cohering; the 2 lower ones bearded, or terminating in a membranous process. Stigma 2-lobed, ciliated. Capsule 1-celled, opening by an operculum at the apex, many-seeded.

14 Mosórsis. Calyx tubular, 5-cleft. Corolla salver-shaped, with a terete tube, which is cleft on one side, allowing the stamens to escape, and a regular rotate limb. Anthers cohering. Capsule 2-celled, many-seeded, dehiscent.


17 Cýnia. Limb of calyx 5-cleft. Corolla bilabiata, 5-parted; the segments easily separated to the base. Stamens with combined hairy filaments, and free anthers. Stigma hollow, gibbous, bearded. Capsule 2-celled, many-seeded, dehiscent.

18 Canonaénthus. Calyx hemispherical, with a 5-parted limb. Corolla tomentose outside, campanulate, regular, 5-parted at the apex. Stamens with free filaments, and combined anthers. Capsule unknown.


Lin. syst. Pentándria, Monogýmia. Calyx tubular, arched, 5-cleft, coloured, length of corolla, caducous. Corolla tubular, arched, 5-cleft, almost regular. Stamens 5, one of which falls off along with the corolla, with combined filaments and cohering anthers; the 2 lower ones bearded. Stigma 2-lobed, girded by pili. Capsule baccate, 2-celled, naked at the apex, dehiscent; cells many-seeded.—Shrubby or arboreous laetaceous plants. Leaves alternate, entire. Flowers racemose, axillary, bracteate, showy, white, or of a rose-violet colour, blue.

1 C. oblongífolia (Gaud. l. c. t. 71.) leaves on very long petioles, oblong, acutius, crenated; calyx 5-parted. ½. G. Native of the Sandwich Islands.

Oblong-leaved Clermontea. Shrub.

2 C. perviciófólia (Gaud. l. c. t. 72.) leaves oblong-lanceolate, acute, crenated; calyx 5-cleft. ½. G. Native of the Sandwich Islands. Lobélia Clermontiánea, Gaud. mss.

Peach-leaved Clermontea. Shrub.

3 C. grándifólia (Gaud. l. c. t. 73.) leaves obovate-oblong, rather acuminate, dentately crenated; flowers large; calyx 5-parted. ½. G. Native of the Sandwich Islands. Lobélia grandifólia, Gaud. mss.

Great-flowered Clermontea. Shrub.

Cult. All the species of this genus bear ornamental blossoms, and are therefore worth cultivating in every collection of greenhouse plants. A mixture of loam, sand, and peat is the best soil for them; and they will be easily increased by cuttings planted in the same kind of soil, under a hand-glass, in a little bottom heat.

II. ROLLA´NDIA (named after R. M. Rolland, gunner of the expedition under Freycenet, who rendered great services to ornithology). Gaud. in Freyc. voy. pt. bot. p. 458.

Lin. syst. Pentándria, Monogýmia. Calyx closely adhering to the ovary; limb free, 5-parted, with short obtuse segments. Corolla tubular, with the sides compressed; tube curved, undivided; limb 5-parted, somewhat bilabiate: segments narrow, Stamens 5. Staminate tube adnate at the bottom to the superior part of the tube of the corolla. Anthers cohering, two lower ones bearded. Stigma 2-lobed, girded by hairs. Capsule baccate, indehiscent, 2-celled, crowned by the permanent calyx; cells many-seeded.—Laetaceous shrubs. Leaves alternate, exstipulate. Peduncles axillary, few-flowered. Pedicels unibracteate at the base. Flowers white.

1 R. lanceolatá (Gaud. l. c. t. 74.) shrub branched; leaves large, oblong-lanceolate, doubly toothed, hairy beneath; calyx 5-parted, glabrous, with ovate obtuse segments; racemes few-flowered; stamens epipetalous. ½. G. Native of the Sandwich Islands. Lobélia Rollandiánea, Gaud. mss. Lobélia lanceolata, Hook. et Arn. in Beech, voy. pt. bot. p. 88.

Lanceolate-leaved Rollandia. Shrub.

2 R. crípá (Gaud. l. c. p. 459.) shrub branched; leaves large, oblong, tapering much to the base, sharply toothed, glabrous, with undulately curled margins; calyx 5-parted, downy, with ovate obtuse segments; stamens epipetalous. ½. G. Native of the Sandwich Islands. Lobélia crispa, Gaud. mss.

Crepid-leaved Rollandia. Shrub.

3 R. pinnatífida; leaves oblong-lanceolate, acute at both ends, running into the short petioles, remotely pinnatifid, sinuately and doubly toothed: flat and glabrous above, reticulately veined beneath and rather hairy; teeth short, and are as well as the lobes obtuse and callously mucronate; racemes axillary; calyx and corolla hairy; ovary obconical, crowned by the auriculate, ovate, obtuse, calycine segments. ½. G. Native of Owahu, on the mountains. Lobélia pinnatifida, Cham. in Linnae. 7. p. 221. Leaves like those of a species of Sóechus. Pedicels rising from a fleshy peduncle, and furnished with scale-shaped bracteae. Corollas 2 lines long, deciduous. Stem branched. Perhaps a species of Cygnea.

Pinnatifid-leaved Rollandia. Shrub.

4 R. amácuá; leaves oblong-lanceolate, acute at both ends, sinuately and doubly toothed, flat and glabrous above, and hairy beneath and fussescent: teeth callously mucronate; racemes axillary; ovary obconical, smooth; calycine segments ovate, obtuse, mucronate, rather hairy; corolla hairy, especially on the nerves. ½. G. Native of Owahu. Lobélia ambigua, Cham. in Linnae. 7. p. 221. Stem simple. ? Corolla deciduous.
LOBELIACEÆ. III. CY'ANEÄ. IV. DELISSEA. V. PRATIA.

**Ambiguous Rollandia.** Shrub.  
5 R. calycina; leaves oblong-lanceolate, acute at both ends, unequally and erose crenated, flat and pilose above, and reticulately veined, fuscous and hairy beneath; calyx glabrous, with oblong, bluntish, 1-nerved segments; ovary olive-formed, crowned by the erect calyceine teeth; limb of corolla hairy; tube of anthers hairy about the base and along the furrows. "G. Native of Oahu. Lobélia calycina, Cham. in Linnaea. 7. p. 229. Corolla deciduous.

**Large-calysed Rollandia.** Shrub.  
Cult. See Clermontia, p. 698. for culture and propagation.

**III. CY'ANEÄ (from κυανός, kyanos, blue; colour of flowers).** Gaud. in Freyc. voc. pt. bot. p. 457.

**LIN. SYST. Pentândria, Monogynia.** Calyx adhering to the ovary, 10-furrowed, longer than the limb, which is foliaceous and 5-parted; segments oblong, with reflexed undulate curled margins. Corolla tubular, cylindrical, arched; limb 5-parted, somewhat bilabiata. Stamens 5, with combined filaments, and cohering bearded anthers. Stigma capitate, simple, ciliated with hairs. Capsule baccate, 10-furrowed, indescent, 2-celled, crowned by the permanent calyx; cells many-seeded.

1 C. Grimes's Cyanea (Gaud. l. c. p. 458. t. 78.) bracketed; leaves large, pinnae-parted, smoothish, with lanceolate coarsely toothed segments; petioles, rachis, and pedunciles beset with tubercular prickles; segments of calyx large. "G. Native of the Sandwich Islands. Lobélia Grimesiana, Gaud. mss. Hook. et Arn. in Beech. voc. pt. bot. p. 88.

Grimes's Cyanea. Shrub.  
Cult. See Clermontia, p. 698. for culture and propagation.

**IV. DELISSEA (named after A. M. Delisse, a physician from the Isle of France, and naturalist to the French expedition under D'Entrecasteaux, to the South Seas—from 1800 to 1804).** Gaud. in Freyc. voc. pt. bot. p. 457.

**LIN. SYST. Pen'tândria, Monogynia.** Calyx closely adnate to the ovary; limb free, 5-toothed, permanent. Corolla tubular, arched, deciduous; tube cylindrical, undivided; limb 5-parted, somewhat bilabiata; segments narrow. Stamens 5, with connate filaments, and cohering anthers; the two lower ones bearded. Stigma 2-lobed, girded by hairs. Capsule baccate, crowned by the permanent calyx, 2-celled, indescent; cells many-seeded.—Shrubby lacysecent plants. Leaves scattered, exstipulate, entire. Flowers racemose, axillary, pale red, or white or red; pedicels unibracteate at the base.

1 D. *Subcordata* (Gaud. l. c. p. 457. t. 77.) bracketed; leaves ovate, sharply toothed, glabrous. "G. Native of the Sandwich islands. Lobélia subcordata, Gaud. mss.

Subcordate-leaved Delissea. Shrub.  
2 D. *Undulata* (Gaud. l. c. t. 78.) stem simple; leaves oblong, sharply and coarsely toothed, glabrous, with undulate margins. "G. Native of the Sandwich Islands. Lobélia undulata, Gaud. mss.

Undulate-leaved Delissea. Shrub.  
3 D. acuminata (Gaud. l. c. t. 76.) bracketed; leaves oblong, doubly dentilicate, hairy on both surfaces. "G. Native of the Sandwich Islands. Lobélia Delissea, Gaud. mss.

LOBELIACEÆ. III. CY'ANEÄ. IV. DELISSEA. V. PRATIA.

**Narrow-leaved Delissea.** Shrub.  
Cult. For culture and propagation see Clermontia, p. 698.

**V. PRATIA (named in memory of M. Prat-Bernon, of the French navy, who accompanied Freycinet, but died a few days after the expedition sailed).** Gaud. in Freyc. voc. pt. bot. p. 456.—Lobélia species of authors.

**LIN. SYST. Pen'tândria, Monogynia.** Calyx adnate to the ovary; limb free, 5-toothed (f. 119. a.). Corolla funnel-shaped, cleft on the back, even to the base; limb 5-parted, spreading, unilabiate (f. 119. b.). Stamens 5, with the filaments combined into the tube above, and the anthers cohering; the two lower anthers mucronate (f. 119. d.). Stigma 2-lobed. Capsule covered by the fleshy calyx, 3-celled (f. 119 e.); indescent; cells many-seeded.—Small herbs. Stems filiform, branched. Leaves thickish. Flowers axillary, solitary, pedunculate, rarely corymbose, of a pale violet colour; peduncles bracteolate.

1 P. repens (Gaud. in Freyc. voc. p. 456. t. 79.) glabrous; stems creeping; leaves petiolate, rather reniform, undulate subcrenated. "F. Native of the Falkland Islands. Lobélia Pratiana, Gaud. mss. Flowers bluish-violet (f. 119. e.).

Creeping Pratia. Pl. creeping.


**Erect Pratia.** Fl. May, June. Cult. 1819. Pl. 1 foot.

3 P. corymbôsa; glabrous; stems weak, angular, branched; superior leaves linear-spatu-late; lower ones roundish, running into the petioles: all deeply serrated; flowers disposed in dense pedunculate corymbs; "F. Native of the Cape of Good Hope. Lobélia corymbosa, Hook. in bot. mag. t. 2639. Flowers pure white, richly dotted with purple, capitulate. Filaments and anthers combined; the latter bluish purple. Stigma capitulate, surrounded by a circle of hairs. Corymbose-flowered Pratia. Fl. June, July. C. 1824. Pl. 4. decumbent.

4 P. hederaceâ (Cham. in Linnaea. 7. p. 212.) glabrous; stems filiform, creeping; leaves on short petioles, orbicular, crenately toothed. "F. Native of Brazil, on the banks of the Uruguay, along with Hydrocotyle pusilla, and other parts of Brazil. Corolla bluish, villous inside. Filaments ciliate inside. Pedicels exceeding the leaves.

**Ivy-like Pratia.** Pl. creeping.

5 P. begoniæfolia; leaves roundish-cordate, serrate, petiolate, hairy on both surfaces, oblique at the base; pedicels solitary; calyce segments linear-subsutate; stems filiform, creeping, hairy. "F. Native of Nipaul, at Suembu, in fields near the town of Katmandu, and near water-courses and springs. Lobélia begoniæfolia, Wall. in asiat. res. 13. p. 377. Hook. bot. mag. with a figure. L. obliqua, Ham. mss. ex D. Don, prod. fl. nep. p. 158. Herb rather canescent. Flowers small, blue. Fruit round, fleshy, about the size of a pea, purple, with numerous flattened brownish seeds attached to 2 thick septal placentas.


4 v 2
LOBELIACEAE. V. PRATIA.

6. P. radi'cans; an annual, creeping, glabrous herb; leaves sessile, lanceolate, remotely serrated; pedicels axillary, solitary, twice the length of the leaves. 2. G. Native of China, from which place it was accidentally introduced to the botanic garden, Calcutta. Lobelia radiicans, Willd. spec. 1. p. 948. The plant spreads over the soil and roots at every branch. The flowers are large for the size of the plant, of a pink colour. Segments of the corolla equal, unilateral, and narrow-lanceolate, with 2 green glands under the middle sinuses, opposite to the long, green, 2-lobed stigma.

Rooting Pratia. Pl. creeping.


Thunberg's Pratia. Pl. creeping.

Cult. A mixture of loam, peat, and sand is a good soil for the species of Pratia; and they will easily be increased by dividing at the root, or by seed.

VI. TUPA (Tupa is the Chili name of the first species). Lobelia species of authors.

LIN. SYST. Pentandria, Monogynia. Calyx adhering to the spherical ovarium; limb 5-cleft. Corolla long, inflated at the base, cleft on the back its whole length, unlabiate; limb divided into 5 segments, which are all united at their tips. Stamens 5, united into a tube; anthers cohering, all bearded, or only in 2 lower ones. Style protruding beyond the anthers; stigma orbicular, 2-lobed, not bearded. Capsule 3-celled, 3-valved? cells many-seeded.—Tall strong herbaceous plants. Leaves alternate, ovate-lanceolate, downy. Flowers pedicellate, disposed in terminal racemes, or solitary from the axils of the upper leaves. Superior leaves sessile.

1. T. Feuillei; stem erect, thick, suffruticose at the base, simple, leafy; leaves ovate-lanceolate, sessile, decurrent, clothed with soft whitish down; raceme terminal, spike-like. 2. G. Native of Chili and Peru. Lobelia Tupa, Lin. spec. 3138. Sims, bot. mag. 2550. Sweet. fl. gard. 234. Feuille. per. 2. p. 739. t. 29. Corollas large, of a reddish scarlet colour, and are as well as the peduncles and calyces downy. This is a very poisonous species, even the smell of the flowers will cause vomiting, accordingly Feuille, and the milk of it, if by any accident it touches the eyes, occasions blindness.


2. T. sa'liciifolia; leaves lanceolate, sessile, glabrous, serrulated, reticulated beneath; pedicels axillary, bracteate, 1-flowered, shorter than the leaves; stem terete, filled with medula, simple or branched. 2. G. Native of Chili, about Valparaiso. Lobelia Tupa, Ait. hort. kew. 1. p. 357. Lobelia gigantea, Sims, bot. mag. 1325. Lobelia sa'licifolia. Sweet. Corollas yellow at first, then orange, and finally blood-red. Anthers hairy.


3. T. purpurea; leaves lanceolate, serrated, glabrous; flowers racemose; calyx spherical, 5-toothed; stem simple suffruticose. 2. G. Native of Chili, in the neighbourhood of Valparaiso. Anthers hairy. Lobelia purpurea, Lindl. bot. reg. 1325. Flowers fine purple.


4. T. argu'ta; leaves linear-lanceolate, serrulated, quite glabrous on both surfaces; pedicels axillary, shorter than the leaves; stem suffruticose, simple, glabrous. 2. G. Native of Chili. Lobelia arguta, Lindl. in bot. reg. 973. Pedicels bibracteate in the middle. Corollas of a deep yellow colour. Tube of anthers shorter than the style. Very like T. salicifolia.

VI. TUPA. VII. SIPOCAMYLYS.


Canaville's Tupa. Shrub 2 to 5 feet.

6. T. secunda; glabrous; leaves elliptic-lanceolate, wrinkled when dried, denticulated, with rather revolute edges; racemes terminal, axillary, 2-3, central, short; pedicels rising from the base of the upper leaves or bracteas, which are small and linear; column of stamens much exerted; two upper anthers bearded. 2. G. Native of Peru. Lobelia secunda, Ruiz et Pav. in herb. Lamb. Leaves dense. Segments of calyx membranous.

Secondflowered Tupa. Shrub.

7. T. ou'ata; glabrous; leaves ovate, slightly and distantly denticulated on the edges, wrinkled when dried; raceme long, terminal, linear, dense, secund; column of stamens much exerted; anthers bearded on the lower side. 2. G. Native of Peru.

(v. s. in herb. Lamb).

Ovate-leaved Tupa. Pl.

8. T. obovata; leaves obovate, obtuse, clothed with rusty tomentum beneath, slightly denticulated; pedicels axillary, 1-flowered, longer than the leaves; calyx spherical; corolla rather short. 2. G. Native of Peru. Lobelia incana, Ruiz et Pav. in herb. Lamb. Leaves wrinkled when dried. Flowers purple or red. Anthers all bearded.

Ovate-leaved Tupa. Pl. 2 to 3 feet.

9. T. polyphylla; leaves ovate-lanceolate, mucronate, sharply serrated, quite glabrous; racemes terminal leafy; tube of corolla not much longer than the calyx; two lower anthers bearded. 2. G. Native of Chili, on hills about Valparaiso. Lobelia polyphylla, Hook. et Arn. in Beech. voy. pt. bot. p. 33. Pedicels filiform, about the length of the bracteas. Corolla hardly an inch long, downy, dark purple.


Cult. The species of Tupa are deserving of cultivation in every collection, on account of the beauty and singularity of their flowers. They are generally raised from seed imported from the places of their natural growth; and when the plants are of a sufficient size, they are planted out into the open border in front of a south wall, where they flower in great perfection. In winter they may either be protected with the haum of herbs, or be taken up and put, and placed in a greenhouse or frame till the spring, when they should again be planted out.

VII. SIPOCA'MYLYS (from σιφων, siphon, a tube, and καυσάθως, kampsus, a curve; in reference to the curved tube of the corolla). Pohl. pl. bras. 2. p. 104.—Lobelia species of authors.

LIN. SYST. Tetrandria, Monogynia. Calyx adnate to the ovarium; limb 5-parted (f. 120. d.), having the segments shorter than the tube of the corolla. Corolla irregular, tubular (f. 120. a.); tube entire, decinate, rather ventricose in the middle, and rather concave at the base; limb 5-parted, bilabiate (f. 120. b.); upper lip of 2 straight or spreading segments; the 2 lower segments of the lower lip diverging, and the middle one more profound. Stamens and anthers combined, the latter bearded. Capsule ovate, 2-celled, 2-valved, dehiscing at the apex.—Erect shrubs or subshrubs. Leaves alternate and opposite, petiolate. Flowers axillary, solitary, rarely crowded at the tops of the stem or branches, so as
to appear racemose. The segments of the corollas are usually falcate or lanceolate; the upper ones generally the longest. The 2 lower anthers are usually bearded, and sometimes they are all bearded.

1 S. macra’nthus (Pohl, pl. bras. 2. p. 105. t. 168.) leaves oblong-ovate, acute, dentilicate, quite glabrous; tube of corolla ventricose at the apex, incurved; calyx glabrous, having the segments the length of the third part of the tube of the corolla. S. Native of Brazil, about Rio Janeiro, and elsewhere in that province, in shady bushy places.—Vaud. in Rom. script. p. 147. no. 2. Stem fistular, simple, green. Flowers axillary, solitary, approximate at the tops of the stems, and forming leafy racemes. Corollas of a bluish red colour. Anthers all much bearded at the apex.

Long-flowered Siphocampylus. Shrub 3 feet.

2 S. calyx (Pohl, pl. bras. p. 106. t. 169.) leaves ovate, acute, and rather villous, downy beneath; tube of corolla glabrous, rather ventricose; segments of calyx hairy, 4 times shorter than the tube of the corolla. S. Native of Brazil, in the province of Minas Geraes. Stem medullary in the centre, simple, hairy, a little branched. Flowers axillary, approximate at the top of the stem and branches, forming leafy racemes. Corollas of a bluish red colour.

Hoary Siphocampylus. Shrub 2 to 3 feet.

3 S. crenati-foliis (Pohl, pl. bras. 2. p. 107. t. 170.) leaves oblong, somewhat attenuated at the base, deeply crenated, downy beneath; tube of corolla glabrous, ventricose; calyx hairy, having the segments 4 times shorter than the tube of the corolla. S. Native of Brazil, in the province of Minas Geraes, among bushes about Villa St. João d’el Rey. Stem suffruticoso, fistular, tetragonal, furrowed. Leaves 3 inches long, and 1½ broad, yellowish green. Flowers axillary, solitary, remote, but so crowded at the tops of the stems as to appear leafy spikes; of a bluish red colour.

Crenate-leaved Siphocampylus. Shrub 2 to 3 feet.

4 S. villosululus (Pohl, pl. bras. 2. p. 108. t. 171.) leaves oblong-ovate, acute, deeply serrated, hairy, rather villous beneath, and truly villous on the nerves; corolla rather hairy; calyx having the segments 4 times shorter than the tube of the corolla. S. Native of Brazil, among bushes at Estrema, not far from Rio de Jiquitinhonha. Stem fistular, tetragonal, rather villous. Leaves 2 inches long, and 1½ broad. Flowers axillary, solitary; the upper ones forming leafy racemes. Corolla of a bluish-red colour.

Fimbrous Siphocampylus. Pl. 2 feet.

5 S. longipedunculatus (Pohl, pl. bras. 2. p. 109. t. 172.) leaves cordate at the base, and acuminate at the apex, dentilicate, quite glabrous; flowers solitary, on very long peduncles; tube of corolla ventricose, and is as well as the calyx glabrous; segments of the calyx 5 times shorter than the tube of the corolla. S. Native of Brazil, in the province of Rio Janeiro, among bushes. Stem suffruticoso, filled with medula, simple, glabrous. Leaves more than 3 inches long, and 1½ broad. Flowers all remote, on peduncles 4 inches in length. Corollas bluish-red.

Long-pedunculate Siphocampylus. Shrub 3 feet.

6 S. cardiophyllus (Pohl, pl. bras. 2. p. 110. t. 173.) leaves cordate, acuminate, rather undulated, quite glabrous, with remote short dentilications; flowers solitary, on long peduncles; tube of corolla as well as the calyx glabrous; calyce segments much shorter than the tube of the corolla. S. Native of Brazil, in the province of Minas Geraes, among bushes in mountainous places at Serra de Chumbo, not far from Rio Abaite. Stem suffruticoso, fistular, a little furrowed, glabrous. Leaves 2½ inches long, and more than an inch broad; the dentilications are the extension of the veins. Upper flowers forming a leafy raceme. Corolla bluish-red, having the segments ciliate.

Heart-leaved Siphocampylus. Shrub 3 feet.

7 S. sirius (Pohl, pl. bras. 2. p. 111. t. 174.) leaves coriaceous, acute, and rather villous, quite glabrous, shining, opake beneath, and the nerves are pilose when examined by a lens; tube of corolla rather ventricose, and rather hairy when examined by a lens; calyx downy, having the segments 3 times shorter than the tube of the corolla. S. Native of Brazil, in the province of Minas Geraes, about Facendo do Apolloniar, not far from Rio Abaite. Stem suffruticoso, filled with medula, glabrous. Leaves 2½ inches long, and more than an inch broad. Superior flowers forming a leafy raceme. Corolla bluish-red, hairy.

Shining-leaved Siphocampylus. Sh. 2 to 3 feet.

8 S. cortusiferus (Pohl, pl. bras. 2. p. 112. t. 175.) leaves cordate, acuminate, deeply and marginately toothed, ciliate, glabrous, rather hairy on the nerves and veins beneath; tube of corolla rather ventricose, glabrous; calyx glabrous, having the segments much shorter than the tube of the corolla. S. Native of Brazil, in the province of Minas Geraes, among bushes in mountainous places about Vieira. Stem herbaceous, fistular, glabrous. Leaves more than 2 inches long and an inch broad. Corymbs terminal, simple, many flowered. Corollas scarlet, smooth.

Corymbose-bearing Siphocampylus. Pl. 2 to 3 feet.

9 S. colu-mene; leaves oblong, rounded at both ends, crenate, coriaceous, rugged above, glabrous, and shining, but clothed with fuscouscent tomentum beneath; pedicels axillary, longer than the leaves; corolla a little curved, beset with stellate tomentum outside, having the segments linear-falcate, and nearly equal. S. Native of New Granada, in high places near the city of Santa Fe de Bogota. Lobelia Colunmæ, Mutis in Lin. suppl. p. 393. Smith, icon. ind. 1. p. 22. t. 22. H. B. et Kunth, nov. gener. 3. p. 302. Calyx tomentose outside. Two lower anthers bearded. Corollas red.

Column-forming Siphocampylus. Shrub.


Bearded Siphocampylus. Shrub 3 to 4 feet.

11 S. ferrugineus; leaves obovate-oblong, acutish, obliquely dentilicate, smoothish above, but clothed with rusty stellate tomentum beneath, especially on the nerve and veins; flowers axillary, pedicelate, longer than the leaves; calyce segments 4 times shorter than the tube of the corolla. S. Native of New Granada, near Santa Fe de Bogota; and of Peru, near Guanantamanta and Obragillo. Lobelia ferruginea, Mutis, Lin. suppl. p. 394. L. asclepiadea, Willd. rel. in Rom. et Schultes, syst. 5. p. 57. Branches clothed with rusty stellate tomentum. Calyx and corolla clothed with rusty stellate tomentum. Corolla red. Genitalia exerted. Two lower anthers bearded.

Rusty Siphocampylus. Shrub.

12 S. caoetchovic; leaves oblong, acute, rounded at the base, with glandularly dentilicate edges, smoothish above, but clothed with rusty tomentum beneath, particularly so on the nerve and veins; flowers axillary, pedicelate, shorter than the leaves; segments of the calyx dentilicate, one-half shorter
than the tube of the corolla. \* S. Native of the province of Popayan, in valleys near the river Mayo, near La Cruz; also in Paramo de Achipallas. Lobélia Caoutchouc, Willd. \* of Roem. et Schultes, \* t. 57. H. B. et Kunth, nov. gen. amer. 3. p. 304. Branchlets, calyx, and corolla clothed with rusty stellate tomentum. Corollas red. Gentians exerted. Antlers bearded. The milk from this plant forms an elastic gum, which is called Caoutchouc by the natives.

**Caoutchouc Siphocampylus.** Shrub 10 to 15 feet.

13 S. \* umbellatus; leaves oblong-lanceolate, acuminate, denticulate, smoothish above, and downy beneath; flowers crowded into umbels at the tops of the branches, on long pedicels; segments of calyx equal in length to the tube of the corolla; lower lip of corolla entire, acute. \* S. Native of Peru, on the Andes, near Ayavaca; also of Brazil. Lobélia umbellata, H. B. et Kunth, nov. gen. amer. 3. p. 304. t. 268. L. Ayavacensis, Willd. \* of Roem. et Schultes, \* t. 57. A fétid shrub, with villous angular branches. Leaves a foot long. Calyx clothed with viscid hairs. Corolla white, downy. Antlers bearded with yellowish hairs. This will probably form a distinct genus from the lower lip of the corolla being entire. **Umbellate-flowered Siphocampylus.** Shrub.

14 S. \* giganteus; leaves oblong-lanceolate, acuminate, toothed, reticulately wrinkled, glabrous above, and downy beneath, and clothed with hoary tomentum along the nerves and veins; flowers axillary, on very long peduncles; calyx segments equal in length to the tube of the corolla; filaments glabrous. \* S. Native of New Granada, on elevated plains about Bogota; and on the Andes. Lobélia gigantea, Cav. \* of Roem. et Schultes, \* p. 305. Branches downy. Calycine segments irregularly crenated. Calyx and corolla downy outside. Antlers bearded, with long yellowish hairs. Corolla of a yellowish red colour. Intermediate between **Siphocampylus** and **Tupa.**

**Giant Siphocampylus.** Shrub 14 feet.

15 S. \* foetidus; leaves lanceolate-oblong, acuminate, narrowed at the base, denticulate, hairy on both surfaces; flowers axillary, on long pedicels; segments of the calyx equal in length to the tube of the corolla; filaments downy. \* S. Native along with the preceding. Lobélia foetida, Willd. \* of Roem. et Schultes, \* t. 57. H. B. et Kunth, nov. gen. amer. 3. p. 305. Branches hairy, fuscuscent. Pedicels villous, bibracteate at the base. Corolla white? Calyx and corolla hairy outside. Gentians exerted. Antlers densely bearded with yellowish hairs. A fetid shrub.

**Fétid Siphocampylus.** Shrub.

16 S. \* miltius; hairy; leaves oblong, acuminate, serrated, on very short pedicels; pedicels axillary, very long, at the tops of the stem and branches. \* S. Native of Quito, on Mount St. Antonio. Lobélia hirta, Cav. \* of Roem. et Schultes, \* p. 13. t. 520. Branched. Leaves more than 6 inches long and 1½ broad, tapering into the pedicels. Calyx globose, villous. Corollas scarlet, villous. Stamens glabrous.

**Hairy Siphocampylus.** Shrub 5 to 6 feet.

17 S. \* comosa; leaves lanceolate, toothed, powdery beneath; corollas terminal, supported by a tuft of leaves. \* S. Native of New Spain. Lobélia comosa, Cav. \* of Roem. et Schultes, \* p. 9. t. 512. f. 1. Stems simple, furrowed. Leaves on short pedicels, 2 inches long, green above, and yellowish beneath. Pedicels villous. Antlers and stigma bearded. Corollas yellowish.

**Tufted-leaved Siphocampylus.** Shrub 2 to 3 feet.

18 S. \* Cavanillesia; leaves ovate-lanceolate, biserated; flowers axillary, solitary, bibracteate, the whole forming a leafy raceme. \* S. Native of Peru, about the town of Buena Ventura. Lobélia cavanillesi, Cav. \* of Roem. et Schultes, \* p. 10. t. 514. Branches furrowed. Leaves on short pedicels, tomentose beneath: lower ones 3 inches long and 1½ broad. Pedicels bibracteate, thickened at the base and apex. Corolla of a yellowish scarlet colour, cleft a very little way on the back, glabrous.

**Cavanilles's Siphocampylus.** Shrub 3 feet.

19 S. \* besleroides; leaves oblong-elliptic, rounded at the apex, denticulated, hairy on both surfaces; flowers axillary, bibracteate, shorter than the leaves; segments of calyx 4 times shorter than the tube of the corolla. \* S. Native of the Andes, about Popayan. Lobélia besleroides, H. B. et Kunth, nov. gen. amer. 3. p. 306. Habit of a species of **Besleria.** Branches clothed with viscid hairs. Leaves rather hairy on both surfaces. Pedicels villous, bracteate. Calyx and corolla hairy outside, the latter white. Two lower antlers bearded.

**Besleria-like Siphocampylus.** Shrub 2 to 3 feet.

20 S. \* spectabilis; leaves oblong, acute, obtuse at the base, minutely denticulated, glabrous; flowers axillary, pedicellate, shorter than the leaves; corolla glabrous, 5 times longer than the calyx. \* S. Native of the province of New Andalusia, on Mount Cocollar, in shady humid places. Lobélia spectabilis, Willd. \* of Roem. et Schultes, \* t. 57. H. B. et Kunth, nov. gen. amer. 3. p. 306. Branches glabrous, 3½ inches long. Pedicels bibracteate at the base. Calyx glabrous, with somewhat denticulate hairy segments. Corollas scarlet. Antlers bearded.

**Showy Siphocampylus.** Shrub 2 feet.

21 S. \* surinamensis; leaves oblong-lanceolate, acute, obtuse at the base, remotely denticulated, glabrous; flowers pedicellate, axillary, shorter than the leaves; corolla glabrous, with the tube 3 times longer than the segments of the calyx. \* S. Native of Surinam, New Granada, and Brazil. Lobélia surinamensis, Lin. \* of Roem. et Schultes, \* p. 3. p. 306. Branches angular, downy. Leaves petiolate. Segments of corolla undulate. Corolla scarlet. Two lower antlers bearded.

**Long-pedicelled Siphocampylus.** Shrub 2 to 3 feet.


**West's Siphocampylus.** Shrub 2 to 3 feet.

24 S. \* grandis; leaves oblong, acute, crenately serrate, glabrous; umbels terminal, bibracteate; corollas hairy; segments of the calyx 10 times shorter than the tube of the corolla. \* S. Native of New Granada, near Santa Fe de Bogota. Lobélia grandis, Mutis in Lin. \* of Roem. et Schultes, \* p. 3. p. 307. Branches glabrous. Leaves 5 inches long and 2 broad. Flowers pedicellate, red, hairy outside as well as the calyx. Pedicels bibracteate at the base; bibracteate, hairy. Two upper segments of the corolla falcate. Antlers hairy; two lower ones bearded.

**Grand Siphocampylus.** Shrub.
about equal in length to the tube of the corolla. \( S. \) Native along with the preceding species. Lobélia glabrātā, H. B. et Kunth, nov. gen. amer. 3. p. 307. t. 270. Branches glabrous. Leaves 3-4 inches long, glabrous, pale green, petiolate. Pedicels bractless. Calyx and corolla glabrous; the latter greenish. Segments of corolla falcate. Filaments downy; anthers glabrous. Genitals exerted.

_Glabrous_ Siphocampylus. Shrub.

26 S. _Mutisia_‘anus’; leaves oblong, short-acuminate, narrowed and acute at the base, remotely and bluntly toothed, glabrous, except the nerve and veins beneath, which are hairy; flowers axillary, pedicellate, shorter than the leaves; corollas glabrous, much longer than the calycine segments. \( S. \) Native of New Granada, on frigid mountains. Lobélia Mutisiana, H. B. et Kunth. nov. gen. amer. 3. p. 308. Branches rather hispid. Leaves 6-7 inches long. Petioles hairy. Pedicels bractless. Segments of calyx smooth, irregularly crenated. Corolla greenish, with falcate segments. Column of stamens glabrous; two lower anthers bearded.

_Mutis’s_ Siphocampylus. Shrub.

27 S. _volubilis_; stem twining; leaves ovate, acuminate, cordate, sharply toothed, glabrous above, and clothed with fine down beneath; flowers axillary, pedicellate; corolla hairy; segments of calyx 5-6 times shorter than the tube of the corolla. \( S. \) Native on the shady banks of the Oronico. Lobélia volubilis, H. B. et Kunth, nov. gen. amer. 3. p. 309. L. cordata, Wild. rel. ex. Loxa et Schultes, syst. 5. p. 58. Branches glabrous. Leaves cordate at the base. Pedicels downy, bractless. Corollas scarlet. Genitals exserted, glabrous. Anthers bearded (f. 120.).

_Twining_ Siphocampylus. Shrub twining.

28 S. _Berteri_‘a’; leaves remote, on long petioles, ovate-oblong, acuminate, crenately suberéneted, membranous, quite glabrous; pedicels solitary, axillary, loose; stem scendant. \( S. \) Native of Guadaloupe. L. scandens, Bertero. L. Berteriāna, Spreng. syst. 1. p. 712.

_Bertero’s_ Siphocampylus. Shrub cl.

29 S. _sca’dens_; stem scendant; leaves oblong, obtuse, quite entire, rather fleshy, with revolute edges, glabrous; racemes terminal; flowers reflexed; corollas glabrous; calycine segments linear, slightly denticulated. 5-6 times shorter than the tube of the corolla. \( S. \) Native of Peru, in cold places between Paramo de Saraguru and the city of Loxa. Lobélia scandens, H. B. et Kunth, nov. gen. amer. 3. p. 309. Lobélia obusiifolia, Wild., ex. Loxa et Schultes, syst. 5. p. 57. Branches glabrous. Pedicels furnished with one bractea at the base. Calyx glabrous. Corolla scarlet, with falcate segments. Column of stamens glabrous. Two inferior anthers bearded. Stigma girded by a pilose ring.

_Climbing_ Siphocampylus. Shrub cl.

30 S. _duplsera_‘tus_ (Pohl. pl. bras. 2. p. 114. t. 177.) leaves oblong or cordate at the base, twice serrated, petiolate; peduncles longer or shorter than the leaves; genicula exerted. \( S. \) Native of Brazil. Lobélia triphyllassa, Presl, symb. bot. 4. p. 62. t. 4. Corollas red or scarlet.

_Doubly-serrate_ Siphocampylus. Shrub 2 to 3 feet.

31 S. _andrópō_‘on’; leaves ovate, glabrous, hardly denticulated, soft; flowers axillary, solitary, pedicellate; corolla glabrous, curved. \( S. \) Native of the province of Quito, on Mount St. Antonio, in shady woods. Lobélia Andröpōgon, Cav. &c. S. p. 6. p. 10. t. 515. Stem glabrous, furrowed. Leaves 3 inches long, petiolate. Pedicels shorter than the leaves, villous at the base, bracteate. Corolla scarlet, having the lower lip rounded, with 3 small acute teeth. Anthers bearded.

_Bearded-anthered_ Siphocampylus. Shrub 5 to 6 feet.

32 S. _circifolius_; leaves linear-lanceolate, toothed, glabrous; teeth subulate, distant; raceme terminal, leafy. \( S. \) Native of the Antilles and St. Vincent. Lobélia circifolia, Lam. dict. 3. p. 584. no. 12. - Plum. spec. vol. 5. t. 116. Stem straight, simple, naked at the base, glabrous. Corolla curved, green or yellowish green.

_Circum-leaved_ Siphocampylus. Shrub 1 1/2 foot.

33 S. _verticillata_ (Cham. in. Linn. 7. p. 202.) leaves 6-8 in a whorl, almost sessile, narrow-oblong or linear-oblong, sharply and finely serrated, pale beneath; pedicels axillary, verticillate, shorter than the leaves, but the flowers exceed the leaves; calycine segments acute, more than 6 times shorter than the corolla; anthers glabrous on the back, and bearded in front; stem filled with medulla, erect, simple, densely leafy; root oblique. \( S. \) Native of the south of Brazil. Stem of stem and ribs of leaves rather hairy, and the peduncles, calyces, and corollas downy. Corollas red, 2 inches long, curved before expansion.

_Whorled-leaved_ Siphocampylus. Shrub 3 to 6 feet.

34 S. _betulefolius_ (Cham. in. Linn. 7. p. 204.) leaves scattered, petiolate, cordately triangular or ovate, acuminate, somewhat doubly and acutely serrated, nerved, and veined; pedicels axillary, solitary, exceeding the leaves; calycine segments narrow, acute, serrated, more than 6 times shorter than the corolla; anthers exerted, glabrous on the back, and bearded in front; stem flexuous, branched, terete, glabrous. \( S. \) Native of Brazil. Nerves of leaves and pediades downy. Corollas red, long. Very like _S. scandens_.

_Birch-leaved_ Siphocampylus. Shrub 3 feet.

35 S. _convolvolacea_ (Cham. in. Linn. 7. p. 205.) shrubby, climbing, and twining, glabrous; branches terete, slender; leaves petiolar, narrow, ovate-lanceolate, acuminate, with reflexed obsoletely denticulated edges; pedicels axillary, solitary, much longer than the leaves; ovarium oblong; teeth of calyx small; corolla long; anthers a little exserted, naked on the back. \( S. \) Native of Brazil. Corolla red, about 2 inches long. Leaves 3 inches long. Very like _S. scandens_ and _S. volubilis_.

_Conevolvelous-like_ Siphocampylus. Shrub cl.

36 S. _imbricata_ (Cham. in. Linn. 7. p. 206.) leaves imbricated, almost sessile, ovate, cordate, hardly acute, serrulated, with rather reflexed edges, scabrous from hairs above, shining, flat; paler beneath, and more hairy, and reticulately veined; pedicels axillary, shorter than the leaves, and are as well as the calyxes hairy; calycine segments linear, acute, 4 times shorter than the corolla; corollas downy, exceeding the leaves; anthers exerted, naked on the back; stem with many prominent cicatrises, occasioned by the falling of the leaves, clothed at bottom with brown stiff hairs, and densely leafy at the top. \( S. \) Native of Brazil. Leaves 6 in a whorl, by threes. Corolla red.

_Imbricated-leaved_ Siphocampylus. Shrub.

37 S. _lycoides_ (Cham. in. Linn. 7. p. 207.) erect, glabrous; leaves sessile, erect, narrow-lanceolate, acute, remotely and bluntly serrulate; lower ones somewhat verticillate, by threes, alternate; racemes leafy, terminal; floral leaves 6 in a whorl, having the pedicells by threes, verticillate; pedicels erect, a little shorter than the leaves; segments of the calyx ovate,
LOBELIACEÆ. VII. SIPHOCAMPYLLUS. VIII. LOBELIA.

long-acuminated, 6 times shorter than the corolla; anthers a little exserted, glabrous. \( \gamma. \) S. Native of Brazil. Corolla red.

Lycium-like Siphocampylus. Shrub 3 feet.

38 S. depe'dens; leaves coriaceous, ovate-lanceolate, somewhat cordate at the base, acuminate, finely and spinosely denticulated, tomentose beneath, glabrous above; branches and inflorescence downy or tomentose; pedicels from the axils of the upper leaves, and longer than them; column much exserted; calyce lobes linear-subulate. \( \xi. \) S. Native of Peru. Lobélia de'pendens, Ruiz et Pav. in herb. Lamb. Flowers racemose, at the tops of the branches. Plant scarce.

Dependent-branched Siphocampylus. Shrub cl.

39 S. rosamarinifolius; erect; leaves linear-lanceolate, entire, with revolute margins, tomentose beneath, and glabrous above; pedicels axillary, about the length of the leaves; column of stamens exserted; calyx with a spherical tube, and long linear segments. \( \xi. \) or \( \gamma. \) S. Native of Peru. Lobélia purpuræa, Ruiz et Pav. in herb. Lamb. Corollas red. Lower anthers bearded at top. Leaves dense, like those of some species of willow.

Rosemary-leaved Siphocampylus. Pl. 2 to 3 feet.

40 S. macropýllus; leaves broad, obovate, acuminate, glabrous, slightly denticulated, tapering much to the base; flowers almost forming a terminal corymb, much shorter than the leaves; calyx with a hemispherical tube and ovate-lanceolate segments; column of stamens exserted; the lower anther bearded at top. \( \gamma. \) S. Native of Peru. Leaves a foot long. Pedicels crowded. Corollas red. (v. s. in herb. Lamb.)

Large-leaved Siphocampylus. Pl. 2 to 3 feet?

41 S. lacinia'ta; leaves deeply jagged, acuminate; lobes of corolla falcate; column of stamens downy; anthers glabrous, except the two lower ones, which are bearded at the apex; calyx spherical. \( \gamma. \) II. Native of Peru. Lobélia biserráta, Ruiz et Pav. in herb. Lamb. Corollas red or scarlet.

Jagged-leaved Siphocampylus. Shrub.

42 S. fu'scus; clothed with rusty tomentum in every part; calyx spherical, with reflexed denticulated lobes; leaves elliptic-lanceolate, denticulated; peduncles axillary, 1-flowered; corolla clothed with rusty wool; two lower anthers bearded. \( \gamma. \) S. Native of Peru. Apparently a climbing shrub. (v. s. in herb. Lamb.)

Brown Siphocampylus. Shrub cl.

Cult. The species all bear large, showy, scarlet, or red flowers, and are therefore worth cultivating in every collection of stoute plants. They are of easy culture. The soil best suited to them is a mixture of loam, sand, and peat; and cuttings of them strike readily in the same kind of soil under a hand-glass in heat.

VIII. LOBELIA (in honour of Matthew Lobel, author of various works, and particularly that called Icones Plantarum; he was born at Lisle in 1538, became physician and botanist to James I., and died in London in 1616). Pohl, pl. bras. 2. p. 99.—Lobélia species, Lin. and other authors.

Lin. syst. Pentändría, Monogynía. Calyx adnate to the ovary; limb 5-parted (f. 121. a.). Corolla irregular, tubular; tube cleft on the upper side, thickened or ventricose at the base; limb 5-parted, bilabiate; the 2 segments of the upper lip linear-lanceolate (f. 121. f.); lower lip trifid and pendulous, with lanceolate or roundish segments (f. 121. g.). Filaments combined above (f. 121. e.). Anthers cohering (f. 121. c.); bearded; the 2 lower ones usually bearded, and sometimes all. Capsule oval, 2-celled, 2-valved, many-seeded, dehiscing at the apex.—Erect or procumbent herbs. Leaves alternate, usually sessile. Flowers on short pedicels, usually disposed in terminal leafy spikes or racemes, rarely solitary and axillary, blue, red, or white, rarely yellow.

§ 1. Species natives of America.

* Corollas blue.

1 L. campúrum (Pohl, bras. 2. p. 100. t. 165.) leaves linear, acute, remotely toothed, ciliated on the margins, glabrous, rather decurrent; flowers spicate, rather remote on short pedicels; bracteas oblong, acuminate, rarely toothed, pilose; calyx pilose, a little shorter than the tube of the corolla. (o. H. Native of Brazil, in the province of Minas Geraes, in dry fields about Villa de Barbacena. Anthers all bearded. In the plant collected by Sello the lower leaves are ovate, and the upper ones lanceolate. Stem filiform, simple, pilose. Corollas blue.

Field Lobelia. Pl. 1 foot.

2 L. exal'ta (Schott in Pohl, pl. bras. 2. p. 101. t. 166.) leaves sessile, lanceolate, acumimated, rather attenuated at the base, denticulated, quite glabrous; flowers racemose, coarctate, pedicleallate; bracteas lanceolate, acuminate, rather hairy; calyx pilose, exceeding the tube of the corolla in length. (f. S. Native of Brazil, in marshy places in the province of Rio Janeiro, at Fazenda Malheas Ramos, as well as of the province of Minas Geraes. Stem fustular, furrowed, quite simple, glabrous, of a yellowish green colour. Bracteas ciliated. Corollas blue.

Exalted Lobelia. Pl. 5 feet.

3 L. thapsóides (Schott, ex Pohl, bras. 2. p. 102. t. 167) leaves sessile, lanceolate, attenuated at the base, very long, denticulated, ciliated, rather pilose; flowers racemose, coarctate, on short pedicels; calyce segments lanceolate, acumimated, pilose, shorter than the tube of the corolla. (f. S. Native of Brazil, about Rio Janeiro; and of the province of Guayz. Stem tough, filled, simple, rather pilose, of a greenish brown colour. Bracteas ciliated. Flowers dense blue.

Thapsus-like Lobelia. Pl. 6 feet.

4 L. paucifílora (H. B. et Kunth, nov. gen. amer. 3. p. 314.) stem herbaceous, erect, simple; leaves sessile: radical ones lanceolate: cauline ones linear, remotely denticulated, glabrous; racemes terminal, few-flowered, on long peduncles; flowers on short pedicels; calyce segments hairy, as well as the corolla, one-half shorter than the tube of the corolla. (f. S. Native of Brazil, in the province of Minas Geraes, in dry grassy places about Villa Barbacena; and of Mexico, near Valladolid de Mechoacan. L. commutáta, Willd. rel. ex Rem. et Schultes, syst. 5. p. 73. L. simplex, Willd. herb. Corollas blue. Stem glabrous, striated. Bracteas linear, hairy, longer than the pedicels.


5 L. raúnculóides (H. B. et Kunth, nov. gen. 3. p. 312.) leaves linear-lanceolate, acute, denticulated, glabrous, sessile; racemes terminal, loose-flowered; calyce segments equal in length to the tube of corolla; stems branched, procumbent. (f. S. Native near the town of Mexico. L. dracunculóides, Willd. rel. ex Rem. et Schultes, syst. 5. p. 56.?) Stem hairy at bottom. Flowers remote, pedicleallate. Bracteas linear, about the length of the pedicels. Corolla blue, glabrous. Leaves 1/2 inch long. Two lower anthers bearded.

Rampion-like Lobelia. Pl. procumbent.

6 L. collínæ (H. B. et Kunth, nov. gen. amer. 3. p. 312.) leaves lanceolate-linear, acute, denticulated, glabrous, sessile; racemes terminal, ascending: segments of the calyx one-half shorter than the tube of the corolla; stems procumbent; branches ascending, glabrous. (f. S. Native of Peru, on dry
hills between Malacatis and Gonzanama, at the altitude of about 3000 feet. L. linifolia, Willd. rel. ex Rem. et Schultes, syst. 5. p. 67. Leaves 1 to 1½ inch long. Pedicels recurved, about equal in length to the bracteas, which are linear. Flowers of a violaceous blue colour. Two lower anthers bearded.

**Hill Lobelia.** Pl. procumbent.

7 **L. fastigiata** (H. B. et Knnth, nov. gen. amer. 3. p. 313.) leaves lanceolate, remotely denticulated, glabrous, almost sessile; racemes terminal, elongated; calycine segments glabrous, about equal in length to the tube of the corolla; stem herbaceous, erect, with fastigiate branches. **Σ.** Native of Quito, near Popayan and Chillo, at the altitude of about 3000 feet. Lobélia tenuifolia, Willd. rel. ex Rem. et Schultes, syst. 5. p. 56. Stems and branches angular, glabrous. Leaves 12-15 lines long. Bracteas linear, oblong, denticulated, shorter than the pedicels. Corolla violaceous. Two lower anthers bearded.

**Fastigate-branched Lobelia.** Pl. 9

8 **L. m'ollis** (Graham. in edinb. phil. journ. Decemb. 1829.) stem erect, branched, downy; leaves petiolate, cordately ovate, acute, downy above, and along the veins beneath, mucronately and doubly serrated; superior leaves lanceolate; racemes terminal, elongated; pedicels loose; segments of the lower lip of the calyx subulate, shorter than the corolla. **O. F.** Native of Dominica, where it was collected by Dr. Krauss. Leaves 8 lines long and 6 broad. Calycine segment equal in length to the tube of the corolla, which is purplish, with the tube cleft along the upper side. Anthers purplish, having 2 short white awns projecting from their lower edge. Stigma almost simple, bearded. Perhaps a distinct genus.


9 **L. rep'estris** (H. B. et Kunth, nov. gen. amer. 3. p. 313.) leaves sessile, hairy or downy, toothed; lower ones oblong or ovate-oblong, obtuse; superior ones lanceolate, acute; racemes terminal; segments of the calyx hairy, about equal in length to the tube of the corolla; stem erect, branched a little. **Σ.** Native of the province of Popayan, on the declivities of the burning Mount Purace. Lobélia polygalæfolia, Willd. rel. ex Rem. et Schultes, syst. 5. p. 56. Stems rather angular, and are as well as the branches downy. Bracteas linear, lanceolate, twice the length of the pedicels, which are distant. Flowers violaceous. Anthers blue, 2 lower ones bearded.

**Rock Lobelia.** Pl. 1 foot.

10 **L. ten'tera** (H. B. et Kunth, nov. gen. amer. 3. p. 314.) leaves sessile, lanceolate-linear; lower ones lanceolate, remotely denticulated, glabrous; racemes terminal, few-flowered, on long peduncles; flowers on long pedicels; calycine segments glabrous, about equal in length to the tube of the corolla; stem herbaceous, erect, simple, glabrous. **Σ.** Native of the province of Quito, on hills near Puemba. Leaves 12-15 lines long. Flowers blue, remote, about the size of those of *L. aren*us. Filaments ciliated at the base. Two lower anthers bearded.

**Tender Lobelia.** Fl. July. Pl. ½ foot.

11 **L. xala'pesis** (H. B. et Kunth, nov. gen. amer. 3. p. 315.) leaves on long petioles, ovate-deltoid, irregularly crenated, hairy above, glabrous beneath; racemes terminal, pedunculate; calycine segments about equal in length to the tube of the corolla; stem erect, panically branched, angular, glabrous. **Σ.** Native of Mexico, near Xalapa and Macutlipac. Leaves nearly as broad as long. Bracteas linear, much shorter than the pedicels. Filaments ciliated at the base. Two lower anthers bearded.

**Xalapa Lobelia.** Pl. ½ foot.

12 **L. kältmi** (Linn. spec. 1518.) radical leaves spatulate, hairy: cauline ones linear, glabrous, sessile, denticulated or nearly entire; racemes loose, leafy; pedicels furnished with 2 bracteas at the apex, longer than the capsules; stem erect, slender, glabrous. **Σ.** Native of North America, in Canada, Carolina, and New York. Sims, bot. mag. 2238. Corollas beautiful blue, with the segments of the lower lip obovate, acute, marked by 2 white confluent spots in the centre. The variety of this which grows in Carolina has the radical leaves roundly spatulate; the stem more slender, and the flowers smaller.

**Kalm's Lobelia.** Fl. July, Aug. Clt. 1820. Pl. 1 to 1½ ft. 13 **L. nut'talli** (Rem. et Schultes, syst. 5. p. 39.) leaves oblong-linear, denticulated, obtuse, remotish; flowers loosely racemose, distinct; pedicels coloured, shorter than the flowers, bibracteate at the base; segments of the calyx obtuse; stem erect, minutely scabrous, branched. **Σ.** Native of North America, from New Jersey to Carolina, on the dry sandy edges of bogs. _L. gracilis_, Nutt. gen. amer. 2. p. 77. but not of R. Br. Pedicels and corollas blue; the lower lip marked by 2 acute white stripes, and 2 green dots, and other 2 towards the base of the tube. Very like _L. Kalmii_, and probably a variety of it.


14 **L. fen'estralis** (Cav. icon. 6. p. 8. t. 512, f. 2.) leaves lanceolate, acuminate, toothed, half-stem-clasping, glabrous, glaucous; spikes terminal, many-flowered; genitils shorter than the tube of the corolla. **O. H.** Native of Mexico, near the town of St. Bartolome. Stem simple, furrowed. Leaves 2 inches long and 2 lines broad. Flowers almost sessile, disposed in leafy spikes, small, blue, bibracteate at the base, about 2 lines long. Stigma villous. Tube of corolla about 2 lines long. Genitils one-half shorter than the corolla.


15 **L. cliffor'dia** (Lin. spec. p. 1320.) leaves on long petioles, ovate or roundish-ovate, rather cordate, bluntly and sinuately toothed, glabrous; racemes terminal, on long peduncles; calycine segments glabrous, about equal in length to the tube of the corolla; stem erect, nearly simple, glabrous. **O. H.** Native of North America, in humid places; and of Cuba, about the Havana; and of Mexico, near San Andres and Jalapa, in bushy places. Stem angular. Root perpendicular. Bracteas linear, much shorter than the pedicels, which are long and filiform. Corollas blue or violaceous.

**De Clifford's Lobelia.** Pl. ½ to 1 foot.

16 **L. spi'ca'ra** (Ruiz et Pav. in herb. Lamb.) glabrous; stem simple; leaves obvolutely lanceolate, obtuse, denticulated; upper ones lanceolate, sessile, denticulated; racemes simple; pedicels rising from the axils of the linear bracteas. **Σ.** Native of Peru. Flowers small, blue. Like _L. arenus_. Calyx tubular, with subulate segments.

**Spice-flowered Lobelia.** Pl. 1 foot.

17 **L. monte'cola** (H. B. et Kunth, nov. gen. amer. 3. p. 316.) leaves petiolate, ovate, obtuse, rather cordate, doubly serrated, hairy on both surfaces; racemes terminal, on long peduncles; segments of calyx glabrous, about equal in length to the tube of the corolla; stem erect, almost simple, rather angular, glabrous, or a little hairy. **O. H.** Native of New Granada, on the mountains between Fusagasuga and Pande. L. palmarius, Willd. rel. ex Rem. et Schultes, syst. 5. p. 56. Root perpendicular, branched. Bracteas linear, much shorter than the pedicels. Corollas blue, glabrous. Anthers puberulous at the apex, but beardless.

**Mountain Lobelia.** Pl. ½ foot.

18 **L. mic'a'stha** (H. B. et Kunth, nov. gen. amer. 3. p. 316.) leaves petiolate, ovate, acuminate, dentately serrated, nearly glabrous; racemes terminal, sessile; calycine segments glabrous, about equal in length to the tube of the corolla; stem erect, panically branched, angular, hairy. **O. H.** Native of the province of Quito, near Puembo. Lobélia ruđeráfi, vol. III.

24 L. colorata (Sweet fl. gard. n. s. t. 180.) glabrous; leaves lanceolate, acuminate, erosely toothed; raceme spicate, elongated, leafy; calycine segments linear-subulate. \( \gamma \) H. Received from North America, but probably a hybrid between \( L. syphilitica \) and \( L. cardinclus \). Corollas deep azure blue, crowded. Ovarium half inferior. This is probably the \( L. \) carleastes, Nutt. and L. crispa, Graham. ex Loud. hort. brit. p. 75.

Coloured Lobelia. Fl. Pl. 4 to 5 feet.

25 L. celestis (Nutt. ex Loud. hort. brit. p. 592.) this plant is in the gardens, but we are not aware of where it is described; it comes very near to \( L. syphilitica \), and may be a variety of that species. \( \gamma \) H. Native of North America. L. crispa, Graham. ex Loud. hort. brit. p. 75. Flowers of a beautiful blue, disposed in long dense terminal racemes.


26 L. uranocephala (Cham. in Linnaea. 7. p. 321.) stem erect, angular, fistular; leaves hairy, erect, linear, attenuated, acute, finely denticulated; pedicels disposed in a terminal leafy raceme, shorter than the floral leaves, which are densely imbricated, ovate, acute, and shorter than the others, of a blueish colour; segments of the calyx linear, attenuated, about equal in length to the middle of the corolla, which is clothed with fine glandular down; anthers bearded in front. \( \gamma \) S. Native of tropical Brazil. Leaves a foot long. Corolla cleft on the back, nearly 2 inches long, blue.

Blue-tufted Lobelia. Pl. 5 feet.

27 L. glandulosa (Walt. car. p. 218.) leaves lanceolate, glandularly serrated, rather fleshy, glabrous; flowers on short pedicels, racemose; segments of the calyx resolve, toothed; stem erect, branched, rather downy. \( \gamma \) H. Native of Carolina, by the sea side in marshes among grass. L. crassiiulosa, Michx. fl. bor. amer. 2. p. 152. Nutt. gen. amer. 2. p. 76. Pedicels furnished with 2 bracteas, which are terminated by a gland each. Corollas blue, having the disk of the lower lip bearded. Stigma beset with white hairs.

Glandular-leaved Lobelia. Pl. 1 to 2 feet.

28 L. pubérula (Michx. fl. bor. amer. 2. p. 152.) plant very simple, downy; leaves oblong, obtuse, re pandly serrated; flowers almost sessile, forming together a leafy elongated spike; calyx downy; calycine segments erect, lanceolate-subulate, entire, having the sinus a little reflexed; stamens included. \( \gamma \) H. Native from Virginia to Carolina, in mountain tracts. Pursh. fl. amer. sept. 2. p. 447. Bracteas serrulated. Flowers pale blue. Ovarium equal hispid. It differs from \( L. \) Claytoniana in the flowers being thrice the size, and of a more beautiful blue.

Var. \( \beta \), glabellula (Hook. bot. mag. t. 3292.) leaves hardly downy; calyx glabrous. \( \gamma \) H. Native of Louisiana, about Jackson Ville. Corolla bright purplish blue.


29 L. aména (Michx. fl. bor. amer. 2. p. 153.) plant quite glabrous; leaves broad-lanceolate, serrated; spikes secund, many-flowered; segments of the calyx entire; segments of the lower lip of the corolla ovate, acute. \( \gamma \) H. Native from Virginia to Carolina, on the mountains. Leaves usually glabrous, 6-8 inches long, and 1 inch broad. Corollas pale blue. Pursh. fl. sept. amer. 2. p. 443. Nutt. gen. amer. 2. p. 76. Juss. ann. miss. 18. p. 16. t. 1. no. 1.


30 L. gruina (Cav. icon. 6. p. 8. t. 511. f. 2.) leaves sessile,
LOBELIACEÆ. VIII. LOBELIA.

lanceolate-linear, toothed; stem naked at the top, therefore the raceme of flowers is naked and terminal; bracteas subulate. 2. S. Native of New Spain. Stem striated, glabrous. Leaves 2 inches long, glabrous. Corollas blue. Tube of corolla 3-4 lines long; segments of the upper lip narrower than those of the lower, and reflexed. Stigma villous. Filaments exerted, and resembling a stork's head. Very like L. ucens.

Stork's Lobelia. Pl. 1 foot.

31 L. nummularioides (Cham. in Linnae. 7. p. 209.) glabrous; leaves rather fleshy, ovate, coriaceous, rather reniform, obtuse, quite entire, or obliquely submarginally crenated, on short pedioles, and sessile; flowers axillary, on long pedicels; caly- cines segments a little shorter than the corolline tube; anthers glabrous on the back, all bearded; fruit glbose; stems prostrate, radicant, but ascending and floriferos at the apex. 2. S. Native of Brazil, within the tropics, in marshy places. Nearly allied to L. Zeylanica. Corolla blue or violaceous.

Moneywort-like Lobelia. Pl. prostrate and creeping.

32 L. reniformis (Cham. in Linnae. 7. p. 210.) herbaceous, hairy; stems rather capillary, branched, creeping, rooting; leaves ovate, short pedioles, orbicularly reniform, oblong, membranous, nervad, and reticulately veined, pale green above, and glabescence beneath; pedicels terminal and axillary, elongated; corolla glabrous outside, villous inside, with a broad tube, and triangular segments; anthers glabrous on the back; calyccine teeth ovate, acute, much shorter than the tube of the corolla. 2. S. Native of Brazil. Plant tufted, creeping. Leaves hairy, ciliated on the edges. Flowers blue.

Kidney-shaped-leaved Lobelia. Pl. creeping.

33 L. aquatica (Cham. in Linnae. 7. p. 211.) a glabrous aquatic herb; stem erect or floating, flattened in the dry state; leaves scattered, erect, sessile, narrow-lanceolate, acute, obso- letely serrated, 1-nerved; pedicels axillary at the bases of the stem, capillary, erect, twice the length of the leaves; ovarium semi-elliptic, crowned by the calyccine segments, which are a little shorter than the tube of the corolla; anthers all bearded, glabrous on the back, exceeding the corolline tube, but shorter than its segments. 2. S. Native of Brazil, on the banks of rivers, or in marshes among grasses. Flowers blue. Leaves half an inch long.

Aquatic Lobelia. Pl. ½ to ¾ foot.

34 L. sessilifolia (Lamb. in Loc. trans. 10. p. 260. t. 6.) leaves sessile, oblong-lanceolate, serrulated, glabrous; pedicels axillary, shorter than the leaves; stem erect, leafy, glabrous, very simple. 2. H. Native of Kamschatka. L. Camtschatica, Pall. miss. p. 22. Habit of a Euphorbia. Leaves of an obscure green. Flowers blue?

Sessile-leaved Lobelia. Pl. 2 to 3 feet.

35 L. umbellata (Vest, ex Rœm. et Schultes, syst. 5. p. 58.) glabrous; leaves sessile, linear, toothed, dilated and trifid at the apex; flowers terminal, umbellate; stem erect. 2. ? S. Native country unknown. Stem angular. Leaves like those of Chrysanthemum leucanthemum. Involution umbel short. Corollas blue, nearly an inch long, with the segments of the upper lip reflexed, and of the lower one oblong. Stamens a little shorter than the tube of the corolla. Anthers bearded at the apex.

Umbellate-flowered Lobelia. Pl. 1 foot.

** Corollas red, purple or scarlet, rarely yellowish.

36 L. graminéa (Lam. dict. 3. p. 583.) glabrous; leaves linear, ensiform, acute; racemes long, simple; stem erect, simple; bracteas linear, acute, shorter than the flowers.—Native of Peru. Leaves 5 inches long, and 2-3 lines broad. Flowers scarlet, on short pedioles, form of those of L. cardinalis. Filaments and stamens combined.

Grass-y-leaved Lobelia. Pl. 2 feet.

37 L. pulvérulenta (Pers. ench. 2. p. 212.) leaves ovate, on very short petioles, glabrous above and wrinkled, but clothed with white tomentum beneath; corollas campanulate, powdery; stem shrubby. 2. S. Native of South America, on the road from Guaranda to Mount Chimborazo. Stem branched, tormentose. Leaves obtuse, with subrevolute edges, 3 inches long. Pedicels longer than the leaves, altogether forming a leafy raceme. Corollas white from powdery tomentum outside, and reddish inside, less than an inch long, with equal oblong acute segments. Perhaps a species of Clermontia.

Powdery Lobelia. Pl. 6 to 8 feet.

38 L. cordifera (Cav. icon. 6. p. 14. t. 523.) leaves ovate, acute, half-stem-clasping, villous, denticulated; pedicels villous, axillary, solitary; stem villous, furrowed. 2. F. Native of Chili. Leaves 3 inches long. Calyx villous. Corolla scarlet, 1½ inch long, with the segments of the upper lip linear, elongated, of the lower lip ovate, acute. Genitals glabrous.

Heart-bearing Lobelia. Pl. 3 feet.

39 L. decurrens (Cav. icon. 6. p. 13. t. 521.) leaves ovate-lanceolate, biserrated, decurrent, glabrous, approximate; flowers solitary, axillary, short, either forming a long leafy raceme; calyx villous, with the segments deeply serrated; tube of corolla cleft even to the base. 2. F. Native of Chili, on the banks of the river Claro. Sweet flag, fl. n. s. 86. Stem glabrous. Leaves 2 inches long and an inch broad, with 2 small teeth between each large one. Corolla purplish-violet, 1½ inch long; upper lip of 2 linear segments, which are villous at the apex, of the lower acute, and are as well as the anthers pilose.


40 L. conglobrata (Lam. dict. 3. p. 585.) leaves oblong-cuneiform, denticulated, shining; racemes globose, terminal; segments of calyx fringed; stem simple, filled with medula. 2. S. Native of Marínico and St. Domingo. Lin. spec. 4. t. 117. Stem thick, naked at the base. Leaves a foot and more long, and 3 inches broad, exceeding the corymb of flowers. Flowers very numerous, disposed in a short raceme. Bracteas lanceolate, denticulated, shorter than the flowers. Corollas shorter than the calyx, scarlet, but in the larger variety greenish-red. Perhaps a species of Tupa.

Conglobrate-racemed Lobelia. Pl. 1 foot.

41 L. Cavaniélliana (Rœm. et Schultes, syst. 5. p. 43.) glabrous; leaves ovate-lanceolate, acuminate, serrated, sessile; pedicels solitary, axillary, longer than the leaves, the whole forming a leafy raceme; corollas downy. 2. S. Native of New Spain, near Acambaro. L. persicifolia, Cav. icon. 6. p. 12. t. 518. Stem herbaceous, striated, branched. Serrations of leaves setaceous. Calyx globose, Corolla red; with the tube nearly an inch long. Probably a species of Tupa. Anthers bearded with white hairs.


42 L. persicifolia (Lam. dict. 3. p. 584.) leaves narrow-lanceolate, serrated; pedicels axillary, solitary, shorter than the leaves, the whole forming a leafy raceme. 2. S. Native of Guadaloupe, in marshes. Stem fustulose. Leaves numerous. Corolla purplish, glabrous, a little curved, ½ inch long. Perhaps a species of Siphocamys.


43 L. Kraussii (Graham, in edinb. phil. journ. March, 1830. bot. mag. 3012.) leaves sessile, lanceolate, decurrent, sharply serrated, glabrous; pedicels axillary, solitary, longer than the leaves, the whole forming a leafy terminal raceme; calyccine segments subulate, a little toothed, spreading, and are as well as the corolla glabrous; stem herbaceous, glabrous, erect, branched. 2. S. Native of Dominica, where it was collected by Dr. Krauss. Leaves 4½ inches long. Corolla 1 inch long, red, 4 x 2.
cleft along the back to the base; segments linear-subsulate; the upper ones the broadest. Filaments white, downy; anthers lead-colour, terminated by a dense white beard. Nearly allied to L. persicifolia.


44 L. racemosa (Hook. bot. mag. 2137.) stem suffruticose, erect; leaves lanceolate, spinosely serrated; racemes terminal; pedicels exceeding the flowers, at length deflexed; calyce segments awl-shaped, sharply serrated. 2. 8. Native of the Island of St. Christopher; and of Brazil, at Rio Janeiro. Leaves 9 inches long. Branches terete. Pedicels bibracteate. Bracteas serrated. Corolla plaited, cleft on the back, having the lower lip 3-lobed, and the segments of the upper lip narrow, all recoiled backwards, greenish. Anthers lead-coloured, as well as the stigma. This is a true species of Tupa.


46 L. laciniata (Lam. dict. 3. p. 584.) leaves lanceolate, pinnatifidly toothed: the segments again toothed; coryms terminal, small, sessile. 2. 8. Native of St. Domingo. Stem glabrous, a little longer than 2 inches long. Corolla greenish red, glabrous, an inch long.

Jagged-leaved Lobelia. Pl. 1 foot.


Som-thistle-leaved Lobelia. Pl. 2 feet.

48 L. stricta (Swartz, prod. 117. fl. ind. occ. p. 1952.) lower leaves elliptic, spiny-toothed, glabrous, tufted; stem simple, stiff; flowers spicate. 2. 8. Native of Guadaloupe. Lam. dict. 3. p. 584. no. 15. Radical leaves larger than the rest, attenuated at the base, 3 inches long, and an inch broad. Pedicels short, the whole forming a terminal leafy raceme. Corollas purplish.

Straight Lobelia. Shrub 2 to 3 feet.


50 L. assur'gens (Linn. amen. acad. 5. p. 408.) leaves broad, lanceolate, serrated or denticulate and decurrent at the base; racemes simple, terminal; segments of the calyx serrated; capsule angular. 2. 8. Native of Jamaica, on the mountains, particularly on the edges of streams. Andr. bot. rep. 553. Leaves a foot long, glaucescent. Stem reddish, almost simple, glabrous. Flowers crowded, large, downy, purple. The column of anthers has 3 blue grooves. Probably a species of Tupa.

Assurgens Lobelia. Fl. June, Oct. Cit. 1787. Pl. 3 to 4 ft. 51 L. foliosa (Willd. rel. ex Rem. et Schultes, syst. 5. p. 56. H. B. et Kunth, nov. gen. amer. 3. p. 310.) leaves sessile, decurrent, lanceolate, doubly toothed, glabrous; flowers axillary, pedicellate, the whole forming a leafy raceme; corollas hairy; stem erect, simple, glabrous. 2. 8. Native of the kingdom of Quito, in humid places near Guancabamba. Leaves crowded on the stem, 3 inches long. Pedicels hairy. Segments of the calyx furnished at the base with remote subulate teeth, about equal in length to the tube of the corolla. Corolla pale purple. Two lower anthers bearded. Allied to L. decurrens, Cav. and L. cardinalis.

Leafy Lobelia. Pl. 2 to 3 feet.

52 L. laxiflora (H. B. et Kunth, nov. gen. amer. 3. p. 311.) leaves almost sessile, oblong, acuminated, serrulatd, glabrous; racemes terminal, secund; flowers on long pedicels; corollas hairy; stem erect, simple, angular, glabrous. 2. 8. Native of Mexico, between Quauiniquila and Acapulco. L. fissa, Willd. rel. ex Rem. et Schultes, syst. 5. p. 57. Leaves 23 inches long. Rachis of raceme hairy. Calyx hairy. Corolla pale purple. Allied to L. cardinalis.

Loose-flowered Lobelia. Pl. 2 to 3 feet.

53 L. nigrobulbata (H. B. et Kunth, nov. gen. amer. 3. p. 311.) leaves short, sessile, oblong-lanceolate, acutish, sharply serrulate, stiltish, glabrous above, but ruged and hairy beneath; flowers axillary, on long pedicels; corollas hairy. 2. 8. Native of New Spain. Stems hairy above. Leaves 2 inches long. Flowers and fruit like those of the preceding species, to which it is very nearly allied.

Stiffish Lobelia. Pl. 2 to 3 feet.

54 L. fulgens (Willd. hort. berol. 2. p. 83. t. 85.) leaves lanceolate, denticulate, with revolute margins, downy as well as the stems; racemes terminal, leafy, somewhat secund. 2. 8. Native of Mexico. Andr. bot. rep. 659. Bonpl. malm. p. 19. t. 7. Stem reddish. Leaves 4-6 inches long. Corollas about an inch long, downy outside, of a splendid scarlet colour.


55 L. cardinalis (Lin. spec. 1820.) leaves oblong-lanceolate, cartilaginous denticulate, glabrous as well as the stems; racemes terminal, unilateral, leafy. 2. 8. Native of Virginia and Carolina; and of Mexico, near Jalapa. Pursh, fl. amer. sept. 2. p. 448. Curt. bot. mag. 320.—Körn. del. 2. t. f. 2. Repündium cardinalis, Mill. dict. no. 1.—Mor. hist. 2. p. 466. sect. 5. t. 5. f. 54.—Hern. mex. p. 879. t. 880. Leaves purplish beneath, 3 inches long, and 1/2 broad. Flowers scarlet. It differs from L. fulgens in being glabrous, and in the segments of the lower lip of the flower being obtuse, not lanceolate, and acute.


56 L. splendens (Willd. hort. berol. 2. t. 86.) leaves lanceolate, denticulate, with flat margins, quite glabrous as well as the stems; racemes terminal, somewhat secund. 2. 8. Native of Mexico. Ker. bot. reg. 60. Stem purplish. Pedicels compressed, purplish. Corolla scarlet, glabrous, very like those of the two last species.


57 L. speciosa (Hort. Lindl. bot. rep. 1445. Sweert. fl. gard. n. s. 174.) This is a hybrid between L. sphyilitica and L. cardinalis, splendens or fulgens. The flowers are purple.


§ 2. Species natives of the East Indies and other parts of Asia.

59. L. Heyneana (Roxb. et Schultes, syst. p. 5. p. 56.) stem filiform, erect, winged; leaves subtriumbroid, serrated, decurrent, setosely ciliated at the base; peduncles axillary, solitary, length of leaves; calyces glabrous.—Native of the East Indies. L. decurrens, Roth, nov. p. spec. mss. The stem is winged from the leaves being decurrent.

Heyne's Lobelia. Pl. ½ to 1 foot? 

60. L. Zeylanica (Lin. spec. 1322.) stems prostrate and creeping, downy; leaves on short petiolo, ovate, somewhat cordate, serrated, acute: lower ones obtuse; peduncles solitary, 1-flowered, axillary, equal in length to the leaves, villous; capsules rather villous. Z. S. Native of China and the East Indies, in fields. L. nummularifolium, Lam. dict. 5. p. 563.?—Seb. thes. 1. p. 37. t. 22. f. 12. Var. B. Hirta, Lin. spec. 555. Plant sparing. Leaves like those of Feronia chamédrysis, D. coriaceus, beset with a few pellucal hairs; lower ones crenated; upper ones serrated. Pedunclules downy. Flowers purple. This is a very pretty plant when in blossom. It differs from L. trigona, Roxb., by its petioled more rounded leaves, terete stems, and its pubescence.


61. L. Chenopodifolià (Wall. cat. no. 1312.) stem branching at the base; lower leaves roundish-ovate, obtuse, broadly crenated; upper ones ovate-lanceolate or deltoid, acuminate, cossetly toothed; peduncles elongated, terminal, bearing loose racemes of flowers at the apex; calycine segments subulate. O. H. Native of the East Indies? Flowers small, probably pale blue.

Goose-foot-leaved Lobelia. Pl. 1 foot. 

62. L. Affinis (Wall. cat. no. 1311.) plant downy, creeping at the base; leaves ovate, petiolate, membranous, cuneated at the base, slightly dentilicated; peduncles axillary, 1-flowered; calyx hairy, with linear segments; stems angular. Z. S. Native of the East Indies, in Silhet and Goalpara. Flowers blue. Stems creeping at the base. This species is very like L. Zeylanica and L. trigona. 

Allied Lobelia. Pl. § foot. 

63. L. Nummularia (Lam. dict. 3. p. 589.) stems creeping, filiform; leaves roundish-cordate, crenated; peduncles 1-flowered, axillary, a little longer than the leaves. Z. S. Native of Java. Habit of Sibharpia. Stem rather villous. Leaves small, rather villous beneath, unequall. Petioles 2-3 lines long. Corolla 4-5 lines long, longer than the stamens. 

Money-nort-leaved Lobelia. Pl. creeping. 

64. L. ? Fu'mila (Burm. prod. 1. t. 60. f. 3.) glabrous; stems procumbent; leaves opposite, ovate, quite entire; panicles terminal. Z. S. Native of Coromandel. Leaves petiolate. Flowers small. 

Dwarf Lobelia. Pl. procumbent. 

65. L. Trialiata (Ham. mss. ex D. Don, prod. fl. nep. p. 157.) leaves roundish-ovate, serrated, glabrous; petioles dilated, decurrent at the base; pedicels solitary, axillary, longer than the leaves; flowers somewhat racemose; segments of the calyx filiform; stem ascending, triguetrous, branched, winged, glabrous. Z. F. Native of Nipaul. L. micrantha, Hook. exot. fl. t. 44. Stem hardly a hand high, rooting at the base. Petals longer than the leaves. Corollas small, red. Very like L. gratioloides, Roxb., but in that species the leaves are sessile and corollate.


66. L. Trigona (Roxb. fl. ind. 2. p. 111.) glabrous; leaves subsessile, cordate, coarsely serrated; pedicels axillary, bipectate, longer than the leaves; stems creeping at the base, erect parts 3-sided. O. H. Native of the East Indies, delighting in pasture-ground, appearing in the wet season. L. stipularius, Roth. Flowers small, blue. Corolla inserted in the mouth of the calyx. Roth has mistaken the 2 small bracteae on the pedicels to be stipulæ.

Trigonal-stemmed Lobelia. Pl. ½ to 1 foot? 


68. L. Pyramidalis (Wall. in asiat. res. 13. p. 379.) smooth; leaves lanceolate, long-seccuminate, serrated; upper ones linear, attenuated; petioles petiolate; calyceine segments linear-subulate, about equal in length to the corolla; stems erect, branched. Z. H. Native of Nipaul, on the mountains at Narinithy. This is the most common and most ornamental plant in Nipaul, where it grows both in low and elevated situations. It is found from the entrance of that country at Bechiao, up to the mountains that bound the valley to the north, and where it grows at an elevation of at least 8000 feet. It is also found in the hilly country of Silhet. D. Don, in bot. mag. t. 2387. L. stimulans, Hamilt. mss. ex D. Don, prod. fl. nep. p. 157. Plant variable in height, and is often found altogether of a deep purple, but chiefly the floral branches and leaves. Stem pyramidal branching. Leaves downy beneath. Corollas purplish-violet. Anthers deep blue, pilose. Lobes of stigma hollow beneath.


69. L. Excelsa (Wall. in Roxb. fl. ind. 2. p. 114.) leaves oblong-lanceolate, acuminate, denticulated, attenuated at both ends, densely clothed with villi, on short petiolo; racemes terminal, erect, villous, leafy, dense-flowered; calyceine segments linear, as long as the tube of the corolla. O. H. Native of the Nelligherry mountains, near Coimbetore, where it was collected by Leschenault, and where it is called by the natives Oumari. Leaves 10 inches long, and 1 broad. Petioles marked by the decurrent base of the leaf. Flowers large. 

Tall Lobelia. Pl. 10 to 12 feet. 

70. L. Rosea (Wall. in Roxb. fl. ind. 2. p. 118.) plant covered with glaucous short dense villi; stem petiolate; leaves lanceolate, ensiform, acuminate, finely denticulated; racemes terminal, with unilateral flowers; calyceine segments equalling the tube of the corolla. O. F. Native of Nipaul, in the valley of Noakote. Leaves from 8-12 inches long; floral ones linear-lanceolate, rounded at the base. Flowers numerous, nodding, downy, like those of L. pyramidalis, but larger, of a pale rose-colour. Anthers connected into a long purple incurvated tube, bearded. Filaments downy. Ovarium bi-trilocular. Stigma pubescent. 

Rose-coloured-flowered Lobelia. Pl. 4 to 6 feet. 

§ 3. Species natives of Africa, particularly of the Cape of Good Hope. Flowers generally violaceous or blue, rarely white or yellow.

* Stems erect. Leaves entire.


74 L. scabra (Thunb. phyt. bl. p. 21. fl. cap. 2. p. 35.) leaves linear, emarginate, scabrous, quite entire; stems weak, filiform, hairy; pedicels axillary, solitary, flexuous, longer than the leaves. Ƥ. G. Native of the Cape of Good Hope. Leaves sessile, subsecund. Calyx and corolla hairy.

Scabrous Lobelia. Pl. ¾ foot.

75 L. commutata (Reem. et Schlutes. syst. 5. p. 36.) lower leaves ovate; superior ones oblanceolate; all sessile, retuse, and emarginate, with revolute margins, biseret with a few hairs on the nerves and on the edges; floriferous branches and stems naked at the apex; flowers racemose, on short pedicels, reflexed. Ƥ. G. Native of the Cape of Good Hope. Stems ascending, biseret with a few white bristles. Leaves rather distich. Calyx hispid. Corolla violaceous, with a long white hispid tube. Anthers bearded by white hairs. Changed Lobelia. Pl. ascending.


79 L. paniculata (Lin. spec. 1319.) leaves linear, quite entire; stems leafy at the base, and naked at the apex, branched, panicled; panicle dichotomous. Ƥ. or Ƥ. G. Native of Ethiopia. Burm. afr. t. 38. f. 3. Leaves short, sessile. Branches loose, furnished with 2 small opposite leaves under each fork. Flowers small, blue. Panicled Lobelia. Pl. ½ to 1 foot.

* * Stems erect. Leaves serrated or crenated.

80 L. bellidifolia (Thunb. prod. 1. p. 40. fl. cap. 2. p. 47.) leaves ovate, toothed, hairy, or obovate crenated, downy beneath; stems hispid at the base, simple, divided into a panicle at the top; lower pedicels the longest. Ƥ. G. Native of the Cape of Good Hope. Corollas blue. Leaves of the ramifications of the panicule subulate, smooth. Daisy-leaved Lobelia. Fl. May, Aug. C. 1790. Pl. 1/2 to ¾ foot.

81 L. rhizophylla (Spreng. nov. prov. 1818. ex Ræm. et Schultes, syst. 5. p. 44.) lower leaves petiolate, obovate, repandently toothed, glabrous, rather fleshy; superior ones lanceolate, sessile, rather decurrent. Uppermost ones ciliately, quite entire; pedicels short, axillary; capsules cylindrical, glabrous; stems radicant at the base, and ascending at the apex, triqueterous, glabrous. Ƥ. G. Native of the Cape of Good Hope. Sims. bot. mag. 2519. Flowers white, marked with blue. It differs from L. bellidifolia in the smoothness of its parts; and from L. cuneiformis, R. Br. in the deciduous radicant stems.


82 L. triquetra (Lin. mant. p. 120.) glabrous; leaves lanceolate, pinnatitudinously toothed, sessile; racemes terminal; branches and pedicels trigonal. Ƥ. G. Native of the Cape of Good Hope. Fl. May, Aug. C. 1794. L. capillata, Burm. prod. p. 25. Leaves as if they were agglutinated at the base. Racemes erect, pedunculate. Corollas blue.

Var. β, comosa; leaves linear, toothed; flowers terminal. Ƥ. G. Native of the Cape of Good Hope. L. corymbosa, Berg. cap. p. 344. Flowers blue.

Var. γ, alta; corollas leafy; flowers white. Ƥ. G. Native of the Cape of Good Hope. Triquetrous-stemmed Lobelia. Fl. May, Aug. C. 1774. Pl. 1 foot.

83 L. decumbens (Sims, bot. mag. t. 2277.) glabrous; stems decumbent; leaves obovate, toothed: superior ones dissimilar; pedicels axillary, shorter than the bracteas, which are linear, quite entire, and decurrent. Ƥ. G. Native of the Cape of Good Hope. L. bellidifolia, Hortul. Calycine teeth short, spreading, subulate. Flowers blue, smaller than in L. bicolor, with a white or yellowish throat.


85 L. tomentosa (Lin. fil. suppl. p. 394.) tomentose; leaves linear, toothed; peduncles terminal, very long, 1-2-flowered. Ƥ. G. Native of the Cape of Good Hope. Stems numerous, ascending, simple, having the leaves imbricated at the base. Leaves like those of Corophopis, having 4-6 obtuse teeth on each side, with revolute edges, clothed with hairy tomentum; peduncles clothed with adpressed hairs, bearing 2 small opposite leaves in the middle, or towards the base, and above these 2 opposite setaceous ones. Corolla blue or violaceous, half an inch long. Anthers beset with white hairs at the apex.


86 L. secunda (Lin. fil. suppl. p. 395. Thunb. fl. cap. 2. p. 45.) glabrous; lower leaves oblong, toothed: superior ones lanceolate, entire; peduncles racemose, second. Ƥ. G. Native
of the Cape of Good Hope, in sandy inundated places. The plant can hardly be said to be truly glabrous. There are floriferous branches in the axils of nearly all the leaves, and the flowers are all drooping to one side. Stems numerous, filiform, striated and downy, simple. Lower leaves obovate, oblongly denticulated, obtuse. Pedicels solitary, 1-flowered, shorter than the leaves. Corollas white, and are as well as the calyx downy outside.


87 L. Pátula (Thunb. prod. 1. p. 40. fl. cap. 2, p. 41.) leaves ovate, sinuate-toothed, villose; stems diffuse, spreading, filiform; pedicels solitary, axillary, capillary, downy, longer than the leaves. G. Native of the Cape of Good Hope. Leaves petiolate; superior ones lanceolate. In Lin. fl. suppl. p. 395. the plant is said to be glabrous.

Spreading Lobelia. Pl. 1 foot.

88 L. Férvens (Thunb. fl. cap. 2. p. 46.) leaves sessile, ovate-oblong; upper ones lanceolate: all serrated, glabrous; pedicels 1-flowered, much shorter than the leaves in the superior axils. G. Native of the Cape of Good Hope. Stems erecetis, brachiately, a little glabrous. Flowers blue.

Ferent Lobelia. Pl. ½ foot.

89 L. bifida (Thunb. prod. 1. p. 40. fl. cap. 2, p. 46.) leaves obovate, toothed, glabrous; stems filiform, downy, bifid or twice bifid at the apex; flowers terminal, solitary. G. Native of the Cape of Good Hope, on Mount Bockland. Stems erect, simple. Radical leaves subpetiolate, obovate, denticulated, hardly downy, a line long, but only a solitary cauline one on each stem, or 2 small alternate ones. Flowers blue. Bracteas lanceolate in the forks of the stem.

Bifid-stemmed Lobelia. Pl. 1 to 3 inches.


91 L. Minata (Linn. mant. p. 292.) leaves radical, ovate, obtuse, hardly crenated; scapes or pedicels capillary, 1-flowered, 2 inches long; corolla funnel-shaped. G. Native of the Cape of Good Hope, in fissures of rocks on Mount Taffelberg. Sims, bot. mag. t. 2390. Root throwing out off-ssets. Flowers pale blue. Habit of Montia fontana or Bellium minitum.


92 L. Minima (Sims, bot. mag. 2077.) stems prostrate; leaves ovate, crenated, petiolate, glabrous; pedicels long, axillary, 1-flowered, furnished with 2-3 linear hairy bracteas below the middle. G. Native of the Cape of Good Hope. Flowers white inside, and red outside, with a yellow throat.


Small Lobelia. Pl. 1 inch.

** Stems prostrate. Leaves cut or toothed.

94 L. Erinus (Lin. spec. 1321. Thunb. fl. cap. 2. p. 39.) leaves toothed; lower ones obovate, petiolate; superior ones almost sessile, narrow-lanceolate; pedicels 1-flowered, longer than the bracteas; stems spreading. G. Native of the Cape of Good Hope. Curt. bot. mag. 901. Rapúntium erinum, Mill. dict. no. 8.—Herm. lugdub. 110. t. 110. Stems branched at bottom. Leaves glabrous. Pedicels axillary, solitary, naked, much longer than the leaves. Flowers slender, blue, with a white or yellowish throat. Fruit 3-celled. According to Thunberg there is a variety of this, having numerous radical stems, which are as well as the leaves villous.


95 L. Alsinoides (Linn. dict. 3. p. 586. no. 29.) plant creeping, glabrous; stems branched; leaves roundish-oval, toothed; peduncles long, 1-flowered, axillary, much longer than the leaves. G. Native of the Cape of Good Hope. Stem erect at the top, but radicant at the base. Radical leaves like those of Sibthoropia; the rest ovate, toothed, and subpetiolate.

Chick-need-like Lobelia. Pl. ½ to ¾ foot.

96 L. Muscoïdes (Cham. in Linn.æa. 7. p. 215.) herb small, slender, trailing, quite glabrous; stems filiform, rooting at the nodi; leaves roundish, deeply 5-7-cleft, truncate or cuneated at the base: segments elliptic, acute, mucronulate; pedicels axillary, bracteate, erect, much longer than the leaves; ovarium obconical. G. Native of the Cape of Good Hope. Herb tufted, pale green. Corollas purple.

Moss-like Lobelia. Pl. tufted.

97 L. Munditia (Cham. in Linn.æa. 7. p. 215.) plant trailing; stems filiform, angular; leaves sessile, deciduous, lanceolate and elliptic, acute at both ends, with a few acute serratures; flowers axillary, solitary, on short pedicels; calycine segments lanceolate, acute, erect, more than one-half shorter than the tube of the corolla; anthers all bearded. G. Native of the Cape of Good Hope, at Gama, where it was collected by M. Mund. Ovarium, calyces, pedicels, stems, and outside of corolla beset with long spreading white hairs.

Mund's Lobelia. Pl. trailing.

98 L. Campionulata (Linn. dict. 3. p. 588. no. 30.) plant small; leaves linear-lanceolate, toothed; pedicels very long, 1-flowered; calyx hairy, a little reflexed. H. Native of the Cape of Good Hope. Stem simple, slender, leafy, glabrous. Leaves glabrous, sessile, hardly an inch long. Pedicels filiform, 2½ inches long, pilose at the apex, solitary in the axils of the superior leaves. Flowers erect, campionulata, blue. Limb spreading, hardly divided, rather irregular. Calycine segments narrow.


99 L. Breyni (Linn. dict. 3. p. 588.) leaves sessile, lanceolate, toothed, minute, usually unilateral; flowers almost sessile; the pedicels are short and alternate; stems procumbent. G. Native of the Cape of Good Hope. Breyn. cent. p. 175. t. 89. Stems long, filiform. Flowers blue. Bracteas much shorter than the flowers.

Breynius's Lobelia. Pl. procumbent.

100 L. Chaméphyta (Linn. dict. 3. p. 590.) leaves linear, channelled, numerous, bil dentate at the apex, clothed with hairy tomentum; pedicels very long, naked, axillary and terminal, furnished with narrow acute scales; stem sparsely, G. Native of the Cape of Good Hope. L. scabra. Spreng. neu. ent. ex syst. Habit of Lavandula, with the leaves of Ajuga chamaephytae. Stems leafy, slender. Pedicels longer than the stem, 6 inches long. Corollas of a pale violaceous colour, 6 lines long, inflated at the base.

Ground-pine-like Lobelia. Pl. ½ to 1½ foot.

101 L. Erinoides (Linn. mant. p. 291. Thunb. fl. cap. 2. p. 39.) leaves petiolate, oblong, toothed, bluntish, glabrous; pedicels axillary, solitary, shorter than the leaves; corolla funnel-shaped; stems prostrate or erectish. G. Native of the Cape of Good Hope. Rapúntium erinoides, Mill. dict. no. 9.—Herm. lugdub. p. 108. t. 109. Corollas funnel-shaped, an-
gular, equal, blue, with spreading segments. Filaments combined into a 5-striped, club-shaped tube. Stigma hairy.

**Erinus-like Lobelia.** Fl. June, Aug. Clt. 1759. Pl. prostrate, or \( \frac{1}{4} \) foot.

102. *L. bicolor* (Curt. bot. mag. t. 514.) leaves downy, serrated: lower ones oblong, nearly sessile: superior ones lanceolate; pedicels solitary, axillary, longer than the leaves. **G.** Native of the Cape of Good Hope. Willd. enum. 1. p. 218. Corollas blue, with a sulphur-coloured throat. Curtis says the leaves are downy and nearly sessile, while Willdenow says they are glabrous and petiolate.

**Two-coloured-flowered Lobelia.** Fl. June, Aug. Clt. 1755. Pl. \( \frac{1}{2} \) foot.


**Holly-leaved Lobelia.** Fl. May, Sept. Clt. 1815. Pl. \( \frac{1}{4} \) to \( \frac{1}{2} \) ft.


**Two-edged-stemmed Lobelia.** Fl. Ju. July. Clt. 1818. Pl. \( \frac{1}{2} \) ft.


**Downy Lobelia.** Fl. June, July. Clt. 1780. Pl. \( \frac{1}{2} \) to \( \frac{1}{4} \) ft.

106. *L. Thermales* (Thunb. prod. 1. p. 40. fl. cap. 2. p. 42.) leaves ovate, serrated, attenuated at both ends, acute, glabrous above, and pilose beneath; pedicels solitary, axillary, shorter than the leaves, and are as well as the calyces clothed with stigose white hairs; stems decumbent, hairy. **G.** Native of the Cape of Good Hope, in the region of the hot springs near Elephants' river. *Corolla yellow.*

**Hot-spring Lobelia.** Pl. decumbent.

107. *L. Leptora* (Griess. in Linn. 5. p. 419.) stem herbaceous, decumbent, branched; branches flat; leaves ovate-lanceolate, sharply serrated, quite glabrous, with cartilaginous edges; pedicels axillary, solitary; capsule elongated, clavate, hispid from bristles. **G.** Native of the Cape of Good Hope. Branches beset with white hairs. Leaves sessile. Calyx bristly. Corolla downy, white, having the segments bearded at their tips, and ciliated on the margins. Filaments and style glabrous.

**Slender-fruited Lobelia.** Pl. decumbent.

108. *L. Hirsch* (Lin. spec. 1322.) leaves ovate, toothed, or crenated, hairy or woolly; pedicules lateral, solitary, very long, 2-3-flowered; stem shrubby, hairy, prostrate, or erect. **G.** Native of the Cape of Good Hope. Thunb. fl. cap. 2. p. 37. Rapuntium hirsutum, Mill. dict. no. 9.—Burm. afr. 105. t. 40. f. 2. Flowers blue, drooping, small.

**Hairy Lobelia.** Fl. May, Sept. Clt. 1759. Pl. \( \frac{1}{4} \) foot.

109. *L. Sépræns* (Lam. dict. 3. p. 588.) leaves ovate, crenated, glabrous; pedicels axillary, solitary, shorter than the leaves; stems prostrate, a little branched. **G.** Native of the Cape of Good Hope. Stems slender, flexuous. Leaves thin, hardly an inch long. Flowers small, blue.

**Creeping Lobelia.** Pl. prostrate.


**Pygmy Lobelia.** Pl. decumbent.

111. *L. Coronopifolia* (Lin. spec. 1322.) leaves lanceolate, toothed; pedicules long, few-flowered. **G.** Native of the Cape of Good Hope. Curt. bot. mag. 644.—Breyen. cent. t. 88. Stems and petioles hairy. The 3 segments of the lower lip of the corolla obovate, emarginate. Leaves with 3 or more teeth on each side. Flowers beautiful blue. Stems procumbent.


113. *L. Cerele* (Hook. bot. mag. 3701.) stem short, decumbent at the base, densely leafy; leaves lanceolate, dentately pinnatifid, downy, attenuated at the base; pedicels terminal, very long, bearing a few-flowered second racemes at the apex; segments of the corolla longer than the tube. **G.** Native of the Cape of Good Hope. Pedicels bracteolate. Corollas drooping, large, purplish blue; lower lip of 3 obovate emarginated mucrinate segments, having 3 small yellow raised marks at the base, the upper lip of 2 small bent back segments. Anthers purple, fringed at the top. Like *L. coronopifolia.* (f. 121.)*

**Blue-flowered Lobelia.** Pl. 1 foot.

114. *L. Sym* (Sweet, hort. brit. p. 247.) leaves petiolate, recurved, pinnatifid, with bifurcate lobes; pedicules elongated, lateral, 2-3-flowered; stem shrubby. **G.** Native of the Cape of Good Hope. L. pelluculata, Sims, bot. mag. t. 2251. Flowers blue, having the tube purple outside. Calycine segments short. Lower lip furnished with 2 yellow marks at the base.

**Sims' Lobelia.** Shrub 1 foot.

115. *L. Creata* (Thunb. prod. 1. p. 39. fl. cap. 2. p. 40.) leaves lanceolate, crenated, glabrous; stems herbaceous, filiform, decumbent; pedicels capillary, axillary, hardly the length of the leaves. **G.** Native of the Cape of Good Hope. Stems branched a little. Leaves about an inch long: lower ones acute: superior ones smaller and obtuse. Flowers blue?

**Crenated-leaved Lobelia.** Fl. April, May. Clt. 1794. Pl. decumbent.

§ 4. *Species natives of the Isle of France, the Society Islands, and New Zealand.*

116. *L. Arborea* (Forst. prod. no. 308.) stem arborescent; leaves petiolate, ovate-oblong, serrately toothed; pedicels axillary, solitary, 1-flowered. **G.** Native of the Society Islands.
Tree Lobelia. Tree.

117 L. supe'ra (Cham. in Linnaea. 7. p. 225.) arboreous, palm-formed; stem quite simple, straight, with a tuft of leaves at top; leaves glabrous, oblong-obovate, acuminate, narrowed into the petioles, undulated, denticulated, with reflexed edges, almost quite entire towards the base, and revolute; inflorescence and corollas tomentose. genu. S. Native of the Island of Oahu, in woods. Ribs of leaves thick, and prominent beneath; veins feathered and prominent. Peduncles longer than the leaves, declinate, nutiform, furnished with many oblong-elliptic sessile densely imbricated bracteas, bearing a globose head of flowers each. Corolla curved, cleft on the back, 2½ inches long. Column of stamens glabrous, exceeding the corolla. Two lower anthers bearded. Leaves 2½ feet long and 1 foot broad. This is a most superb species.

Superb Lobelia. Tree. 10 to 15 feet.

118 L. macrostachys (Hook. et Arn. in Beech. voy. pt. bot. p. 88.) glabrous; stem tall, straight; leaves linear-lanceolate, attenuated at both ends, suberect; racemes simple, terminal, very long; pedicels secund, horizontal; bracteas linear, shorter than the pedicels; tube of calyx hemispherical, with the segments obtuse; corollas twice the length of the pedicels. genu. S. Native of the Sandwich Islands. Calyx closely adhering to the ovary; with a free 5-parted limb, which is about equal in length to the tube. Corolla tubular, 3 inches long; tube cylindrical, 5-cleft, split on the back. Stamens with a free tube, and cohering anthers; the two lower ones bearded. Stigma 2-lobed; lobes flat, thick, cartilaginous, rounded, disarticulate, beardless. Fruit unknown.

Long-spiked Lobelia. Shrub tall.


Var. β, Luzoniënisis (Rœm. et Schultes, syst. 5. p. 61.) lower leaves ovate, very minute. — Native of the island of Luzon, near the town of Santa Cruz de la Laguna. L. filiformis, Cav. icon. 6. p. 7. t. 511. f. 2. Flowers pale blue.

Filiform Lobelia. Pl. ½ to 1 foot.

120 L. angulàta (Forst. prod. no. 309.) stem prostrate, quite simple; leaves roundish, repandly toothed; peduncles axillary, solitary, 1-flowered. genu. G. Native of New Zealand. L. repánda, Mart. Mill. no. 33. Perhaps a species of Pratia. Angular-leaved Lobelia. Pl. prostrate.

§ 5. Species natives of New Holland.

* Herbaceous plants, with axillary 1-flowered peduncles.

121 L. ala'ta (Labill. nov. holl. 1. p. 51. t. 72.) plant glabrous, erect; stem trigonal; angles a little winged; leaves linear or cuneate, decurrent, toothed; teeth divericate or reflexed; pedicels shorter than the leaves; ovary glabrous; capsules cylindrical. genu. G. Native of New Holland. Flowers blue?

Var. a. angustifolia (Rœm. et Schultes, syst. 5. p. 68.) superior leaves linear; angles of stem margined; radical leaves ovate-lanceolate. genu. G. Native of the south coast of New Holland, and about Port Jackson; and of Van Diemen's Land. Var. β, cuneiformis (Rœm. et Schultes, 1. c.) leaves cuneiform, toothed at top, decurrent; flowers axillary. genu. G. Native of the south coast of New Holland. L. cuneiformis, Labill. nov. holl. 1. p. 51. t. 73.


122 L. quadrangularis (R. Br. prod. p. 563.) glabrous; stem tetragonal, ascending; leaves ovate, toothed, almost sessile, 3 or 4 times shorter than the peduncles; segments of the superior lip of the corolla narrow, linear. genu. G. Native of New Holland, on the shore, within the tropic.

Quadrangular-stemmed Lobelia. Pl. ascending.

123 L. rugélosa (Graham. in edinb. phil. journ. Dec. 1829.) leaves roundish, repand, wrinkled with the nerves, glabrous; pedicels much longer than the leaves; calycine segments entire, glandular at the base; stem spotted, prostrate, rooting. genu. G. Native of New Zealand. L. maculátà, Penny. Plant glabrous. Corolla white, split on the upper side. Segments of corolla rather unequal, arranged like the radii of a semi-circle. Anthers leaded-coloured, with 2 short awns projecting downwards from their apex. Nearly allied to L. membranacea, R. Br. prod. Perhaps a species of Pratia.

Wrinkled-leaved Lobelia. Pl. creeping.

124 L. membranàceà (R. Br. l. c.) glabrous, procumbent; leaves roundish, repandy toothed, membranous, somewhat 3-nerved, shorter than the peduncles; segments of the calyx toothed a little. genu. G. Native of New Holland, within the tropic, on the shore. Flowers beautiful, purple.

Membranous-leaved Lobelia. Pl. procumbent.

125 L. purfura'scens (R. Br. l. c.) glabrous; stem ascending, tetragonal; leaves ovate-lanceolate, deeply serrated, one-half shorter than the peduncles; segments of the upper lip of corolla narrower, linear. genu. G. Native of New South Wales, about Port Jackson. Flowers purplish or blue.


126 L. fluviätilis (R. Br. l. c.) plant creeping, smoothish; branches ascending; leaves ovate, serrated on the outside, rather ciliated; pedicels bracteate, downy, as well as the calyces and ovaria; stamens epipetalous. genu. G. Native of New South Wales, at Port Jackson.

River Lobelia. Pl. ascending.

127 L. inunda'ta (R. Br. l. c.) plant creeping, glabrous, tufted; leaves roundish, repandly toothed, longer than the peduncles, which are bracteate and glabrous; segments of the calyx a little shorter than the tube of the corolla; stamens epipetalous. genu. G. Native of New South Wales, at Port Jackson. Flowers blue.


128 L. peduncula'ta (R. Br. l. c.) plant creeping, rather downy; branches ascending, filiform; leaves remote, ovate, angularly toothed, acute, a little ciliated; peduncles very long, furnished with 2 minute bracteas; stamens epipetalous. genu. G. Native of New South Wales, at Port Jackson. Flowers blue.


129 L. iri'sis (R. Br. l. c.) plant creeping, moss-like, glabrous; leaves roundish, thickish, dentately crenated, petiolate, longer than the peduncles, which are bracteate; tube of corolla cleft longitudinally, with the segments of the limb nearly equal; stamens epipetalous. genu. G. Native of Van Diemen's Land, and on the south coast of New Holland. Flowers purplish? Irrigated Lobelia. Pl. creeping.

* * Racemes or peduncles few-flowered, terminal. Tube of corolla cleft longitudinally, with the lips of the limb very unequal.

130 L. gra'cilis (Andr. bot. rep. t. 340.) plant glabrous, erect, branched a little; racemes rather secund; calyx length of filaments; superior lip of the corolla densely bearded; middle segment of the lower lip almost square, broader than long; lower leaves nearly ovate, deeply pinnatifid; superior ones


131 _L. dentata_ (Cav. icon. 6. p. 14. t. 522.) plant erect, glabrous; a little branched; racemes few-flowered, secund; calyx one-half shorter than the filaments; superior lip of corolla a little bearded; middle segment of the lower lip oblong; lower leaves ovate-lanceolate, deeply toothed on the outer side; superior ones lanceolate, toothed. 7. G. Native of New South Wales, about Port Jackson, and of Van Diemen's Land. Root fusiform, fibrous. Segments of the calyx subulate. Corolla blue, with a white throat. Two upper segments of the corolla very short.


132 _L. gibbosa_ (Labill. nov. holl. l. p. 50. t. 71.) glabrous; stem terete, simple; racemes secund, many-flowered; leaves linear, quite entire, rather fleshy; superior lip of corolla beardless; and with the segments of both lips lanceolate; capsule gibbous on one side. 7. G. Native of New South Wales, about Port Jackson, and of Van Diemen's Land. Root perpendicular, almost simple. Racemes very long, Bracteas subulate, hardly the length of the pedicels. Corollas blue. Anters biapicd at the apex.


133 _L. simplicicaulis_ (R. Br. prod. p. 564.) glabrous; stem quite simple, terete; raceme secund, few-flowered; leaves linear, toothed, remote; lower ones lanceolate; upper lip of corolla bearded, the segments of both lips acute; capsules gibbous on one side. 7. ? G. Native of Van Diemen's Land. Flowers blue?

_Simple-stemmed Lobelia._ Pl. 1 foot.

134 _L. Browniana_ (Rom. et Schultes, syst. 5. p. 71.) stem terete, a little branched; raceme secund; leaves linear, lower ones toothed; superior lip of corolla ciliolate: the segments of both lips acute; capsules gibbous on one side. 7. ? G. Native of New Holland, within the tropic, on the shore. L. stricta, R. Br. l. c. Flowers blue.

_Brown's Lobelia._ Pl. 1 foot.

135 _L. heterophylla_ (Labill. nov. holl. l. p. 52. t. 74.) plant smoothish; stem angular, simple; raceme secund; leaves thickish: lower ones dentately pinnatifid; superior ones linear, quite entire; middle segment of the lower lip of the corolla obcordate, and the lateral ones dimidiate. 7. ? G. Native of New Holland, in Van Lewin's Land. Root simple, perpendicular. Bracteas lanceolate, solitary or twin, shorter than the pedicels. Calyx inflat., with very acute segments.

_Variable-leaved Lobelia._ Pl. 1 foot.

136 _L. tenior_ (R. Br. in prod. p. 564.) plant rather pilose; stem filiform, divided; branches peduncle-formed, 1-flowered; lower leaves pinnatifid, of an ovate outline: superior leaves linear, trifid or quite entire; middle segment of the lower lip of the corolla obcordate: lateral ones dimidiate; capsule subcylindrical. 7. ? G. Native of New Holland, on the south coast, within the tropic. Flowers blue?

_Slender Lobelia._ Pl. 1 foot.

137 _L. parvifolia_ (R. Br. l. c.) glabrous; stem subpanicled, terete; branches usually 1-flowered, peduncle-formed; superior lip of corolla beardless: segments of the lower lip oblong, acutish. 7. ? G. Native of New Holland, on the south coast.

_Small-leaved Lobelia._ Pl. 1 foot.

§ 6. _Species natives of Europe._


139 _L. serrulata_ (Brot. fl. lus. p. 304.) glabrous; leaves linear-lanceolate, sharply serrated; racemes long; stem erect. 7. H. Native of Gibraltar, in sandy humid places. Bractes a little longer than the pedicels. Corolla rather roughish. Middle segment of the lower lip narrower than the lateral ones; segments of the upper lip linear. Flowers blue. Perhaps not distinct from _L. urens._


141 _L. salzmanniana_ (Presl. symb. bot. p. 31. t. 20.) plant quite glabrous; stem quite simple, erect, leafy; leaves lanceolate, obtuse, crenated, tapering into the petioles: uppermost ones dispersed in aggregate whorles; pedicels axillary, filiform, bifruncate in the middle. 7. H. Native of Corsica, at Ajaccio by the sea side. L. Laurénétia, Salz. pl. cors. exsic. Flowers blue?

_Salzmann's Lobelia._ Pl. 11/2 foot.


143 _L. fasteti_ (Vand. in Rom. script. pl. hisp. p. 66. Vitt. suppl. 1. p. 261.) lower leaves ovate-lanceolate, obsolescently toothed; floral leaves linear. 7. H. Native of Portugal, in humid places. Stem 2 hands high, many-angled, branched at the base. Leaves glabrous. Calyx gibbous, with linear spreading segments. Corolla pentagonal, blue, the segments of the lower lip the largest. In the base of the inner part of the limb there are two oblong parallel callosities, as in the genus _Dolichos._ Style longer than the stamens. Capsule ventricose.

_Var. a; leaves oval-oblong, acuminated, dentilicate; stem leafy, somewhat spiricate; anthers hairy, joined at the apex.

_Var. β; stem suffruticeus; leaves cordate, acute, serrated; flowers axillary, pedunculate._

_Farseti's Lobelia._ Pl. 1 to 11/2 foot.

† _Species not sufficiently known._

144 _L. cornuta_ (Lin. spec. 1519.) leaves ovate, petiolate;
stamens very long. 7. S. Native of Cayenne. Leaves said to be quite entire.

Horned Lobelia. Pl.?

145. L. kryoides (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 41.) stems tufted; leaves sessile, lanceolate, Quite entire, acute; stems terminal. 7. S. Native of South America, on Mount Antauna. Humb. et Bonpl. Habit of a moss or Arêta. Leaves imbricated, shining, coriaceous, dentilated. Flowers among the terminal concentive leaves. Perhaps a species of Lysiptoma.

Bryum-like Lobelia. Pl. 1/4 foot.

146. L. veronicifolia (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 57.) stem erect; leaves downy: radical ones obtuse, obovate; cauleine leaves lanceolate, dentate, acute; flowers terminal, racemose. 7. S. Native of South America. Humb. et Bonpl.

Speedwell-leaved Lobelia. Pl.?

147. L. amygdalina (Willd. l. c. p. 57.) stem erect; leaves ovate, acuminate, serrated; pedicels axillary; corolla cleft. Native of South America. Humb. et Bonpl.

Almond-like Lobelia. Pl.?

148. L. retbora (Willd. l. c.) stem arboreous; branches scabrous; leaves petiolate, elliptic, mucronate, with retrorsade serrations, wrinkled, veiny; flowers terminal, racemose. 7. S. Native of South America. Humb. et Bonpl.

Retrograde-serrate-leaved Lobelia. Shrub.

149. L. bonplandiana (Willd. l. c.) stem arboreous; leaves lanceolate, sharply serrated, flat, downy, on short pedioles; pedicels axillary, shorter than the leaves. 7. S. Native of South America. Humb. et Bonpl. L. dentata, Willd. herb.

Bonpland's Lobelia. Shrub.

150. L. elliptica (Willd. l. c.) stem arboreous; leaves elliptic, obtuse, ruged, veiny, denticulated; branches, pedioles, and peduncles clothed with hairy tomentum, as well as the leaves; calyxes reflexed; corollas downy. 7. S. Native of South America. Humb. et Bonpl.

Elliptic-leaved Lobelia. Shrub.

151. L. nivea (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 58.) stem arboreous; leaves elliptic, with revolute edges, toothed, shining and wrinkled above, but clothed with white tomentum beneath, as well as on the pedioles and corollas; flowers axillary. 7. S. Native of South America. Humb. et Bonpl.

Snowy Lobelia. Shrub.

152. L. reticulata (Willd. l. c.) stem arboreous; leaves ovate-lanceolate, acuminate, crenated, wrinkled from veins, downy beneath; corollas terminal, racemose. 7. S. Native of South America. Humb. et Bonpl.

Reticulated-leaved Lobelia. Shrub.

153. L. madagascarënsis (Rœm. et Schultes, syst. 5. p. 67.) lower leaves ovate: superior ones lanceolate, denticulated, decurrent; flowers axillary, length of leaves; stem prostrate. 7. H. Native of Madagascar. L. decurrensis, Willd. herb.

Madagascar Lobelia. Pl. prostrate.

154. L. phyteuemoïdes (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 68.) leaves lanceolate, toothed, sessile, glabrous; racemes terminal; stem ascending, a little branched. 7. S. Native of South America. Humb. et Bonpl.

Phyteuma-like Lobelia. Pl. ascending.

155. L. humboldtiana (Rœm. et Schultes, syst. 5. p. 68.) leaves roundish, acute, sessile, with cartilaginosely serrated edges; flowers sessile, axillary; stem weak. 7. S. Native of South America. Humb. et Bonpl. L. sessilifolia, Willd. herb.

Humboldt's Lobelia. Pl.?

156. L. polystrophylla (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 68.) stems prostrate; lower leaves serrated, oblong; superior ones quite entire, lanceolate; pedicels axillary, elongated. 7. S. Native of the island of Bourbon, Bory de St. Vincent.

Polyphygous Lobelia. Pl. prostrate.

157. L. loxënsis (Willd. herb. ex Rœm. et Schultes, syst. 5. p. 72.) plant clothed with scabrous tomentum; leaves oblong, wrinkled, and shining above; flowers terminal, panicled. 7. S. Native of Brazil, at the banks of the Rio Grande, where it was collected by Sello.

Rio Grande Lobelia. Shrub.

Cult. All the species of this genus are truly ornamental when in blossom. The hardy herbaceous kinds thrive and flower best in light rich earth or peat soil; but in winter most of the kinds require to be protected by planting them in pots and placing them in a frame or green-house. They increase freely by the suckers from the roots or by seed. The green-house and stove perennial herbaceous kinds grow well in a mixture of peat and sand, and are easily increased by dividing, and by seeds. The shrubby, stow, and greenhouse kinds grow well in the same kind of soil recommended for the perennial herbaceous species, and are easily increased by cuttings in the same kind of soil. The seeds of annual species require only to be sown where they are intended to remain.

IX. DORTMANN (named after — Dortmann, a Dutch apothecary, according to Clusius.) Rubb, act. ups. ann. 1720. 97. t. 2. Neck. el. Lobelia species, Lin. and Nutt.

LIN. SYST. PENTADURIA, MONOGYNIA. Calyx of 5 deep segments. Corolla bilabiata, with a bearded mouth, cleft on the back; lower lip trifid; upper lip of 2 smaller segments. Stamens with free filaments, and cohering bearded anthers. Stigma capitate, hairy. Capsule half superior, 3-valved, 3-celled, 5angled, surrounded by the segments of the calyx below the summit, many-seeded. — Aquatic, smooth, fleshy plants. Leaves numerous, mostly radical, recurved. Scapes hollow, with a few leaves at the base, bearing a lax raceme of flowers at the top. Bracteas solitary at the base of the pedicels.


2 D. paludosâ; leaves flat, linear-oblong, with obsolescently crenated margins; scape nearly simple and naked, bearing a few remote flowers at the apex. 7. H. Native of North America, in deep sphagnum swamps, from Sussex county in Delaware to Georgia. Lobélia paludosa, Nutt. nov. gen. 2. p. 75. Leaves 4-6 inches long, and hardly 5 lines wide. Flowers pale blue, small. Corolla with the disk of the lower lip downy.

Marsh Dortmann. Pl. 2 feet.

Cult. The species of Dortmannia are singular, and beautiful plants, but difficult of culture. However, D. lacustris may be 4 y 2
grown for a time, if planted in a pot of gravel, and placed in a pond or cistern, so that the plants may be about 6 inches below the surface of the water; and D. paludosa may be grown in a pot half filled with peat earth, and the other half with sphagnum, in which the plants are to be set, and the pot placed in a shallow pan of water, or in a cistern or pond, but not so deep as to immerse the plants.

X. PARAESTRANTHUS (from παραστρέφω, parastraphe, to invert, or to distort, and ανθος, anthos, a flower; the flowers are upside down, compared with those of other genera of Lobelieae.)

Linn. sest. Pentândria, Monogy'nia. Calyx 5-cleft. Corolla bilabiate, with hardly any tube: upper lip of 3 segments, lower one of 2 segments, smaller. Staminode column upper the lower. Anthers and filaments come into a column; the latter bearded at the apex. Ovarium inferior, 2-3-celled. Stigma bifid or trifid.—Herbaceous plants, with toothed leaves, and terminal racemes of almost sessile yellow flowers.

1 P. simplex; glabrous; stems assurgent, simple; leaves lanceolate, serrated; flowers almost sessile, at the tops of the stems, forming a loose spike; bracteas toothed, shorter than the calyceous segments. 2. H. Native of the Cape of Good Hope. Lobelia corymbosa, Linn. spec. 1822. Sims, bot. mag. t. 1319.—Burm. afr. p. 101. t. 39. Flowers deep yellow.


Pl. ½ foot.

2 P. varifólia; stems erectish, branched at top; leaves linear, quite entire, and toothed, particularly the upper ones; flowers solitary, axillary, nearly terminal, almost sessile; stigma tripartite. 2. H. Native of the Cape of Good Hope. Lobelia variifólia, Sims, bot. mag. 1692. Flowers yellow.


Pl. ½ to 1 foot.


Pl. ½ foot.

Cult. Beautiful plants of easy culture. A mixture of loam, peat, and sand is the best soil for them; and they are easily increased by dividing at the root.

XI. ISO'TOMA (from ὀλος, holos, entire, and στεγα, stigia, a stigma; in reference to the entire stigma.)

Lindl. bot. reg. 964. Lobelia Isotoma, R. Br. prod. fl. nov. holl. p. 564.

Linn. sest. Pentândria, Monogy'nia. Liam of calyx 5-parted (f. 122. c), nearly equal. Corolla salver-shaped (f. 122. d) or funnel-shaped, with an entire or cleft tube, and a nearly equal 5-parted limb. Filaments combined into a tube. Anthers cohering, bearded; two lower ones mucronate. Stigma capitata, protruding beyond the anthers. Capsule 2-celled, many-seeded. —Herbaceous plants. This genus differs from all the other genera of Lobelieae plants, in the 2 lower anthers being mucronate, except Pratia.

1 I. axillâris (Lindl. bot. reg. 964;) plant rather downy; leaves sessile, pinnatifid, toothed; peduncles axillary, naked, elongated, 1-flowered; corolla salver-shaped, with an entire tube. 2. G. Native of New Holland, on the south coast. Lobelia seneioides, Cunn.ingh. L. seneioidis, Spreng. syst. add. p. 75. Coronavirus with green tube, and light blue linear-lanceolate segments. The segments of the calyx are narrow, distant, and at length reflexed. (f. 122).


2 I. bu'wni; glabrous; stems almost simple; leaves linear, quite entire; corolla salver-shaped, with an entire tube, and a somewhat unequal limb; flowers racemose. O. H. Native of New Holland, on the south coast. Lobelia hypocrepiformis, R. Br. prod. 564. Hook. bot. mag. t. 3075. Flowers beautiful purple.


3 I. scap'i gerâ; stems short; leaves lanceolate, a little toothed; corolla funnel-shaped, having the tube cleft above at the apex; peduncles scapes-formed, 1-flowered. 2. G. Native of New Holland, on the south coast. Lobelia scapigera, R. Br. prod. p. 564. Flowers blue or purple.

Var. a, bincâlìa (R. Br. l. c.) stem 6-10 lines long; leaves ovate-lanceolate, 4-6 lines long; scapes many, 2-3 inches long. 2. G.

Var. b, pusilla (R. Br. l. c.) stems almost wanting; leaves ovate, obtuse, 2 lines long; scapes almost solitary, 3-8 lines long. 2. G.

Scape-bearing Isotoma. Pl. 1 to 3 inch.

Cult. The species of this genus are very elegant while in blossom, and are of easy culture. A light soil suits them best; and they are easily increased by cuttings or seeds. They answer well if planted out during summer in the open border, with a south aspect.

XII. HOSLSTIGMA (from ὀλος, holos, entire, and στεγα, stigia, a stigma; in reference to the entire stigma.)

Lobelia, See. 3. H. R. Br. prod. p. 564.


1 I. dioica; male flowers corymbose and terminal; female ones axillary and solitary; calune leaves lanceolate, toothed or entire. 2. G. Native of New Holland, within the tropic, on the shore. Flowers blue.?

Dioecious-flowered Holostigma. Pl. ?

Cult. See Isotoma above for culture and propagation.

XIII. LYSIPOM'IA (from λυσι, luo, to solve, and πομα, pom, a lid; in reference to the capsule, which opens by an operculum at the apex). H. B. et Kunth, nov. gen. amer. 3. p. 318.

Linn. sest. Pentândria, Monogy'nia. Liam of calyx 5-parted. Corolla with a campanulate entire tube, and a 5-parted sub-bilabiate limb; the 2 lobes of the upper lip a little longer than those of the lower lip; lobes valvate in revulsion. Anthers cohering; the 2 inferior ones a little shorter than the rest, bearded at

FIG. 122.
the apex, or terminating in a membranous process. Stigma 2-
lobed, ciliated outside. Capsule somewhat 5-ribbed, 1-celled,
opening by an orbicular convex, unoblate, deciduous opercu-
num. Seeds numerous, adnate to parietal placents.—Small,
tufted, stemless or caulescent herbs, with the habit of Arélica
or Montia. Leaves alternate, linear or spatulate, quite entire,
stiff and crowded, or fleshy and remote. Flowers minute, axillary,
solitary, white, pedunculate. This genus is easily distinguished
from all the other genera of the present order.
1 L. mostioides (H. B. et Kunth, nov. gen. amer. 3. p. 320.
t. 266. f. 2.) stems creeping; leaves spatulate, rather fleshy;
peduncles axillary; calyces segments unequal, glabrous, 4 times
shorter than the tube of the corolla. 2. S. Native of Quito,
in humid places on the high plains of Mount Antisana, at
the altitude of above 6000 feet. Lobélia limosólioida, Willd. in
Rom. et Schultes, syst. 5. p. 41. Herb glabrous, with the habit
of Montia fontána.
Montia-like Lysipomia. Pl. procumbent.
2 L. reniformis (H. B. et Kunth, nov. gen. amer. 3. p. 320.
t. 266. f. 1.) stems creeping; leaves orbicularly reniform, emar-
ginate; flowers axillary; calyece segments equal, acute, gla-
brus, 3 times shorter than the tube of the corolla. 2. S. Native
of South America, near the Cave of Antisana. Herb
glabrous, with the habit of Viola palástris.
Reniform-leaved Lysipomia. Pl. creeping.
3 L. arétiloides (H. B. et Kunth, nov. gen. amer. 3. p. 321.
t. 267. f. 1.) plant tufted; stems short; leafy; leaves crowded
in a stellate manner, oblong-spatulate, acute, stiff; peduncles
axillary; segments of the calyx equal, acute, ciliated, one-half
shorter than the corolla. 2. S. Native of the Andes of Peru,
near Loxa, in Cerro de Vinijacu, at the altitude of about 4000
feet. Lobéliá glandulósa, Willd. in Rom. et Schultes, syst. 5.
p. 41. Plant glabrous, with the habit of a species of Arélica.
Arélica-like Lysipomia. Pl. tufted, an inch high.
4 L. acáutis (H. B. et Kunth, nov. gen. amer. 3. p. 321.
t. 267. f. 2.) plant tufted, stemless; leaves radical, crowded
in a stellate manner, linear, obtuse, stiff; peduncles radial; seg-
ments of the calyx unequal, obtuse, glabrous. 2. S. Native
of South America, on the high plains of Mount Antisana, and
roots of Chusquea, above the altitude of 6000 feet. Lobéliá
androsácea, Willd. in Rom. et Schultes, syst. 5. p. 41. Plant
glabrous, with the habit of Valériana rígida.
Stemless Lysipomia. Pl. tufted.
5 L. subulata; leaves radical, crowded in a stellate manner,
sulbulate, mucronate, hairy at the base; peduncles elongated;
calyces lobes acute. 2. F. Native on the Cordilleras of
Peru. Peduncles 1-flowered, an inch long. (v. s. in herb.
Lamb.)
Subulate-leaved Lysipomia. Pl. 1 inch.
Cult. The species of the Lysípomia are very remarkable little
plants, but none of them have been as yet introduced to our
gardens; but should they ever be, we would recommend their
being grown in a mixture of loam and peat, in small pots, well
drawn with sherdz. They will be easily increased by di-
viding.

XIV. MONOPSIS (from μονος, monos, one, and ωρίς, opis,
a face; in reference to the flowers being regular, not bilabiate).
Salis.—Lobélia spéculum, Andr. bot. rep. 664. Speculária,
Solaná. mss.
Lín. syst. Pentándria, Monogynía. Calyx tubular with 5
equal spreading linear-acute segments. Corolla salver-shaped,
with a terete tube, which is split on one side, allowing the sta-
mens and style to escape, and to rotate equal limb; segments
obuse, mucronate. Anthers cohering. Capsule inferior, 2-
celled, many-seeded.—A small elegant plant, with prostrate
branches; very long, solitary, axillary, 1-flowered, naked pedun-
cles; linear-lanceolate, irregularly toothed, or entire alter-
ate leaves; and showy deep blue flowers, with yellow anthers.

1 M. conspiécu (Salis.) 0. H. Native of the Cape of
Good Hope. Lobélia spéculum, Andr. bot. rep. t. 664. Sims,
bot. mag. t. 1499.

prostrate.

Cult. A little annual plant, worth cultivating in every col-
lection, for the sake of its neat, elegant, deep blue flowers.
The seeds should be raised in the hot-bed, and the plants, when
about an inch above ground, should be planted separately into
small pots, filled with a mixture of peat and sand, and others
may be planted out into the open border in May, in warm sheltered
situations.

XV. HIPPOBROMA (from ἵππος, hippos, a horse, and βρό-
mos, bronos, poison; the plant is a very strong poison, and
proves fatal to horses that eat it). Lobélia species of authors.

Lín. syst. Pentándria, Monogynía. Calyx of calyx 5-parted;
segments linear, ciliated. Corolla with a very long straight en-
tire tube, and a 5-parted nearly equal limb. Staminate tube
exserted beyond the throat of the corolla. Stamens and an-
ters connate; the latter bearded. Stigma 2-lobed. Capsule
2-celled, 2-valved, many-seeded.—A herbaceous plant, with
short axillary pedicels, runcinate or coarsely toothed leaves,
and long white flowers, resembling those of Mirabilis longífóra.

1 H. longífóra; leaves obvate-lanceolate, coarsely toothed;
tube of corolla very long and slender. 2. S. Native of Jamaica
and St. Domingo, and others of the West Indies Islands, on
the banks of rivers. Lobélia longífóra, Jacq. amer. 219. éd. pict.
Rapúntum longífórum, Mill. dict. no. 7.—Sloan, jun. 158, t. 101.
f. 2. Plant hairy. Ovarium turbinate, pentagonal. Tube of
anthers 10-versed. This is a very poisonous plant. If it be
handled, and the hand unawares be applied to the eyes, it brings
on an inflammation. The Spanish Americans call it Rehéneta
Caíallos, because it proves fatal to horses that eat it; it acts as
a violent cathartic. It is well known in St. Domingo under the
name of Quebec.

1 foot.

Cult. A mixture of peat, loam, and sand suits this plant, and
it is easily increased by cuttings, in the same kind of soil, under
a hand-glass in heat.

XVI. CLINTONIA (named in honour of the late De Witt
Clinton, governor of the State of New York, author of several
ingenious treatises on different branches of natural history).
Doug. in bot. reg. 1241.

Lín. syst. Pentándria, Monogynía. Calyx adhering to the
ovarium, with a 5-lobed equal limb. Corolla bilabiata, with
hardly any tube; lower lip cuneated, 3-lobed; superior one
straight, bipartite. Stamens combined into an incurved tube:
anthers cohering; the 2 lower ones bearded at the apex. Ova-
rion silique-formed, triangular, twisted, 1-celled, with 2 parietal
placentas. Capsule dry, chartaceous, many-seeded, opening by
3 thong-formed valves.—Herbaceous, procumbent, glabrous
plants, with small linear-lanceolate leaves: and axillary, solitary,
almost sessile blue flowers.

1 C. élégans (Doug. l. c.) glabrous; root annual; stem
procumbent, branched, rather angular; leaves sessile, ovate, 3-
veined; flowers solitary, axillary, sessile; ovarium sessile, long,
acuminated. 0. H. Native of North America, on the banks
of the Columbia river. Flowers blue; the lower lip having a large white streak on the base. Stigma girded by a papillose beard. Two lower anthers alone bearded.


2 C. Bergiana (Cham. in Linnaea. 7. p. 217.) glabrous; root perennial, creeping; stems erect or decumbent, branched, triangular at bottom; leaves linear-lanceolate, acute, remotely dentate, sessile: lower ones ovate; flowers axillary, almost sessile, at the tops of the branches; ovary elongated. 1.S. Native of the Cape of Good Hope, near Hangklih, where it was collected by Mundt. Capsule elongated, crowned by the segments of the calyx, which are spreading, fleshy, and stellately disposed; anthers all bearded. Corolla pale blue.

Bergiana's Clintonia. Pl. decumbent.

3 C. fusilla; we have not been able to see the work in which this plant is described, as it has not yet been received in this country. 1. H. Native of Chili. L. fusilla, Poepp. pl. chil. exsic. 3. no. 171. syn. pl. amer. austr. misc. diar. 731. Flowers blue.

Small Clintonia. Pl. decumbent.


Lin. syst. Penátridea, Monogynia. Calyx turbinate, 5-cleft. Corolla bilabiata; segments easily separated to the base, spreading at the apex. Filaments hairy, cohering; anthers free, bearded. Stigma drooping, hollow, gibbous. Capsule 2-celled, many-seeded.—Herbaceous plants, natives of the Cape of Good Hope, with alternate, undivided, pinnate, and pinnatifid leaves; and blue or red flowers.


Var. a. vulgaris (Cham. in Linnaea. 7. p. 224.) flowers nearly an inch long; genitals half an inch, one-half shorter than the tube; segments of corolla narrow-lanceolate.

Var. b. intermédia (Cham. 1. c.) flowers 9 lines long; throat of corolla more bearded; segments of corolla more elliptic; genitals shorter than the corolline tube.

Var. c. purpurea (Cham. 1. c.) flowers not half an inch long; genitals exceeding the corolline tube; filaments villous. Perhaps a proper species.


Digitate-leaved Cyphia. Pl. twining.


5 C. serrata (Spreng. syst. 1. p. 809.) leaves radical, oblong, attenuated at the base, sessile, crenately serrated, quite glabrous, as well as the scape, which is scaly; flowers racemose; segments of the calyx reflexed, serrated. 2.S. Native of the Cape of Good Hope.

Serrate-leaved Cyphia. Pl. 1/3 foot.


8 C. ? pinna t'ra (Rœm. et Schultes, syst. 5. p. 477.) stem shrubby, erect, branched at top; leaves pinnate, smooth; leaflets very narrow, capillary. 1.S. Native of the Canary Islands. Lobelia pinna t'ra, Lam. dict. 5. p. 591. no. 44. Shrub milky. Leaves like those of Isome ra Quamceli tis. Branches very leafy. Leaves shining; leaflets 1/2 inch long.

Pinnae Cyphia. Shrub 3 feet.

9 C. robusta (Willd. rel. ex Rœm. et Schultes, syst. 5. p. 477.) leaves bipinnatifidly jagged; stem furred. Native of the Cape of Good Hope. There is a smoother and broader leaved variety of this, with larger pinnatifid bracteas, which are about the length of the flowers.

Racemed Cyphia. Pl. 1 foot.

Cult. The species of this genus thrive well in an equal mixture of loam, peat, and sand; and cuttings of them root readily under a hand-glass. Some of the species have large tuberous roots; these must be kept quite dry when not in a growing state, or they will rot. These tuberous-rooted kinds may be increased just as the stems begin to push out from the root, by cutting off as many of the shoots as are wanted, and planting them in a small pot, in the same kind of soil recommended for the species, keeping them dry till the wound has healed, but never covering them with glass; they will soon form tubers of themselves, and the old plant will make fresh shoots.

XVIII. CANONANTHUS (from κανών, kanonikos, regular, and ἀνθος, anthos, a flower; the flowers are regular, like those of Campanulaceae, not bilabiate, as in the rest of the Lobeliaceae genera). Lotelëa species, Cav. icon. 6. p. 11. t. 517.

1 C. Campanulatus; b. F. Native of Peru, on the road from Guaraná to Chimborazo. Lobélia campanulata, Cav. icon. 6. p. 11. t. 517.

Campanula-flowered Cananénthus. Shrub 8 feet.

Cult. See Tépa, p. 700. For culture and propagation.

ORDER CXXXV. STYLIDEÆ (plants agreeing with Stylidium in important characters). R. Br. prod. fl. nov. holl. p. 565.

Calyx superior, 2-6-parted, bilabiata or regular (f. 123. a), permanent. Corolla monopetalous, with a 5-6-cleft, irregular (f. 128. b), rarely equal limb, which is imbricate in aestivation, and at length falling off. Stamens 2 (f. 123. d); filaments combined with the style into a column. Anthers didymous (f. 123. d), and sometimes simple, lying upon the stigma. Pollen globose, simple, sometimes angular. Ovarium 2-celled, but sometimes almost 1-celled from the middle dissepiment being short, many-seeded; furnished with a gland in front, or crowned by 2 opposite glands. Style one; stigma undivided or bifid. Capsule 2-valved, 2-celled, with a partial dissepiment; or almost 1-celled from the dissepiment being short, or at length released from the inflexed margins of the valves. Seeds fixed to the axis of the dissepiment, erect, small, sometimes pedicellate. Albumen conforming to the seed, fleshy, and rather oily. Embryo inclosed, minute.—Caulescens scapigereous nonlactescent herbs or shrubs, beset with simple hairs, which are either tipped with capitate glands or acute. Leaves usually scattered, but sometimes verticillate, entire, with naked or ciliated edges; radical leaves crowded in the scapigereous species. Flowers spicate, racemose, corymbose, and solitary; terminal, rarely axillary; pedicels usually furnished with three bracteae.

This order is nearly allied to both Campanulaeæ and Goodevias, from both of which it is distinguished by the gymnandrous stamens, and from the latter by the want of an indusium to the stigma. The structure of the sexual organs is highly curious; the stamens and style are closely combined into a solid irritable column, at the top of which is a cavity, including the stigma, and bounded by the anthers.

Synopsis of the genera.


2 Levänohöki. Calyx 5-parted, bilabiate. Column erect, adnate to the lower side of the tube. Lobes of anthers one above the other, divaricate. Stigma 2. Capsule 1-celled.


LIN. SYST. Gymnădria, Diondra. Calyx bilabiata (f. 123. a). Corolla irregular, 5-cleft (f. 123. b); the fifth segment or label- lum dissimilar to the others, deflexed, smaller, rarely stretched out; the rest spreading, rarely joined by pairs. Column reclinate (f. 123. d.), with a double flexure. Anthers 2-lobed (f. 123. d.); lobes divaricate. Stigma obverse, undivided. Capsule 2-celled, having the dissepiment sometimes incomplete above.—Scapigerous or caulescens herbs or shrubs. Radical leaves crowded, sometimes attenuated into the petioles; caulin ones scattered, and sometimes verticillate, often small and bracteate, rarely ciliolate at the apex or loosened at the base. Inflorescence variable. Outer lip of calyx bidentate or bipartite, inner one tridentate or tripartite. Corollas purple, white, violaceous, rarely yellow, usually beset with pili on the outside, which are tipped with capitate glands: tube twisted at the base, sometimes very short; throat usually crowned by teeth or glands, but sometimes naked: the 4 larger segments of the limb approximating by pairs, one of the pair often smaller than the other. Labelium or lip narrower than the other segments, opposite the front of the calyx, but from the contortion of the tube has at length become lateral, with its disk often thickened, and rather convex inside, usually appressed by a small segment on each side, but sometimes simple. Column linear, longer than the base of the corolla. On the same side as the labelium, exserted, reclinate, having the outer bend so irritable that if touched with a pin it instantly starts from its place to the opposite side of the flower with great impetuousity. Anthers deliscing lengthwise. Stigma at first obsolete, and hidden by the incumbent anthers, but exserted at length, and sometimes hispid or papulose.

SECT. I. Ventenatia. Capsule ventricose, subovate, sometimes spherical or oblong.

§ 1. Scales scarious. Leaves radical, attenuated at the base. Outer lip of calyx 2-parted, inner one tripartite.—Scapigerous herbs, with racemose flowers.

1 S. Pilosum (Labill. nov. holl. 2. p. 63. t. 213.) scape a little branched, clothed with glandular pubescence; leaves flat, lanceolate-ensiform. 2. G. Native of New Holland, on the south coast. Flowers pale red.

Pilose Stylidium. Pl. 1 ½ foot.

2 S. Repulicate (R. Br. prod. p. 568.) scape beset with acute hairs; racemes a little branched; leaves narrow, ensiform, repulicate, with broader scales outside. 2. G. Native of New Holland, on the southern coast. Flowers red or pink? Repulicate-leaved Stylidium. Pl. ½ to 1 foot.

3 S. Hirsutum (R. Br. prod. p. 568.) scape beset with acute hairs; raceme nearly simple; leaves linear, with rather revolute edges; scales distinct. 2. G. Native of New Holland, on the south coast. Hook. bot. mag. t. 3194. Corolla of a purplish rose-colour.


§ 2. Leaves radical, crowded, without scales. Outer lip of calyx bidentate, inner one tridentate. Scapes leafless.

4 S. Umbellatum (Labill. nov. holl. 2. p. 66. t. 217.)
racemes of scape umbellate, involucriated. ụ. G. Native of Van Diemen's Land.

Umbellate-flowered Stylidium. Pl. 14 foot.

5 S. armenia (Labill. nov. holl. 2. p. 66. t. 216.) leaves linear, ensiform, with quite entire margins; scape glabrous; raceme simple, downy; lip of corolla appendixed. ụ. G. Native of Van Diemen's Land. Perhaps the same as the following.

Thrift-like Stylidium. Pl. 1 foot.

6 S. melastachys (R. Br. prod. p. 568.) leaves linear, with rather revolute smooth margins; scape rather pilose; spike simple, beset with glandular hairs; flowers imbricate, almost sessile; lip of corolla appendixed at the base. ụ. G. Native of Van Diemen's Land. The leaves are sometimes beset with a few denticulations.

Black-spiked Stylidium. Pl. 1 foot.

7 S. graminifolium (Swartz, in nov. act. scrut. berol. ex Willd. spec. 4. p. 146.) leaves linear, with denticulated edges; raceme subspicate, simple, and is as well the scape beset with glandular hairs; lip of corolla appendix at the base. ụ. G. Native of New South Wales and Van Diemen's Land. Ker. Bot. reg. t. 90. Ventenata major, Smith, exot. bot. 2. p. 13. t. 66. Candollea serrulata, Labill. in ann. mus. 6. p. 414. t. 64. f. 2. Flowers purplish red.


8 S. lineare (Swartz, l. c.) leaves compressed, filiform, 1-1/4 inch long, with denticulated margins; raceme simple; pedicels equal in length to the ovary; scape glabrous, filiform; lip of corolla appendix at the base. ụ. G. Native of New South Wales, about Port Jackson. R. Br. prod. p. 568. Ventenata minor, Smith, exot. bot. 2. p. 15. t. 67. Flowers purple or red.


9 S. setacea (Labill. nov. holl. 2. p. 65.) leaves setaceous, mucronate, an inch long; raceme simple, subspicate; scape quite glabrous; capsule clavate-oblong; lip of corolla inappendicate. ụ. G. Native of New Holland, on the south coast. Flowers red.

Setaceous-leaved Stylidium. Pl. 1 foot.

§ 3. Leaves radical, crowded, without scales. Scape leafless or with a few very small scattered leaves. Outer lip of calyx bipartit, inner one tripartit.

10 S. spinulosum (R. Br. prod. p. 569.) leaves linear, mucronate, attenuated at the base, with spinulous edges; scape clothed with glandular pubescence; raceme simple, rarely subcorymbose; throat of corolla crowned; lip inappendicate. ụ. G. Native of New Holland, on the south coast.

Spinulose-leaved Stylidium. Pl.

11 S. cespitum (R. Br. l. c.) leaves linear, glabrous, setaceous mucronate, with quite entire edges; raceme often divided; rachis and scape glabrous; throat of corolla naked; lip inappendicate. ụ. G. Native of New Holland, on the south coast.

Tufted Stylidium. Pl. tufted.

12 S. piliferum (R. Br. l. c.) leaves linear-lanceolate, glabrous, piliferous, with entire margins; raceme simple; rachis downy; scape glabrous; throat of corolla naked; lip inappendicate. ụ. G. Native of New Holland, on the south coast.

Piliferous Stylidium. Pl.

13 S. assimile (R. Br. l. c.) leaves narrow-spatulate, glabrous, thickish, with quite entire margins; raceme divided a little; rachis and scape downy; throat of corolla naked; lip inappendicate. ụ. G. Native of New Holland, on the south coast.

Similar Stylidium. Pl.

14 S. spatulatum (R. Br. l. c.) leaves spatulate, clothed with glandular pubescence on both surfaces, with quite entire edges; raceme many-flowered, and is as well as the radical scape glabrous; throat of corolla crowned; lip inappendicate. ụ. G. Native of New Holland, on the south coast.

Spatulate-leaved Stylidium. Pl. 3/4 to 1 foot.

15 S. glauccm (Labill. nov. holl. 2. p. 64. t. 217. R. Br. l. c.) leaves lanceolate-spatulate, clothed with glandular down on both surfaces, with quite entire edges; raceme few-flowered, subcorymbose, glabrous; scape furnished with a few leaves. ụ. G. Native of New Holland, on the south coast. Perhaps the plant of Labillardiere is referrible to the following.

Glaucescent Stylidium. Pl. 3/4 foot.

16 S. eriokhenum (R. Br. l. c.) leaves spatulate, setaceous mucronate, glabrous on both surfaces, but tomentose on the margins; raceme somewhat panicked, and is as well as the scape clothed with glandular down; root thick, woolly; throat of corolla naked; lip inappendicate. ụ. G. Native of New Holland, within the tropic.

Woolly-rooted Stylidium. Pl.

17 S. floribundum (R. Br. l. c.) leaves oblong, glabrous on both surfaces, with quite entire margins; scapes numerous, panicked, woolly from acute villi; throat of corolla naked; lip inappendicate. ụ. G. Native of New Holland, within the tropic.

Bunspike-flowered Stylidium. Pl.

18 S. jucxen (R. Br. l. c.) radical leaves linear, those of the scape minute, distant, and are as well as the bracteas adnate to the middle; calyce segments subulate, simple at the base; throat of corolla crowned by stipitate glands; lip inappendicate. ụ. G. Native of New Holland, on the south coast. Scape straight, glabrous.


19 S. violaceum (R. Br. l. c.) radical leaves narrow, linear, those of the scape, which is quite glabrous, small and adpressed, and are as well as the bracteas sessile; calyce segments gibbous at the base; throat of corolla crowned; lip inappendicate. ụ. G. Native of New Holland, on the south coast. Flowers violaceous.

Violaceus-flowered Stylidium. Pl.

§ 4. Leaves of scape or stem verticillate. Outer lip of calyx bipartit, inner one tripartit.

20 S. ilveum (R. Br. prod. p. 570.) scape inarticulate, glabrous; whorles of leaves 1-2 on each scape, besides some scattered leaves at the top; radical leaves linear; calyce segments rather gibbous at the base; throat of corolla crowned; lip inappendicate. ụ. G. Native of New Holland, on the south coast. Flowers yellow.

Yellow-flowered Stylidium. Pl.

21 S. ameneum (R. Br. prod. p. 570.) scape inarticulate, glabrous, furnished with one whorl of leaves beyond the middle, without any scattered leaves above the whorl; radical leaves scapate, acuminate; throat of corolla crowned; lip inappendicate. ụ. G. Native of New Holland, on the south coast. Flowers red?

Pleasant Stylidium. Pl.

22 S. articulatum (R. Br. l. c.) scape furnished with 2 joints, and 2 whorles of leaves; radical leaves spatulate, coriaceous; lip of corolla inappendicate. ụ. G. Native of New Holland, on the south coast.

Jointed-scape Stylidium. Pl. 3/4 foot.

23 S. diversifolium (R. Br. l. c.) scape straight, inarticulate, furnished with 3-4 whorles of filiform leaves; radical
leaves lanceolate; throat of corolla crowned; lip appendiculate.  721.  

\section{Stylidium.}  

\subsection{Diverse-leaved Stylidium.}  

\section*{§ 5. Stem shrubby. Leaves numerous, scattered.}  

\subsection{25 S. \textit{fructosum} (R. Br. l. c.) leaves narrow-linear, decurrent, glabrous; throat of corolla half crowned; lip appendiculate.}  

\subsection{G. Native of New Holland, on the south coast. Stylidium glandulosum, Salisbury, par. t. 77. Flowers pink.}  

\subsection{Shrubbery Stylidium.}  

\subsection{5. Tube of corolla very short. Lip of corolla stretched out.}  

\subsection{27 S. \textit{calcarea} (R. Br. l. c.) plant small; stem few-flowered; leaves oval; corolla with a naked throat, and rather toothed segments: lip inappendiculate.}  

\subsection{G. Native of New Holland, on the south coast.}  

\subsection{Sparted Stylidium.}  

\subsection{Sect. II. \textit{Andersonia.} J. G. Koenig, miss. ex R. Br. prod. p. 570. Capsules linear, or linear-lanceolate.}  

\subsection{§ 1. Scapigerous. Flowers spicate or corymbose, rarely almost solitary.}  

\subsection{28 S. \textit{capillare} (R. Br. l. c.) scape capillary, 1-2 inches high, 1-2-flowered; leaves radical oval; calyx glabrous, very acute; limb tripartite, with the middle segment bifid; throat of corolla crowned; lip inappendiculate.}  

\subsection{G. Native of New Holland, within the tropic.}  

\subsection{Capillary-scaped Stylidium.}  

\subsection{29 S. \textit{tenue} (R. Br. prod. p. 571.) scape capillary; spike few-flowered; leaves radical roundish; lips of calyx parted, glabrous; the 2 larger segments of the limb of the corolla semi-bifid; throat naked; lip inappendiculate.}  

\subsection{G. Native of New Holland, within the tropic.}  

\subsection{Slender Stylidium.}  

\subsection{30 S. \textit{rotundifolium} (R. Br. l. c.) scape capillary, 1-4-flowered; leaves radical roundish; lips of calyx undivided; 4 of the segments of the limb of the corolla nearly equal; throat naked.}  

\subsection{G. Native of New Holland, within the tropic.}  

\subsection{Round-leaved Stylidium.}  

\subsection{31 S. \textit{crassifolium} (R. Br. l. c.) scape terete, 1-2 feet high; spike racemose, elongated; leaves radical lanceolate, elongated.}  

\subsection{G. Native of New Holland, on the south coast.}  

\subsection{Thick-leaved Stylidium.}  

\subsection{32 S. \textit{corymbosum} (R. Br. l. c.) scape terete, 2-3 inches high, corymbiferous; leaves radical linear, ending each in a seaceous mucrone; lips of calyx parted.}  

\subsection{G. Native of New Holland, on the south coast.}  

\subsection{Corymbose-flowered Stylidium.}  

\subsection{§ 2. Cauloendent plants. Flowers alternate or solitary. Capsules terete-linear, the same breadth at the apex.}  

\subsection{33 S. \textit{inundatum} (R. Br. prod. p. 571.) stem branched, an inch and a half high, leafy below the division; leaves linear; larger segments of the limb of the corolla obvate: smaller ones linear; throat naked; lip inappendiculate, adnate to the tube at the base.}  

\subsection{G. Native of New Holland, on the south coast, in inundated places.}  

\subsection{Inundated Stylidium.}  

\subsection{34 S. \textit{despectum} (R. Br. l. c.) stem parted, an inch and a half high; branches few-flowered; leaves linear; segments of the limb linear-oblong, rather unequal; throat naked; lip inappendiculate, adnate to the tube at the base.}  

\subsection{G. Native of Van Diemen’s Land. Very like \textit{S. inundatum}.}  

\subsection{Despeded Stylidium.}  

\subsection{35 S. \textit{diffusum} (R. Br. l. c.) stem branched, diffuse, filiform; leaves linear; calicinal ones distant; the 2 larger segments of the limb bifid; throat crowned; lip inappendiculate, adnate to the tube at the base.}  

\subsection{G. Native of New Holland, on the south coast.}  

\subsection{Pygmy Stylidium.}  

\subsection{§ 3. Peduncles 1-flowered from the axis of the leaves or top of the scape or branches, which are crowded. Capsule nearly terete, not tapering at the top.}  

\subsection{37 S. \textit{repens} (R. Br. prod. p. 571.) stem creeping; branches ascending; leaves subulate, adnate; upper ones much crowded; throat of corolla crowned; lip inappendiculate.}  

\subsection{G. Native of New Holland, on the south coast.}  

\subsection{Creeping Stylidium.}  

\subsection{38 S. \textit{guttatum} (R. Br. l. c.) scape simple; flowers nearly sessile, in fascicles; bracteas foliaceous; throat of corolla crowned; lip appendiculate; leaves radical linear.}  

\subsection{G. Native of New Holland, on the south coast.}  

\subsection{Spotted-flowered Stylidium.}  

\subsection{39 S. \textit{pedunculatum} (R. Br. l. c.) scape simple; flowers umbellate; pedicels capillary; leaves of involucrum linear; segments of the limb of the corolla unequal; throat naked; lip inappendiculate; leaves radical lanceolate.}  

\subsection{G. Native of New Holland, within the tropic.}  

\subsection{Pedunculate Stylidium.}  

\subsection{§ 4. Racemes terminating the leafy stems. Capsule compressed, lanceolate or linear, constricted at the neck.}  

\subsection{40 S. \textit{breviscapum} (R. Br. prod. p. 572.) stem simple; leaves compressed, filiform; upper ones much crowded; raceme pedunculate, rather paniced, having the racis vilius; capsule lanceolate, equal-valved, downy.}  

\subsection{G. Native of New Holland, on the south coast.}  

\subsection{Short-scaled Stylidium.}  

\subsection{41 S. \textit{fasciculatum} (R. Br. l. c.) stem branched a little, glabrous; leaves linear; spikes pedunculate, subracemose, having the racis glabrous; capsule lanceolate, having both the cells seminiferous.}  

\subsection{G. Native of New Holland, on the south coast. Lindl. bot. reg. 1459.}  

\subsection{Flowers pink. (f. 123.)}  

\subsection{Fascicled-leaved Stylidium.}  

\subsection{Fl. Aug. Clt. 1830. Shrub 3 ft.}  

\subsection{42 S. \textit{falcatum} (R. Br. l. c.) stem nearly simple, and is as
well as the rachis downy; leaves linear; spike pedunculate, subracemose; capsule divaricate, lanceolate, with both the cells seminiferous, the superior one-half narrower than the other, and closed. ∆ G. Native of New Holland, on the south coast. Flowers pink?

**Falcate Stylidium.** Shrub ½ foot.  
43 S. adnatum (R. Br. l. c.) stem multiple; branches undivided; leaves linear; spike almost sessile, divided, with the divisions few-flowered; capsule linear, adnate at the base, having the neck shorter than the calyx: the superior cell empty, and very narrow. ∆ G. Native of New Holland, on the south coast. Lindl. bot. reg. t. 914. Flowers pink.  

44 S. proquinum (R. Br. l. c.) stem multiple; partial ones divided in an umbellate manner; leaves linear; spikes sessile, nearly simple; capsule adnate at the base, linear, having the neck equal in length to the calyx: the superior cell very narrow and empty. ∆ ? G. Native of New Holland, on the south coast. Flowers pink. Very nearly allied to the preceding.

**Allied Stylidium.** Pl. ½ foot.  

45 S. alpinoides (R. Br. prod. p. 572.) stem erect; leaves ovate; floral ones opposite; flowers axillary, sessile, solitary, bracteless. ∆ ? S. Native of New Holland, within the tropic.  

**Chickweed-like Stylidium.** Pl. ½ to ¾ foot?  

**Cult.** All the species of this genus are rare, elegant, and singular. The best soil for them is a mixture of sand, loam, and peat. Some of the species may be increased by parting at the root; but most of them by seed. Cuttings of the shrubby kinds strike root readily under a hand-glass either in sand or mould.

II. **Levenhookia** (named in memory of Anthony Van Leeuwenhoek, a celebrated micrographist, whose numerous works and observations on the structure of plants are still extant). R. Br. prod. p. 572.

**Lin. syst. Gymnandria, Diandria.** Calyx 5-parted, bilabiate. Limb of corolla 5-parted, irregular: the fifth segment or lip dissimilar to the others, arching, and longer than the column, articulated with the tube, moveable. Column erect, adnate to the side of the tube where the labellum is. Lobes of anthers one above the other, divaricate. Stigmas 2, capillary. Capsule 1-celled.—A small glabrous plant, with the habit of *Radiola willdegrana.* Leaves alternate, petiolate, crowded at the tops of the branches, intermixed with fascicles of flowers. The irritability of the joint of the lip is analogous to that of the column in *Stylidium,* and answers the same end, the protection of the sexual organs at the time of flowering. In *Levenhookia* the labellum is deflexed when the flower is expanded, but from its irritability when touched it rises up, and is applied with great force to the erect immovable column, which it covers by its spoon-shaped lamina.

1 L. fusilla (R. Br. prod. p. 578.) ∆ ? G. Native of New Holland, on the south coast.  

**Least Levenhookia.** Pl. 1 to 2 inches.  

**Cult.** See *Stylidium* above for culture and propagation.

III. **Forsteria** (in honour of John Reinald Forster, and his son George Forster, who both accompanied Captain Cook in his second voyage in the quality of naturalists). Lin. nov. act. ups. 3. t. 9. Swartz, in Schrad. journ. 1799. 1. t. 1, 2. f. 2.—Phyllachne, Forst. char. p. 58.

**Lin. syst. Gymnandra, Diandra.** Calyx superior, of 2-3 sepals, girded by an involucre composed of 2-3 leaves. Corolla tubularly campanulate, 5-6-parted. Column of genitils straight, bearing 2 2-celled anthers at top, which dehice transversely. Stigmas 2, roundish, covered by the revolute valves of the anthers. Capsule inferior, 1-celled, many-seeded. Placenta central, free.  

1 F. edifolia (Lin. nov. act. ups. 3. t. 9.) leaves imbricated, ovate-oblong, coriaceous, margined, smooth, recurved; peduncles terminal, solitary, elongated, 1-flowered; involucre short, spreading. ∆ G. Native of New Zealand.

**Edible-leaved Forsteria.** Shrub.  
2 F. muscicola (Swartz, in Schrad. journ. 1779. 1. t. 1, 2. f. 2.) leaves imbricated, erect, lanceolate, triquetrous, and micrornated at the apex, having the keel and margins serrulate; flowers terminal, solitary, sessile; involucre exceeding the calyx. ∆ G. Native of Terra del Fuego. Phyllachne uliginosa, Forst. char. p. 58. and Lin. fil. suppl.

**Moss-leaved Forsteria.** Shrub.  
**Cult.** See *Stylidium* above for culture and propagation.
Synopsis of the genera.

Tribe I.

GOODENIÆ. Seeds indefinite.

1. GOODENIA. Calyx superior; limb 5-parted (f. 124. a.), with equal segments. Anthers distinct. Style simple. Capsule 2-celled (rarely 4-celled), with a parallel dissepiment, which in some species is short. Seeds imbricated, compressed. Corolla bilabiata, rarely unilabiata (f. 124. c.).


4. EUThALES. Calyx inferior, with an unequal 5-cleft limb. Corolla adhering to the tube below the ovary, cleft on the upper side, with a bilabiata limb. Style undivided. Indusium of stigma bilabiata. Capsule 4-valved, 2-celled at the base. Seeds imbricated, compressed.

5. VELLEIA. Calyx inferior, of 3-5 unequal leaves. Corolla having the base of the tube adnate to the ovary, and cleft on the upper side at the apex; limb bilabiata. Anthers distinct. Style undivided. Gland epigynous between the 2 anterior filaments. Capsule 2-celled at the base; valves bipartite. Seeds imbricated, compressed.

6. LECHENAUTIA. Calyx superior (f. 125. a.). Corolla with the tube cleft on the upper side (f. 125. b.). Anthers at first cohering. Stigma obsolete, bilabiata (f. 125. d.), in the bottom of the indusium. Capsule prismatic, 2 celled, 4-valved. Seeds cubical or nucamentaceous.

7. ANTHOTIUM. Calyx superior, 5-parted. Corolla having the tube cleft on the upper side, and the limb bilabiata; segments of the upper lip auricled on the inner side. Anthers cohering. Ovary 2-celled, many-seeded. Indusium of stigma contrary to the lips of the corolla.

Tribe II.

SCEVÖLÆ. Seeds definite. Drupe inferior.

8. SCEVOLA. Corolla cleft on the upper side, exceeding the genitils; limb unilabiata, secund, 5-parted, with equal winged segments. Anthers free. Indusium of stigma ciliated.


Tribe III.

BRUNONIÆ. Utriculus superior, 1-seeded.


Tribe IV.

CAMPANIIÆ. Corolla campanulate, regular. Capsule 3-4-celled, many-seeded.


Tribe I.

GOODENIÆ (this tribe contains plants agreeing with Goodenia, in the capsules being many-seeded). Capsules 2-celled, containing an indefinite number of seeds.

I. GOODENIA (named in honour of Dr. Goodenough, bishop of Carlisle, a lover of natural history, and author of a Monograph of the genus Carex, published in the Linnean Transactions). Smith, in Lin. trans. 2. p. 347. Labill. nov. holl. 1. p. 52. t. 75. R. Br. prod. p. 575. LIN. SYST. PENTÁNTRIA, MONOGYMNIA. Calyx superior, with a 5-parted limb (f. 124. a.) and equal segments. Anthers distinct. Style simple. Capsule 2-celled (rarely 4-celled), with a parallel dissepiment, which is sometimes short. Seeds imbricated, compressed._—Herbs, rarely subshrubs, usually caulescent. Leaves alternate, entire, toothed or cut. Flowers...
ayilarly or terminal; pedicels bibracteate or bracteless. Corollas usually yellow, although sometimes blue and purplish, bilabiate, rarely unilabiate; segments winged, rarely wingless; wings induplicate in aestivation; tube sometimes furnished with a little nectariferous sack, which is opposite to the fissure of the corolla, adnate to the ovary. Anthers cohering before expansion, beardless, rarely bearded at the apex. Capsule variable in form, with the top for the most part superior; valves entire or bipartite.

Sect. I. Ochirosynthus (from oχρος, ochros, yellow, and ανθος, anthos, a flower; colour of flowers). Corolla bilabiate, yellow; segments winged. Capsule 2-celled, or almost 1-celled from the dissepiment being short. Stigma parallel with the lips of the corolla.

§ 1. Peduncles terminal, spicate or panicled; pedicels bibracteate.

1 G. bellidifolia (Smith, in Lin. trans. 2. p. 349.) stem naked; spike nearly simple, downy; corolla clothed with simple down outside; radical leaves flat, lanceolate-spatulate, toothed or cut. 2. G. Native of New South Wales, about Port Jackson. R. Br. prod. p. 573. Corolla yellow.


2 G. stellifer (R. Br. prod. p. 575.) stem nearly naked; spike almost simple, downy; corolla clothed with simple hairs and stellate down outside; valves of capsule bipartite; radical leaves fleshy, semi-terete or linear, glabrous, a little toothed at the apex. 2. G. Native of New South Wales, about Port Jackson. Corolla yellow.

Stellate-haired Goodenia. Pl. ½ to ¾ foot.

3 G. paniculata (Smith, in Lin. trans. 2. p. 348. R. Br. prod. p. 575.) stem few-leaved; panicle almost simple, downy; ovary bare with glandular and simple hairs; radical leaves long-lanceolate, a little toothed or cut. 2. G. Native of New South Wales, about Port Jackson. Cav. icon. 6. p. 5. t. 507. Corollas yellow.


4 G. humilis (R. Br. prod. p. 575.) stem few-leaved; panicle simple, downy; ovary bare with acute hairs; radical leaves long-lanceolate, a little toothed. 2. G. Native of New Holland, on the south coast. Corollas yellow.

Humble Goodenia. Pl. ½ foot.

5 G. graciles (R. Br. l. e.) plant glabrous; stem few-leaved; panicule simple; ovaries glabrous; corolla clothed with glandular down outside; radical leaves linear-lanceolate, elongated, thickish. 2. G. Native of New Holland, within the tropic. Lodg. bot. cab. t. 1032. Corollas yellow.


6 G. decurrens (R. Br. l. e.) plant quite glabrous; stem many-leaved; spike racemose, divided a little at the base; corolla downy outside; caulline leaves oblong, toothed, decurrent. 2. G. Native of New Holland, about Port Jackson. Corollas yellow.

Decurrent-leaved Goodenia. Pl. 1 foot.

§ 2. Peduncles axillary, trifid or simple; pedicels bibracteate.

7 G. acuminata (R. Br. prod. p. 575.) sufruticosus, erect, glabrous, painted; peduncles trifid or trichotomous; leaves ovate, acuminate, dentately serrated, with beardless axils; calycine segments flat, one-half shorter than the capsule, which is prismatic; seeds disposed in 2 rows. 2. G. Native of New South Wales, about Port Jackson. Corolla yellow. Like the following, and probably only a variety of it.

Acutinately-leaved Goodenia. Pl. 1 to 2 feet.

8 G. ova (Smith, in Lin. trans. 2. p. 347. R. Br. l. c.) suffruticosus, erect, glabrous, sometimes painted; peduncles trifid or trichotomous; leaves ovate, acute, dentately serrated, bearded in the axils; calycine segments subulate filiform, a little shorter than the capsule, which is linear; seeds disposed in one series. 2. G. Native of New Holland, about Port Jackson and the south coast, as well as of Van Diemen’s Land. Andr. bot. rep. t. 68. Vent. cels. t. 3. and in mem. de l’institut. sc. phys. 2. p. 391. pl. 10. Cav. icon. 6. p. 4. t. 506. Corollas yellow.


9 G. varia (R. Br. prod. p. 576.) sufruticosus, glabrous; peduncles trifid or simple; leaves ovate and obtuse, or ovate and acutish, toothed, coriaceous, with naked axils; calycine segments shorter than the stamens; corollas and styles glabrous; capsule ovate. 2. G. Native of New Holland, on the south coast. Corollas yellow.

Var. a; leaves ovate and oval, a little toothed, attenuated at the base; branches flexuous: stems diffuse.

Var. b; leaves roundish, almost sessile, toothed; peduncles usually 1-flowered; stems depressed.

Variable Goodenia. Shrub ½ to 2 feet.

10 G. grandiflora (Sims, bot. mag. 890. R. Br. prod. 576.) plant herbaceous, erect, clothed with glandular pubescence; peduncles triform, trichotomous or simple; branches angularly striated; lower leaves lyrate: rameal ones rather ovate, acute; style longitudinally woolly. 2. G. Native of New South Wales, about Port Jackson. Corollas yellow.


11 G. heterophylla (Smith, in Lin. trans. 2. p. 349. R. Br. prod. p. 576.) plant herbaceous, erectish, downy, intermixed with glandless hairs; leaves ovate, cut or lobed; bracteas one-half shorter than the upper half of the one-flowered peduncle; style glabrous. 2. G. Native of New South Wales, about Port Jackson. Cav. icon. 6. p. 6. t. 508. Corollas pale red.


12 G. rotundifolia (R. Br. prod. 576.) plant herbaceous, erectish; leaves roundish, deeply serrated, membranous; bracteas longer than the upper half of the one-flowered peduncle; styles glabrous; capsules ovate. 2. G. Native of New South Wales, about Port Jackson; and of New Holland, within the tropic. Corollas yellow.

Var. a; plant quite glabrous, erectish.

Var. b; plant downy; hairs simple, sometimes diffuse.

Round-leaved Goodenia. Pl. 1 foot.

13 G. barbata (R. Br. prod. p. 576.) plant herbaceous, erect, clothed with glandular down, scabrous; leaves lanceolate-linear, entire; peduncles 1-flowered; throat of corolla bearded; styles longitudinally hairy; capsule 2-celled, 2-seeded. 2. G. Native of New South Wales, about Port Jackson, and of Van Diemen’s Land. Corollas yellow.

Bearded Goodenia. Pl. 1 foot.

14 G. lanata (R. Br. prod. p. 577.) plant herbaceous, downy, glabrous, almost sternless; branches prostrate; leaves ovate or oval, obtuse, a little toothed, hairy; young leaves and ovaria woolly; peduncles scape-formed; corolline segments ciliatted on the margins. 2. G. Native of Van Diemen’s Land. Corollas yellow.

Woolly Goodenia. Pl. prostrate.

15 G. geniculata (R. Br. l. c.) plant herbaceous, downy,
Goodenia. 

Native flowers c.)

3. foot.

Radical cauline

Native leaves peduncles

Peduncles

Native flowers G.

Peduncles c.)

47. c.)

If and radical

stems

Radical peduncles few

foot.

Late.

hort.

bearing

minal, late

leaves

flexed peduncles

tube flowers

G. peduncles c.)

47. c.)

If and radical

axillary stems

radical peduncles few

foot.

Hispid

Soft

Goodenia. PL 1 foot.

19 G. elongata (Labill. nov. holl. 1. p. 52, t. 75.) pilose; peduncles solitary, axillary and nearly terminal, elongated, reflexed or nearly entire, attenuated at the base. 


Elongated-peduncled Goodenia. PL 1 foot.

20 G. hispidida (R. Br. prod. 577.) plant erect, beset with strigose hairs; caule leaves sessile, elongated, lanceolate, a little toothed; peduncles solitary, axillary, elongated, erect while bearing the fruit; calyces hispid. 

2. G. Native of New Holland, within the tropic. Corollas yellow.

Hispid Goodenia. PL 1 foot.

21 G. coronopifolia (R. Br. l. c.) glabrous; leaves linear; radical ones pinnatifidly toothed; caule ones quite entire, and the seminal ones permanent; peduncles almost solitary, alternate, erect while bearing the fruit. 

2. G. Native of New Holland, within the tropic. Corollas yellow.

Buck-horn-leaved Goodenia. PL

22 G. tenella (R. Br. l. c.) plant rather downy, intermixed with a few adpressed hairs; stem simple or wanting; radical leaves flat, lanceolate or spatulate; peduncles radical or terminal, elongated, erect while bearing the fruit. 


Slender Goodenia. PL 1/4 to 1/2 foot.

23 G. filiformis (R. Br. prod. p. 578.) plant smoothish; stem simple; radical leaves filiform: caule leaves smaller; peduncles terminal, subumbel late. 

2. G. Native of New Holland, on the South Coast. Corollas yellow.

Filiform-leaved Goodenia. PL 1/4 foot.

FIG. 124.

Sect. II. Tetrathylax (from terpae, tetras, four-fold; and

θυλακ, thylax, a cell: capsule 4-celled). Corolla bilabiata, yellow, having the segments winged. Capsule 4-celled.

24 G. quadrilocularis (R. Br. prod. p. 578.) plant glabrous, erect; leaves nearly oval, toothed; flowers spicate or axillary. 

2. G. Native of New Holland, on the South Coast.

Four-celled-fruited Goodenia. PL

Sect. III. Porphyranthus (from πορφυρος, porphyros, purple; and ανθος, anthos, a flower; colour of flowers). Corolla bilabiata, purple or blue, having the segments winged.

Capsule 2-celled, or half 2-celled. Stigma parallel with the lips of the corolla.

25 G. purpurea (R. Br. l. c.) plant glabrous; panicle effuse; stem naked; leaves radical, elongated-lanceolate. 

2. G. Native of New Holland, within the tropic. Corolla purple.

Purple-flowered Goodenia. PL 1/2 foot.

26 G. pterigospérima (R. Br. l. c.) plant glabrous; stem almost simple, few-flowered; flowers alternate; radical leaves linear, a little toothed: caly whole smaller, remote; calyx bluntish, and is, as well as the ovary, glabrous. 

2. G. Native of New Holland, on the South Coast. Corollas blue or purple.

Wing-seeded Goodenia. PL 1/2 foot.

27 G. cérunclea (R. Br. l. c.) plant glabrous; partial stems or branches nearly simple, few-flowered; radical leaves linear, a litt le toothed: caly whole smaller, remote; calyx bluntish, and is, as well as the ovary, glabrous. 

2. G. Native of New Holland, on the South Coast. Corollas blue or purple.

Hoary Goodenia. PL 1/2 foot.

Sect. IV. Monochila (from μονος, monos, alone; and χειλος, cheilos, a lip, in reference to the unilabiate corolla). Corollas unilabiate, having the segments winged. Stigma 2-lobed, having the indusium ciliated, and contrary to the lip of the corolla.

29 G. scapigerà (R. Br. l. c.) plant glabrous, erect; leaves toothed; spike terminal, pedunculate; segments of the calyx subulate, longer than the ovary, which is tubuliferous on one side. 

2. G. Native of New Holland on the South Coast.

Var. a; common peduncle elongated, scape-formed; leaves linear-lanceolate, elongated.

Var. β; common peduncle not elongated; leaves oval-lanceolate.

Scape-bearing Goodenia. PL 1/2 foot.

30 G. viscidà (R. Br. l. c.) plant glabrous, painted, erect; leaves lanceolate, toothed; peduncles axillary, 1-flowered, very short; stigma bifid. 

2. G. Native of New Holland, on the South Coast.

Viscid Goodenia. PL

Sect. V. Sellérâa (named after Natali Sellier, a Spanish artist). Selléria, Cav. icon. 5. p. 49. t. 47. f. 2. Corolla subumbilicate, purplish, having the segments wingless, and valvate in aestivation.


31 G. réfent (Labill. nov. holl. 1. p. 53. t. 76.) plant glabrous, creeping; leaves lanceolate, fleshy. 

2. G. Native of New Holland, on the South Coast, and about Port Jackson; and of Van Diemen's Land; and of Chili, about Talcahuana, in humid sandy places by the sea shore. Selléria radicans, Cav. icon. 5.
GOODENOVI. I. GOODENIA. II. DISTYLIS.

p. 49. t. 473. f. 2. G. radicans, Pers. ench. 1. p. 195. Lysimínia særpons, Kunz, Poeppig, pl. chil. 3. p. 34. no. 103. Perhaps a proper genus. Flowers variegated with white and blue. Stem woody, glabrous.

Creeping Goodenia. Pl. creeping.


32 fulvum (R. Br. prod. p. 579.) plant creeping, downy; leaves ovate, membranous: upper ones crowded; peduncles 1-flowered, from the axils of the upper leaves. 2. G. Native of New Holland, within the tropic. Corolla purplish. Perhaps the corolla is unilabiate, or probably nearly regular. Dwarf Goodenia. Pl. creeping.

Cult. All the species of this genus are worth cultivating for ornament. They grow freely in a mixture of sand, loam, and peat; and young cuttings of most of the species strike root freely in the same kind of soil, under a hand-glass; and all may be raised from seed, which ripen plentifully.

II. DISTYLIS (from δίς, dis, twice, and στυλός, stylus, a style; in reference to the style being bipartite). Gaud. in Freye. voy. pt. bot. p. 45. t. 50.

Lin. syst. Pentândria, Monogyónia. Calyx adnate to the ovary; limb free, 5-parted. Corolla deciduous, with the tube cleft behind, 5-parted, spreading, somewhat bilabiate; segments with winged margins. Stamens 5, distinct. Style bipartite. Indusium of stigma membranous, cup-shaped, and ciliated. Capsule crowned by the permanent calyx, semi-bilocular in consequence of the dissepiment being short; valves parallel. Seeds imbricate, compressed, orbicular, girdled by a membranous border.—An annual hairy plant, with almost simple stems. Leaves alternate, toothed. Flowers axillary, solitary, on long peduncles, racemose, bracteate, yellow.

1 D. Berardiána (Gaud. l. c.). O. G. Native of New Holland, on the Western Coast, in Sharks' Bay. Goodenia Berardiána, Gaud.

Berard's Distylis. Pl. ½ foot.

Cult. Rear the seeds in a frame in the spring, and about the end of May put the plants out into the open border in a warm situation.

III. CALOGYNE (from καλός, kalos, beautiful, and γυνή, gyné, a female; in reference to the stigma). R. Br. prod. p. 579.

Lin. syst. Pentándria, Monogyónia. Calyx superior; limb 5-parted, with equal segments. Corolla bilabiate. Anthers distinct. Style trifid. Gland epignous between the 2 lower filaments. Capsule subunilocular from the dissepiment being short. Seeds imbricate, compressed.—A pilose annual herb, with the habit of Goodenia, and when dry having an odor like that of vernal grass. Leaves toothed or cut; floral ones auriculated at the base. Peduncles axillary, 1-flowered, bracteate, reflexed while bearing the fruit.—This genus is separated from Goodenia alone from the trifid style; each division being furnished with an indusiate stigma.

1 G. pilosa (R. Br. l. c.). O. G. Native of New Holland, within the tropic.

Pilose Calogynae. Pl. ½ foot.

Cult. Sow the seeds of this plant in spring, in a pot filled with a mixture of sand, loam, and peat, and place it in a hot-bed; and when the plants are of sufficient size, plant them separately into other pots.

IV. EUThA'LES (from ἐυ, eu, well, and ἦλως, thallo, to sprout). R. Br. prod. p. 579.

III. CALOGYNE. IV. EUThA'LES. V. VELLEIA.

Lin. syst. Velleiá, Monogyónia. Calyx inferior, tubular, 5-cleft, unequal. Corolla adhering to the tube beneath the ovary, cleft on one side at the apex; limb bilabiate. Anthers distinct. Style undivided. Indusium of stigma bilabiate. Capsule 4-valved, 2-celled at the base. Seeds imbricated, compressed.—A stemless herb, with the habit and inflorescence of Velléia. The corolla in this genus and Velléia is semi-superior, and joined with the calyx at the base. The genus is intermediate between Goodenia and Velléia, but differs from them in the calyx being tubular.


Cult. A mixture of loam, peat, and sand is the best soil for this plant; and it must be but sparingly watered, as it is very delicate, and apt to damp off. It is increased, but sparingly, by dividing, and by seed.


Lin. syst. Pentándria, Monogyónia. Calyx inferior, 3-5-leaved, unequal. Corolla having the tube joined with the ovary at the base, and cleft on the upper side at the apex; limb bilabiate. Anthers distinct. Style undivided. Gland epignous between the 2 anterior filaments. Capsule 2-celled at the base; valves bipartite. Seeds imbricate, compressed.—Stemless herbs. Leaves radical, subspatulate, usually toothed, but sometimes lyrate. Scapes dichotomous, with the most of the axes floriferous. Bracteas opposite, foliaceous, sometimes large, and sometimes connate. Upper segment of the calyx broad, and often toothed at the base. Corolla yellow, adhering at the base, beneath the gibbosity or spur. Style somewhat tetragonal. Indusium of stigma large.

Sect. I. Menoceras (from μεν, meno, to abide; and κεφαλή, keras, a horn; in reference to the permanent spur). R. Br. prod. p. 580. Calyx 5-leaved. Corolla spurred at the base: spur permanent.

1 V. PARADOXÁ (R. Br. prod. p. 580.) plant downy; leaves bluntly toothed. O. G. Native of New South Wales, about Port Jackson; on the south coast of New Holland; and of Van Diemen's Land. Lind. bot. reg. 971. Corolla yellow.


2 V. ARVI'TA (R. Br. l. c.) plant glabrous; leaves sharply toothed. O. G. Native of New Holland, on the south coast. Corolla yellow.

Sharp-toothed-leaved Velleia. Pl. ½ foot.

Sect. II. Velle'ia-Velle'ia (this section is supposed to contain the true species of the genus). R. Br. prod. p. 580. Calyx 3-leaved. Corolla rather gibbous on one side at the base.

3 V. LYRÁTA (R. Br. l. c.) glabrous; bracteas of the forks distinct; leaves lyrate or deeply toothed at the base; segments of the calyx ovate- orbicular. O. G. Native of New South Wales, about Port Jackson. Ker. bot. reg. 551. Corollas yellow.


4 V. SPATULÁTA (R. Br. l. c.) glabrous; bracteas of the forks distinct; leaves spatulate, almost toothless, but quite entire at the base, with the axils bearded. O. G. Native of New South Wales, about Port Jackson; and of New Holland, within the tropic. Juss. ann. mus. 18. t. 1. Corolla yellow.

V. Velleia. VI. Lechenaultia. VII. Anthotium. VIII. Scaevola.

5. V. Fure'sca (R. Br. prod. p. 581.) downy; bracteas of the forks distinct; leaves toothed; segments of the calyx oblong-ovate, acute. 4. G. Native of New Holland, within the tropic. Corolla yellow.

Downy Velleia. Pl. 3(1.) foot.

6. V. Perfoliata (R. Br. l. c.) glabrous; bracteas of the forks large, connate, roundish, toothed. 4. G. Native of New South Wales, about Port Jackson. Corolla yellow.

Perfoliate-bracted Velleia. Pl. 3(1.) foot. Cult. The soil recommended for the two preceding genera is also suited for the species of Velleia; and they may be increased by seeds, which are sometimes produced in this country.


LIN. SYST. Pentandra, Monogynia. Calyx superior (f. 125. a). Tube of corolla cleft on one side (f. 125. b.); limb bilabiata (f. 125. i.). Anthers cohering (f. 125. c.) at the time the flower is expanded. Grains of pollen compound. Stigma obsolete, in the bottom of the bilabiata indusium (f. 125. f.). Capsule prismatic, 2-celled, 4-valved; opposite valves septiferous in the middle. Seeds cubic or cylindrical, loculicidate. — Small glabrous heath-like shrubs, rarely herbs. Leaves narrow, quite entire. Flowers axillary or terminal, almost solitary. The pollen in all the species is composed of 4 combined spores.


2. L. Oblata (Sweet, fl. austral. t. 46.) flowers axillary and terminal, solitary, bracteas, rather drooping; corollas bilabiata, downy outside; upper lip 2-lobed; lower one tripartite: segments oblate; filaments clothed with downy tomentum. 4. G. Native of New Holland, on the south coast. L. formosa, Lindl. bot. reg. t. 916. Hook. bot. mag. t. 2600. L. Baxtéri, G. Don, in Loud. Hort. Brit. p. 79. Flowers copper-coloured. (f. 125.)

Oblate Lechenaultia. Fl. April, Aug. Ch. 1824. Shrub 1 foot.

3. L. Tubiflora (R. Br. prod. 581.) flowers nearly terminal, solitary, almost sessile; corolla tubular, curved, with a conning limb; leaves subulate, ending each in a pellucid point. 4. G. Native of New Holland, on the south coast.

Tubeflowered Lechenaultia. Shrub 1 foot.

4. L. Expansa (R. Br. l. c.) flowers axillary, crowded into a few-flowered corymb; pedicels bibracteate; limb of corolla unilabiata, with ciliated segments. 4. G. Native of New Holland, on the south coast.

Expanded-flowered Lechenaultia. Shrub 1 foot.


5. L. Filiformis (R. Br. l. c.) leaves alternate, compressed, filiform. 4. G. Native of New Holland, within the tropic.

Filiform-leaved Lechenaultia. Pl. Cult. The species of Lechenaultia are elegant plants while in blossom. They thrive best in a mixture of furry loam, peat, and sand; and young cuttings strike root freely in the same kind of mould under a hand or bell-glass.

VII. ANTHOTIUM (from ἀνθός, anthos, a flower, and ove ὠς, ows otos, an ear; in reference to the segments of the superior lip of the corolla being auriculated on the inner margin). R. Br. prod. p. 582.


1. A. Hymalle (R. Br. l. c.) 4. G. Native of New Holland, on the south coast. There are two varieties of this plant, one twice the size of the other in all its parts.

Humble Anthotium. Pl. 3(1.) foot. Cult. See Velleia, above, for culture and propagation.

Tribe II.

Scaevoleae (this tribe contains plants agreeing with Scaevola in important characters). R. Br. prod. p. 582. Seeds definite. Drupes or nut inferior.


LIN. SYST. Pentandra, Monogynia. Corolla cleft longitudinally on the upper side; limb 5-parted, all to one side; segments winged, about equal in size and shape. Anthers free. Indusium of stigma ciliate.—Shrubs and herbs very variable in habit. Down on hairs simple. Leaves alternate, rarely opposite, hardly divided, often toothed. Inflorescence axillary or disposed in a leafy spike. Ovariis bibracteate, usually 2-celled (rarely 4-celled); cells 1-seeded; sometimes 1-celled and 1-seeded. Calyx 5-cleft, equal, sometimes obsolete. Corolla white or blue, rarely yellow, deciduous, for the most part downy outside; wings of the segments often fringed at the base, rarely longitudinally; the fringes for the most part floccosely branched at the top, and appears capitata to the naked eye; tube villous inside, and the throat bent with ramenate, which are disposed in continuous lines, with the fringes of the segments. Stamens flaccid after the dehiscence of the corolla, and falling off with it. Anthers for the most part beardless, but sometimes bearded at the apex.—This genus is divided into natural groups below. Those species with 1-celled ovaria will probably constitute a separate genus from those with 2-celled ovaria. —S. spinascens has a very different habit from the other species, and is probably a distinct genus, from the bracteas being deciduous, and the wings of the segments of the corolla being fringed lengthwise, but the mature fruit is not known.

SECT. I. Sarcocea (from sarco, sarx, sarks, flesh; and καρπος, karpos, a fruit; in reference to the baccate fruit of the species). Drupes baccate, 2-celled. Pedicels axillary, dichotomous, bearing flowers in the forks, rarely 1-flowered. Leaves alternate, bearded in the axils. Shrubs, natives of the sea shore.

1. S. Kenfigi (Vahl, symb. 2. p. 56.) cymes glabrous; flowers
pedicellate in the forks of the peduncles; calyx 5-parted, equal in length to the ovarium; leaves obovate, subepend at the apex, quite glabrous on both surfaces, as well as the branches. .startTime

Koenigii, Lamark, aus. p. 108. Very like the two preceding species, but differs in being tomentose. There are varieties of this with more or less tomentose entire and repandly toothed leaves, and with the style either glabrous or longitudinally villous.

Silky Scaevola. Shrub 2 to 3 feet.

8 S. CHAMMISONIA (Gaud. in Freyc. voy. pt. bot. p. 461. t. 82.) shrubby, erect, glabrous; leaves oblong, acuminated at both ends, sharply denticulated, with bearded axes; peduncles axillary, dichotomous, about equal in length to the leaves, with sessile flowers in the forks; calyx short, 5-toothed; corolla downy; drupe 2-celled. .startTime

9 S. TEMENTOSA (Gaud. in Freyc. voy. pt. bot. p. 460. t. 81.) shrubby, erect, clothed with brownish stellate tomentum; leaves soft, somewhat rhomboid-ovate, obtuse, minutely toothed; flowers axillary, solitary, pedunculate; calyx short, 5-toothed; corollas downy; bracteoles unilataral, half connate, quite entire; fruit 2-seeded. .startTime

Tomentose Scaevola. Shrub 2 to 4 feet.

10 S. MENZIESI (Cham. in Linnae. 7. p. 227.) shrubby, erect; leaves obovate or lanceolate, obtuse or acutish, quite entire, or a little serrated, narrowed into the petiole, bearded at the axils, rather fleshy, downy beneath or glabrous; peduncles shorter than the leaves, bearing 3 flowers at the apex, and often only one; bracteas linear; flowers sessile; calyces teeth short, ciliated; corolla pilose outside or glabrous, villous inside, having the segments hardly winged; style villous; drupe olive-formed, 1-2-seeded. startTime

Menzie's Scaevola. Shrub 2 to 3 feet.

11 S. GLabra (Hook. et Arn. in Beech. voy. pt. bot. p. 89.) shrubby, erect, glabrous; leaves lanceolate-acuminate at both ends, entire, with a few almost obsolete teeth on the margins, narrowed into the short petiole, toothed at the base, with bearded axes; peduncles axillary, equal in length to the leaves or exceeding them, 5-8-flowered, cymosestichotonous; bracteas linear; flowers sessile; calyces teeth short, ciliated; corolla glabrous on the outside, and inside of the tube rather villous; segments winged; style villous; drupe olive-formed, containing one 2-seeded pyrene. .startTime

Glabrous Scaevola. Shrub 2 to 3 feet.

12 S. MONTANA (Labb. sert. cal. p. 41. t. 43.) cymes and corollas tomentose; flowers sessile in the forks of the corymb; leaves obovate-oblong, glabrous, rather coriaceous.  startTime

Mount St. Scaevola. Leaves entire, undulated or crenulated, with silky hairy axes.

Mountain Scaevola. Shrub 4 to 6 feet.

13 S. oppositifolia (Roxb. fl. ind. 2. p. 148.) leaves opposite, on short petioles, elliptic, entire, smooth; peduncles axillary, few-flowered.  startTime

Opposite-leaved Scaevola. Shrub.

Sect. II. Xerocarpa (from ἕξορος, xeros, dry; and καρπος, karpos, a fruit; in reference to the dry fruit of the species). Drupe usually dry, 1-4-celled. Bracteas foliaceous, lateral, permanent. Spikes terminal, but sometimes axillary.

§ 1. Leaves all or for the most part toothed or cut.

14 S. ATTENUATA (R. Br. prod. p. 583.) shrubby, erect; pilose; leaves lanceolate, toothed; bracteas stretched, quite entire; corolla hairy outside, with the margins naked above; styles very villous.  startTime

Attenuated-leaved Scaevola. Shrub 2 to 3 feet.

15 S. NITIDA (R. Br. prod. p. 584.) shrubby, erect, quite...
GOODENIÆ.

glabrous; leaves elliptic, sharply toothed; bracteas toothed; corollas glabrous outside, with the margins villous above; styles rather villous. 7. G. Native of New Holland, on the south coast.

Shining-leaved Scevolæ. Shrub 1 to 2 feet.

16 S. crassifolia (Labill. nov. holl. 1. p. 56. t. 79.) suffruticose, ascending, quite glabrous; leaves elliptic, sharply toothed, obovate-lanceolate, and are as well as the branches often painted; bracteas entire; indium of stigma with a naked border. 7. G. Native of New Holland, on the south coast. Flowers white.


17 S. globulifera (Labill. nov. holl. 1. p. 55. t. 78.) suffruticose, erect, glabrous? leaves lanceolate, few-toothed; bracteas entire; ovarium 4-celled. 7. G. Native of New Holland, on the south coast. The fringe at the base of the branches of the segments of the corolla, and the ramenta in the throat of the corolla, are floccosely branched at the tops; therefore they appear globular at the apex, hence the name.

Glabule-bearing Scevolæ. Shrub 1 to 2 feet.

18 S. ovalifolia (R. Br. prod. p. 584.) suffruticose, ascending; leaves oval or elliptic, toothed; bracteas rhomboid-elliptic, very acute, nearly entire; calyx obsolete; style bearded at the top on one side. 7. G. Native of New Holland, within the tropic.

Var. a. cinerascens (R. Br. l. c.) clothed with fine cinereous tomentum; corolla downy outside.

Var. B. glabra (R. Br. l. c.) glabrous; corolla beardless on the outside.

Oval-leaved Scevolæ. Shrub 1 to 2 feet.

19 S. ëzëula (R. Br. l. c.) plant herbaceous, erect; leaves cuneated or obovate, toothed, smoothish; spike simple; bracteas lanceolate, nearly entire; calyx lobed; style glabrous, below, furnished on one side at the apex with a straight coloured beard, which is equal in length to the indium of the stigma; ovarium 2-celled. 7. G. Native of New Holland, on the south coast. It agrees with the figure given of the next species, except in the lower bracteas of the spikes being many-flowered, while in the present plant they are always 1-flowered.

Emulating Scevolæ. Pl. 1 foot.

20 S. cuneiformis (Labill. nov. holl. 1. p. 56. t. 80.) plant herbaceous, erect? rather pilose; leaves cuneated, toothed; spike divided at bottom into 2-3-flowered spikelets; bracteas lanceolate, entire; calyx lobed; style glabrous below, but furnished with a straight beard on one side at the apex, which is equal in length to the indium of the stigma. 7. G. Native of Van Diemen's Land. Flowers blue?


21 S. sinuata (R. Br. prod. p. 584.) plant herbaceous, diffuse, downy, with the hairs adpressed; leaves obovate or cuneated, toothed or sinuated; spike compound; spikelets few-flowered; bracteas elliptic, entire; calyx lobed; style glabrous below, but furnished at the apex on one side with a straight, coloured beard, which exceeds the indium of the stigma. 7. G. Native of New Holland, on the south coast. An intermediate plant between S. ëzëula and S. cuneiformis.

Sinuated-leaved Scevolæ. Pl. diffuse.

22 S. hümëlis (R. Br. prod. p. 585.) plant herbaceous, ascending or diffuse, downy; leaves sharply toothed; lower ones obovate-cuneated: rameal ones lanceolate; spike simple; bracteas linear-lanceolate, a little toothed; calyx lobed; style furnished with a straight coloured beard on one side at top, which is equal in length to the indium of the stigma; ovarium 2-celled. 7. G. Native of New Holland, on the south coast.

Humble Scevolæ. Pl. ascending.

23 S. microcarpa (Cav. ñon. 6. p. 6. t. 509.) plant herbaceous. Vol. III.

VIII. SCEVOLA.

ceous, downy; leaves cuneated, oval, or orbicular, toothed, attenuated at the base; spike simple; bracteas toothed; calyx lobed; tube of corolla bearded inside; hairs in the throat of the corolla, acute, and capitate; style longitudinally villous; ovarium 1-celled, 2-seeded. 7. G. Native of New South Wales, about Port Jackson; and of Van Diemen's Land. R. Br. prod. p. 585. Goodenia albida, Smith, in Lin. trans. 2. p. 347. Goodenia levegáta, Curt. bot. mag. 287. Wildl. spee. 1. p. 954. Flowers purple, with a white throat. This is a very polymorphous species, sometimes diffuse, and sometimes erect, varying much in the consistence and form of the leaves.


24 S. palüha (R. Br. prod. l. c.) plant herbaceous, diffuse, downy; leaves toothed, attenuated at the base, cuneate or lanceolate; spike simple; bracteas usually toothed; calyx lobed; tube of corolla almost naked inside; style glabrous; ovarium 1-celled, 2-seeded. 7. G. Native of New Holland, on the south coast. Like the preceding, but smaller in all its parts.

Pale-flowered Scevolæ. Pl. diffuse.

§ 2. Leaves all or for the most part quite entire.

25 S. suaveolens (R. Br. prod. p. 585.) plant herbaceous, diffuse, downy; leaves spatulate, fleshy, with bearded axils; bracteas linear-lanceolate; ovarium 2-celled; drupe baccate. 7. G. Native of New Holland, on the south coast, and within the tropic; and of New South Wales, about Port Jackson. Goodenia calendulacea, Andr. bot. rep. 22. Flowers blue.


26 S. esépíosa (R. Br. l. c.) plant suffruticose, erect, glabrous; leaves linear-lanceolate, with rather recurved margins, a little toothed, with beardless axils; calyx short, 5-lobed; ovarium 2-celled. 7. G. Native of New Holland, on the south coast. In many points this species agrees with S. globulifera, but differs in the ovarium being truly 2-celled.

Tufted Scevolæ. Shrub 1 foot.

27 S. révoluta (R. Br. prod. p. 586.) suffruticose, erect, downy, greyish; leaves oblong-lanceolate, sessile, with revolute edges; spike compact; bracteas lanceolate, rather concave; calyx obsolescently crenated; ovarium 2-celled. 7. G. Native of New Holland, within the tropic.

Revolute-leaved Scevolæ. Shrub 1 foot.

28 S. líneaëris (R. Br. l. c.) suffruticose, erect, much branched, pilose, and scabrous; leaves and bracteas linear, recurved on the margins; spike terminal; ovarium 1-seeded. 7. G. Native of New Holland, on the south coast.

Linear-leaved Scevolæ. Shrub 1 foot.

29 S. paludósa (R. Br. l. c.) plant subherbaceous, erect, a little branched, pilose, scabrous; leaves linear-lanceolate, flatish, about equal in length to the axillary spikes; ovarium 1-seeded. 7. G. Native of New Holland, on the south coast.

Marsh Scevolæ. Pl. 1 ft.

30 S. angulata (R. Br. l. c.) suffruticose, erect; branches angular; leaves sessile, oblong-lanceolate; spike simple; bracteas conforming to the rameal leaves; calyx 5-toothed, about equal in length to the 2-celled wrinkled ovarium. 7. G. Native of New Holland, within the tropic. There is a variety of this having few-toothed leaves, usually quite glabrous, but sometimes furnished with a few scattered hairs.

Angular-branched Scevolæ. Shrub.

Sect. III. POGONANTHEÆ (from πογόνος, pogon, a beard; and ἀνθηρα, anthera, an anther; the anthers are bearded). Calyx length of ovary. Anthers bearded at the apex. Drupe nearly dry. Herbaceous plants. Peduncle axillary, 1-flowered, elongated, each furnished with 2 foliaceous permanent bracteas.

5 A
GOODENOVI. VIII. SCEVOLA.

31 S. hispida (Cav. Icon. 6. p. 7. t. 510.) wings of the segments of the corolla veinless. \( \alpha \). G. Native of New South Wales, within the tropic. R. Br. prod. p. 586. Goodenia ramosissima, Smith, in Lin. Trans. 2. p. 349. new holl. 15. t. 5.

Flowers lilac.


32 S. striata (R. Br. prod. p. 586.) wings of the segments of the corolla furnished with parallel veins. \( \alpha \). G. Native of New Holland, on the south coast.

Striated Scevola. Pl. 1 foot?

SECT. IV. CROSSOTOMA (from κρόος, κρός, a fringe; and τομα, τόμα, a section; in reference to the fringed segments of the corolla). Calyx obsolete. Wings of the segments of the corolla fringed longitudinally. Peduncles axillary, 1-flowered, furnished with deciduous bracteas at the apex.

33 S. spinosensis (R. Br. prod. p. 586.) shrubby, spinescent; leaves ovate or obovate, quite entire. \( \gamma \). G. Native of New Holland, on the south coast.

Spinose Scevola. Shrub.

Cult. All the species grow freely in a mixture of turfy loam, turfy peat, and sand; and cuttings planted in the same kind of soil, with a hand-glass placed over them, strike root readily; those of the stoe sperma species in heat.

IX. DIASPASIS (from διασπάσις, diaspora, a pulling asunder; segments of corolla). R. Br. prod. p. 586.


1 D. filifolia (R. Br. prod. p. 587.) \( \gamma \). G. Native of New Holland, on the south coast.

Thread-leafed Diaspasis. Pl. 1 foot?

Cult. See Scevola above for culture and propagation.


Linn. syst. Pentandria, Monogynia. Corolla bilabiata (f. 126. a.), having the tube cleft on the upper side (f. 126. c.); segments of the upper lip auricled on the inner margin. Anthers closely cohering (f. 126. d.). Ovarium 1-seeded. Indusium of stigma with a naked border (f. 196. c.). Nut crustaceous. Arid downy subshrub or herbs: hairs usually of two forms; the longer ones in most of the species are branched, and rather plumose; and the shorter ones stellate. Leaves alternate, undivided, or a little toothed, coriaceous. Flowers axillary or terminal, sub-spicate or solitary; bracteas small or wanting. Calyx short, usually obsolete. Corolla blue or purple, 5-parted; with the margins of the claws truly inflexed, and the lamina hairy on the outside: deciduous, but sometimes with the base permanent and entire. Stamens remaining after the corolla has fallen; anthers beardless.

1 D. undulata (R. Br. prod. p. 587.) suffruticose, erect, tomentose; leaves petiolate, roundish, toothed, undulated, scabrous above, longer than the peduncles, which are axillary and 2-4-flowered; corolla bearded with black plumose villi outside. \( \gamma \). G. Native of New South Wales, about Port Jackson. Flowers blue.

Undulated-leaved Dampiera. Shrub 1 foot.

2 D. rotundifolia (R. Br. l. c.) suffruticose, erect, tomentose; leaves petiolate, roundish, entire, flat, scabrous above, very blunt at the base; peduncles axillary, usually 1-flowered, very short: terminal ones subcoriaceous; corolla bearded with black plumose villi outside. \( \gamma \). S. Native of New South Wales, about Port Jackson. Flowers blue.

Round-leaved Diaspasia. Shrub 1 foot.

3 D. ovalifolia (R. Br. pr. p. 588.) suffruticose, erect, clothed with scurfy tomentum; leaves petiolate, oval, nearly entire, flat, scabrous above; peduncles 2-4-flowered, axillary, about equal in length to the leaves: terminal ones coriaceous; corolla bearded with black plumose villi outside. \( \gamma \). G. Native of New Holland, about Port Jackson. Juss. ann. mus. 18. t. 2. no. 1. Flowers blue. (f. 126.)


4 D. purpurea (R. Br. l. c.) suffruticose, erect, tomentose; leaves petiolate, ovate, acutely toothed, scabrous above; peduncles axillary, 1-3-flowered; corolla bearded with black plumose villi outside. \( \gamma \). G. Native of New Holland, about Port Jackson. Flowers purple. In this and the preceding species the outside of the corollas, as well as the peduncles, are densely bearded with spreading plumose villi.

Purple-leaved Dampiera. Shrub 1 foot.

5 D. fimbriata (R. Br. l. c.) suffruticose, erect, tomentose; leaves petiolate, ovate, acutish, reedally toothed, 3-nerved at base, smooth above in the adult state; flowers almost terminal; corollas clothed with branched wool outside. \( \gamma \). S. Native of New Holland, on the tropic. Flowers blue.

Rusty Dampiera. Shrub 1 foot.

6 D. hederacea (R. Br. l. c.) plant herbaceous, procumbent, tomentose; leaves for the most part petiolate, somewhat coriaceous, angularly cut: superior ones quite entire, glabrous above in the adult state; corollas bearded on the outside by spreading plumose cinerous villi. \( \gamma \). G. Native of New Holland, on the south coast. Flowers blue.

Ivy-like Dampiera. Pl. procumbent.

7 D. icxa (R. Br. l. c.) suffruticose? erect? clothed with hoary tomentum; leaves sessile, ovate (leaves less), obovate, quite entire. \( \gamma \). G. Native of New Holland, on the western coast about Cape Lewin and Wit's Land, where it was collected by Dampier and Baudin. Hoary Dampiera. Shrub.

8 D. cuneata (R. Br. l. c.) plant herbaceous, erectish, downy; leaves sessile, toothed, obovate-cuneated, upper ones elliptic-lanceolate, adult ones smoothish; spikes pedunculate; bracteas opposite; flowers alternate; corollas woolly on the outside from simple spreading villi. \( \gamma \). G. Native of New Holland, on the south coast. Flowers blue.

Cuneate-leaved Dampiera. Pl. \( \frac{1}{2} \) to 1 foot?

9 D. linea (R. Br. l. c.) plant herbaceous, erect, downy; leaves sessile, for the most part linear and few-toothed, lower ones cuneate, adult ones smoothish; spikes pedunculate;
bracteas opposite; flowers alternate; corollas woolly outside from simple spreading villi.  

**2. G.** Native of New Holland, on the south coast. Flowers blue. In this and *D. cuneifolia* the calyx is obsolete, the base of the corolla entire and permanent, clothed with simple villi on the outside; and the inflorescence is peculiar in these two plants.

**Linear-leaved Dampiera.** Pl. ½ to 1 foot?

10. D. *fasciculata* (R. Br. 1. c.) plant herbaceous, erect; stem compressedly trigonial; leaves sessile, cuneate, a little toothed, upper ones crowded in a verticillate manner, adult ones glabrous and smooth on both surfaces; peduncles in fascicles, few-flowered; corollas clothed with adpressed hairs outside: branches of pili approximate and parallel.  

11. D. *oblonga* (R. Br. 1. c.) plant herbaceous, erect; stem compressedly trigonial; leaves sessile, oblong, entire, and few-toothed, glabrous and smooth on both surfaces; peduncles in fascicles, few-flowered; corollas clothed with adpressed pili on the outside: divisions of pili approximate and parallel.  

**Paciied-peduncled Dampiera.** Pl. 1 foot?

11. D. *oblonga* (R. Br. 1. c.) plant herbaceous, erect; stem compressedly trigonial; leaves sessile, oblong, entire, and few-toothed, glabrous and smooth on both surfaces; peduncles in fascicles, few-flowered; corollas clothed with adpressed pili on the outside: divisions of pili approximate and parallel.  

**2. G.** Native of New Holland, on the south coast. Flowers blue.  

**Oblong-leaved Dampiera.** Pl. ½ to 1 foot?

12. D. *stricta* (R. Br. pro. p. 589.) plant herbaceous, erect; stem compressedly trigonial; leaves sessile, cuneate, a little toothed, scabrous above in the adult state; peduncles few-flowered, auxiliary and terminal; corollas clothed with adpressed pili on the outside: divisions of pili parallel and approximate.  


**2. G.** Native of New South Wales, about Port Jackson. Flowers blue.  


**2. G.** Native of New South Wales, on the south coast. Flowers blue.  

**Small-leaved Dampiera.** Pl. 1 foot?  

**Cult.** See Scaevola, p. 730. for culture and propagation.

**Tribe III.**

**BRUNONIÆ.** (this tribe only contains the genus *Brunonia*.)

**UTRICULARIUS SUPERIOR, 1-seeded.**


**LIN. SYST.** Pentándria, Monogyinia. Heads of flowers involucrated. Calyx 5-cleft, furnished with 4 bracteas. Corolla monopetalous, funnel-shaped; limb 5-parted, the 2 superior segments more deeply divided than the rest. Stamens 5, hypogynous. Anthers connate. Ovary 1-seeded. Indument of stigma 2-valved. Utriculus inclosed within the indurated calyx, which spreads at top with plumose segments. Seed without albumen.—Stemless herbs, with the habit of *Scabiosa*, Jasionum, and *Globularia*, downy from glandless simple pili. Radical leaves quite entire, spatulate. Scapes undivided, bearing each one head. Head hemispherical, lobate: lobes involucrated by foliaceous bracteas. Flowers distinct, nigh a whorl of 5 membranous bracteas, the fifth bractea rather dissimilar. Tube of calyx very short when in flower. Corolla azure blue, marcescent, having the tube at length cleft. Filaments almost hypogynous, permanent, inserted in the very short stipe of the ovarium, which is only obvious after fecundation. Anthers inclosed in the tube of the corolla. Stigma fleshy, retruse, inclosed within the bifid indium, which has a naked border. This genus agrees in many points of structure with *Compositae*, *Campanulaceae*, *Dipsaceae*, and *Globulariae*.

1. B. *sibrica* (Smith, in *Linn. trans. 10. p. 366. t. 28. R. Br. prod. p. 589.) leaves as well as the scapes silky from adpressed villi: calyces segments ending each in a thick coloured nail point.  

2. G. Native of New Holland, within the tropic. Flowers azure blue.

**Silky Brunonia.** Pl. 1 foot.

2. B. *australis* (Smith, in *Linn. trans. 10. p. 366. t. 28. R. Br. 1. c.) leaves as well as the bottom of the scapes villous from spreading hairs; calyx segments plumose, with an acute apex.

**Southern Brunonia.** Pl. 1 foot.

**Cult.** See Scaevola, p. 730. for culture and propagation.

**Tribe IV.**

**CAMPANIALEÆ (from *campana*, a bell; shape of flowers).**

**C.** Corolla regular, campanulate. Capsule 3-4-celled, many-seeded.

**XII. PENTAPHRAGMA (from *penta*, five, and *phragma*, a disseipment; in reference to the 5 longitudinal septa, or processes, from which the stamens spring);** Wall. cat. no. 1818. Alph. D. C. mon. camp. p. 97.—Phyteuma, Wall.

**LIN. SYST.** Pentándria, Monogyinia. Calyx semi-superior, ovate, villous, 5-lobed; lobes obtuse. Corolla campanulate, permanent, inserted in the calyx; with a recurved 5-lobed limb; lobes obtuse. Stamens 5, short. Anthers distinct, linear. Ovarium surrounded by the calyx, and connected with it by 5 longitudinal septa or processes, from which the stamens spring, 3-4-celled, many-seeded. Placentae from the inner angle of the cells. Style short, thick. Stigma concave, surrounded by the thick fleshy 3-lobed indium. Capsule 3-4-celled, combined with the villous tube of the calyx in its lower part, and surrounded by the segments. Seeds adhering to long filiform free receptacles, which are attached to the apex of the capsule.—A creeping woolly herb. Leaves alternate, broad, semi-cordate, like those of some species of *Begonia*, petiolate, serrated, acute, pretty smooth. Racemes axillary, secund, recurved, twice the length of the petioles. Flowers unilateral, arrayed in 2 rows, nearly sessile. Corollas white.

1. P. *begoniacea*.  


**Begonia-leaved Pentaphragma.** Pl. creeping.

**Cult.** A mixture of vegetable mould and sand will be a good soil for this plant; and it will be easily propagated by dividing the creeping stems.

**ORDER CXXXVII. CAMPANULACEÆ (this order contains plants agreeing with the genus *Campanula* in the flowers being bell-shaped, and in other characters).**

CAMPANULACEÆ.

Calyx regular, of from 3 to 8 lobes, but usually of 5 lobes, very rarely destitute of the limb. Corolla monopetalous, regular, permanent, usually 5-lobed, rarely 3 to 8-lobed; lobes alternating with the calycine segments, each having a conspicuous central nerve, valvate in assertion. Stamens like the corolla, inserted in the margin of the disc of the ovary, and combined with it, distinct from the corolla, but equal in number to its segments, and alternating with them; filaments usually expanded at the base and membranous, and bending towards the base of the style above the disc; anthers fixed by the base, free, rarely more or less combined into a tube, 2-celled; cells dehiscing lengthwise when the flower is in bud; pollen copious, adhering, yellow or violaceous, and clothed with very short papillæ. Style one, more or less hairy; stigma naked (not covered by an indusium, as in the order Scrophulariaceæ,); rarely capitulate, but usually divided into from 2 to 8 lobes, or as many lobes as there are cells in the ovary; lobes erect while the flower is in assertion, pilose on the back, and hardly distinct, but they diverge and become recurved and glabrous on the expansion of the flower. Ovary combined with the tube of the calyx, sometimes half superior, many-celled; cells from 2 to 8 in number, but usually 2, 3 or 5, (never 4, unless a monstrosity) opposite the calycine lobes, and sometimes alternating with them. Capsule many-seeded, dehiscing at the sides or apex, having the valves usually septiferous in the middle. Seeds numerous, small, inserted in the placenta on the inner side of the cells. Albumen fleshy. Embryo slender, straight, with opposite, ovate or roundish small foliaceous cotyledons.—Usually milky herbs, rarely shrubs. Leaves extipulate, alternate, but sometimes opposite, rarely entire, usually toothed or crenated, never fleshy; the radical ones often different from the cauline ones. Flowers rarely involucrated, number and situation variable, terminal and axillary, racemose, paniced or spicate, and glomerate, usually drooping; pedicels always reflexed in those species in which the capsules burst at the base, but on the contrary they are erect in those species whose capsules burst at the apex.—Corollas usually blue or white, rarely yellow or purple.

Campanulaceæ differ from Compositæ in not having the flowers in heads, in their usually distinct anthers; in their polyspermy of fruit. It differs from Lobeliaceæ in the regular flowers, and in the usually distinct anthers, and from Goodeniaceæ in the flowers being regular, and in the want of an indusium to the stigma. All the plants are pretty, and some highly ornamental. The roots of Camp. Rapunculus are used as a vegetable under the name of Rampion.

** Synopsis of the genera. **

** Tribe I. **

1. ** Jasione. ** Capsule dehiscing at the apex. The plants contained in this tribe are most frequent in the southern hemisphere.

§ 1. Corolla 5-parted.

* Anthers combined.

1. ** Jasione. ** Capsule 2-celled, inferior; valves dehiscing but a very little way at top.—Herbs with capitate flowers.

2. ** Lightfootia. ** Stigmas filiform. Capsule 3-5-celled, half inferior; when 5-celled the cells are opposite the stamens and calycine segments.—African shrubs or herbs.

3. ** Cephalostigma. ** Stigma capitulate. Capsule 2-3-celled.—Herbs.

4. ** Campanulea. ** Calyx without a limb. Stigmas ovate, thick. Capsule 3-celled.—Herbs, with opposite leaves, and large involucrated flowers.

§ 2. Corolla 3-6-cleft or 3-6-lobed at the apex. Anthers always distinct.

* Capsule with the valves opening regularly.


7. ** Platycodon. ** Calyx and corolla 5-lobed. Stamens and stigmas 5. Capsule 3-5-celled; cells when 5 alternating with the stamens and calycine segments. Seeds ovate, flat.—Rather glaucous herbs, with alternate or subopposite leaves, and large campanulate corollas.

8. ** Microcos. ** Calyx and corolla 5-lobed. Stamens and stigmas 5. Capsule 5-celled; cells alternating with the stamens and calycine segments. Seeds small, ovoid.—Humble herbs, with narrow alternate leaves, and small cylindrical corollas.

9. ** Wahlenbergia. ** Calyx and corolla 3-5-lobed. Stamens 3-5; stigmas 2-5. Capsule 2-5-celled; cells when 5 opposite the stamens and calycine segments. Seeds small, usually ovoid. Herbs usually with alternate and narrow leaves.

** Capsule elongated, bursting at the top or opening by a pore. **

10. ** Prizmatocalyptrus. ** Calyx and corolla 5-lobed. Stamens 5. Capsule 2-celled, naked, at length bursting irregularly at the apex. Seeds angular, thick.—Herbs or subshrubs, with alternate narrow stiff leaves, and axillary sessile flowers.

11. ** Rotella. ** Calyx and corolla 5-lobed. Stamens 5. Capsule 2-celled, always terminated by the permanent calycine segments, dehiscing irregularly at the apex.—Small shrubs, with alternate narrow stiff leaves; and sessile, usually solitary, terminal flowers.

** Tribe II. **

** Campanulea. ** Capsule dehiscing at the sides.—The plants contained in this tribe are all indigenous to the northern hemisphere.

§ 1. Capsule dehiscing by valves, which are equal in number to the cells.

* Corolla 5-8-parted.


13. ** Petromeraula. ** Calyx and corolla 5-parted. Stigma
**Corolla 5-cleft or 5-lobed at the apex.**

1. **Camp'álua.** Corolla campanulate, funnel-shaped, or broadly tubular. Nectarium none. Capsule 3-5-celled, not elongated; cells when 5 opposite the stamens and calycine segments.—Herbs variable in habit.

2. **Svecula'ria.** Corolla rotate. Nectarium none. Capsule elongated, 3-celled.—Dwarf annual herbs, with sessile flowers.

3. **Trache'lium.** Corolla salver-shaped, with a very narrow elongated tube. Nectarium wanting. Style only pilose at the apex; stigmas small, hardly distinct. Capsule 2-3-celled, not elongated.—Herbs.

§ 2. **Capsule dehiscing laterally by numerous transverse fissions.**

4. **Mu'schel.** Calyx and corolla 5-cleft. Stamens 5. Capsule 5-celled; cells alternating with the lobes of the calyx and stamens.—A subshrub, with broad serrated leaves, and racemose yellow flowers.

† A genus doubtful whether it belongs to the order.

5. **Merci'ea.** Calyx 5-lobed, with a very hispid tube. Corolla 5-lobed, with a narrow tube as in *Trache'lium*. Stamens 5, free; filaments long and slender. Stigmas 2, very short. Capsule inferior, indehiscent? 1-celled, containing probably always 4 ovula in the bottom.—Cape shrubs, with the leaves of *Roëlla*, and slender lateral flowers.

**Tribe I.**

**JASIO'NEÆ** (this tribe contains plants agreeing with *Ja'sione* in the dehiscence of the capsule). Capsule dehiscing at the apex.


**Lin. syst. Pentanúria.** Calyx 5-cleft. Corolla deeply 5-parted; segments linear-lanceolate. Stamens 5, with slender filaments, and with the anthers combined into a tube at the base; pollen blue or purplish. Style pilose from the middle to the apex: the pili or hairs disposed in 10 rows; stigmas 2, short. Capsule 2-celled, spheroid or ovoid, dehiscing by a broad hole at top, with very short valves. Seeds small, ovoid, shining.

—Dwarf herbs, with the habit of *Scabiosa*. Leaves alternate, narrow. Flowers collected into terminal bracted heads: the flowers expanding from the top of the head.


**Var. γ, littorális** (Alph. D. C. mon. p. 102.) plant humble, tufted; stems simple, ascending; heads small; bracteas obtuse, rounded. O. H. Native of Sweden, in the sand by the sea-side. J. montana littoralis, Fries, nov. fl. succ. pt. 2. p. 29.

**Var. c, proliferá** (Alph. D. C. 1. c.) heads proliferous. O. H. Native of Piedmont, about Lytettia.

**Mountain or Common Sheep's Scabious, or Sheep's-bit.** Fl. June, July. Britain. Pl. ½ to 1 foot.


**Corymbose-flowered Sheep's Scabious.** Pl. ½ foot.


**Portugal Sheep's Scabious.** Pl. ¼ foot.


**Humble Sheep's Scabious.** Pl. ½ feet.

6. **J. folíosísa** (Cav. icon. 2. p. 38. t. 148. f. 1.) glabrous; stems ascending, simple; radical leaves rosulate, rather spatulate: cauline ones linear-lanceolate. ♀. H. Native of Spain; plentiful near the top of Mount Orosopia, on the north side, in the fissures of rocks; and in the boundaries of the kingdoms
of Valencia and Murcia. Phyteuma? rigidifolia, Duf. ined. in herb. D. C. Root simple. Heads globose, few-flowered. Flowers pedicellate, of a deep violet colour. This is a dwarf, but very elegant plant when in blossom.

2. H. Native of Spain, on Sierra Nevada, at a place called Valeta. Flowers of a greyish-blue colour.

Salad-coloured-flowered Sheeps' Scabious. Pl. prostrate.

Cult. The species of Jasione are all very elegant while in blossom, and they are, therefore, well fitted for decorating the front of flower-borders and rock-work. They grow best in light soil, and are readily increased by parting at the root, by seed, or by cuttings. Plants of all the kinds should be kept in pots, so as to be placed under shelter in severe weather in winter, or else they are liable to be killed, and the species lost to the gardens.


b. Lin. syst. Pententia, Monogynia. Calyx 5-cleft. Corolla usually 5-parted, sometimes 5-cleft. Stamens 5: filaments broad, ciliated; anthers free, caducous. Stigmas 3-5, short, filiform. Capsule 3-5-celled, usually half superior, dehiscing by the valves at the apex; cells, when 5, opposite the stamens and calycine segments. Seeds ovoid-trigonal, minute. Small shrubs, rarely perennial herbs. Leaves alternate, and sometimes opposite, sessile, small, scattered equally over the whole plant. Flowers usually racemose, and on short pedicels; pedicels erect after the flowers begin to fade, and usually stiff. All natives of the Cape of Good Hope, except one, which is a native of Madagascar.

§ 1. Capsule 3-celled.

1. L. subulata (Lher. sert. angl. t. 5.) stem ascending or erect, rather woody, simple or branched; leaves alternate, erectish, subulate, narrow, somewhat dentilicate; flowers racemose, on short pedicels; corolla 5-parted, with the segments rather longer than the calycine lobes; valves acute, longer than the entire base of the capsule. 2. G. Native of the Cape of Good Hope; very common on the mountains about Cape Town. Roem. et Schultes, syst. exclusive of the synonyme of Campânula capillacea. Campânula subulata, Spreng. syst. 1. p. 728.


§ 2. Capsule 5-celled.

2. L. Longifolia (Alph. D. C. mon. p. 108.) stem erect, quite simple, woody at the base; leaves alternate, erect, subulate, a little dentilicate; flowers subsessile; corolla 5-parted, having the segments twice longer than the calycine lobes; capsule almost wholly inferior, with very short valves. 2. G. Native of the Cape of Good Hope. L. linearia, Ekloë, ined. in herb. Dunant. Campânula sessiliflora, Lin. suppl. p. 139. Thumb. prod. p. 38. fl. cap. 2. p. 171. mem. acad. Petersb. 4. p. 367. t. 5. f. 1. Leaves stiff. Flowers numerous at the tops of the branches, on short pedicels, 1-3 from each leaf or bractea.

Var. ß. canescens (Cham. in Linnaea. 7. p. 192.) stem, leaves, and corollas clothed with hoary down; leaves 4 lines long, straight, with revolute edges; inflorescence more loose than in the species; axillary flowers nearly sessile: terminal ones on long pedicels.

Var. γ. lanuginosa, (Cham. l. c. p. 193.) corollas, inflorescence, and stem rather woolly from long white villi; leaves 2 lines long, with finely-revolute edges, densely imbricated; inflorescence contracted, subcapitulate.

Long-leaved Lightfootia. Pl. 1 foot.


One-toothed-leaved Lightfootia. Shrub 1 foot.

4. L. a. Æpressa (Alph. D. C. mon. p. 110.) stem erect, wooly, branched; leaves alternate, usually in fascicles, spreading, linear, very narrow, entire; flowers loosely racemose; corolla 5-parted, having the segments 3 times longer than the calycine lobes; valves acute, about in equal length to the base of the capsule. 2. G. Native of the Cape of Good Hope. Campânula dæpressa, Thumb. prod. p. 38. mem. acad. Petersb. 4. p. 368. t. 7. f. 2. Leaves a little decurrent, ciliated with white hairs at the base. Flowers panicked on the upper part of the stem, which is leafless.

Adpressa Lightfootia. Shrub 1 foot.

5. L. N. Æbens (Spreng. in Zeiher, fl. cap. exsic. p. 266.) stem erect, wooly, branched; leaves alternate, usually in fascicles, spreading, linear, very narrow, entire; flowers loosely racemose; corolla 5-parted, having the segments 3 times longer than the calycine lobes; valves acute, about in equal length to the base of the capsule. 2. G. Native of the Cape of Good Hope. Campânula Æbens, Burch. cat. geogr. pl. afr. no. 1729. Flowers terminal and axillary, loosely racemose at the tops of the branches.

Whitish Lightfootia. Shrub 1 foot.


Slender Lightfootia. Shrub 1 foot.


Fascicled-flowered Lightfootia. Shrub 1 foot.

8. L. oxyccocoides (Lher. sert. angl. t. 4. exclusive of the syn. Campânula Ætenilla, L.) stem erect or ascending, much
branched, woody at the base; branches diffuse; leaves alternate, reflexed, ovate-lanceolate, acute, thin, denticulated at the base: flowers loosely racemose; corolla 5-parted, having the segments hardly twice the length of the calyces lobes; valves acute, equal to the base of the capsule. \* G. Native of the Cape of Good Hope; on the Table Mountain. Smith, exot. fl. 2. 18. Alph. D. C. mon. p. 113. Lobélia tenellá, Lin. mant. p. 120. Thumb, prod. p. 40. Lobélia parviflora, Berg, cap. 345. Campánula Ottoniána, Rem. et Schultes, syst. 5. p. 113. Branches purplish. Flowers terminal and axillary, at the tops of the branches, white, with reddish nerves.

**Cranberry-like** Lightfootia. Fl. July. Clt. 1787. Shrub \( \frac{1}{2} \) to 1 foot.

9 L. lanceolátá (Link, enum. 1. p. 217.) stem decumbent, downy; leaves lanceolate, glabrous, furnished with 1 or 2 teeth; peduncles downy; calyx glabrous, one-half shorter than the corolla. \* G. Native of the Cape of Good Hope. L. oxycocéoids, var. Spreng. syst. 1. p. 809. Corollas white and bluish, larger than those of L. oxycocéoids.


10 L. muscósá (Link, enum. 1. p. 217.) stem decumbent, glabrous; leaves lanceolate, glabrous, quite entire: rameal ones opposite; peduncles glabrous; calyx shorter than the corolla. \* G. Native of the Cape of Good Hope. L. oxycocéoids, var. Spreng. syst. 1. p. 809. Leaves 3-5 lines long, and half a line broad. Corolla 2-5 lines long, whitish-blue.

**Mossy** Lightfootia. Shrub decumbent.

11 L. Loódíssé (Alph. D. C. mon. p. 114.) stem decumbent, woody at the base, branched; leaves alternate, somewhat reflexed, ovate-lanceolate, acute, entire; flowers loosely racemose; corolla 5-parted, having the segments 4 times longer than the calyces lobes. \* G. Native of the Cape of Good Hope. L. tenellá, Lodd. bot. cab. t. 1038. Branches purplish. Flowers axillary and terminal, disposed in loose racemes at the tops of the branches. Corolla bluish.


12 L. lycoforóides (Alph. D. C. mon. p. 114.) branches woody, simple, very leafy; leaves alternate, and sometimes subverticillate, erect, adpressed to the branches, linear, very narrow; flowers few, sessile; corolla 5-parted, with the segments 3 times longer than the calyces lobes. \* G. Native of the Cape of Good Hope. Leaves revolute on the margins. Flowers sessile, usually 3 on the top of each branch, the middle one expanding before the lateral ones.

**Club-moss-like** Lightfootia. Shrub 1 foot.?

13 L. oppósitifólia (Alph. D. C. mon. p. 115.) branches erect, slender, stiff, simple; leaves opposite, somewhat reflexed, linear, acuminate, narrow, slightly denticulated; flowers few, usually terminal; corolla deeply 5-cleft, twice longer than the calyces lobes. \* G. Native of the Cape of Good Hope, on the Table Mountain. Campánula ericóïdes, Lam. Lightfootia, Burch, cat. geog. pl. afr. austr. no. 606. Branches reddish. Flowers solitary, terminal, rarely axillary. Habit of L. oxycocéoids. L. muscósá and L. lanceolátá, Link, are probably hardly varieties of this species.

**Opposite-leaved** Lightfootia. Shrub 1 foot.?

14 L. ruóbióides (Alph. D. C. mon. p. 116.) branches procumbent, diffuse; leaves opposite, spreading, or a little reflexed, lanceolate, acute, remotely denticulated; flowers few, terminal and axillary; corolla 5-parted, with the segments longer than the calyces lobes. \* G. Native of the Cape of Good Hope. Campánula ruóbióides, Banks, herb. Plant trailing, much branched. Branches reddish. Leaves glabrous, or furnished with a few white hairs. Flowers axillary and terminal, solitary, at the extremities of the branches.

**Madder-like** Lightfootia. Pl. trailing.

15 L. Madagáscarisís (Alph. D. C. mon. p. 116.) stem erect, woody at the base, simple; leaves alternate, erect, linear-acuminate, remotely denticulated; flowers somewhat panicked; segments of the corolla, which is deeply 5-parted, about 3 times longer than the calyces lobes; capsule wholly inferior, with short valves. \* S. Native of Madagascar, where it was collected by Commerson. Campánula Madagáscarisésis, Juss. herb. Flowers at the top of the stem, and along one side of the peduncles, about 10 towards the upper part of the stem.

**Madagascar Lightfootia.** Pl. \( \frac{1}{2} \) to 1 foot.

**Cult.** All the species grow freely in a mixture of loam, peat, and sand; and young cuttings strike root readily in the same kind of soil, with a hand-glass over them.


**III. CEPHALOSTIGMA.**

(from Κέφαλος, kephale, a head, and στίγμα, stigma, a stigmas; in reference to the stigma, which is capitate.) Alph. D. C. mon. p. 117.—Campánula species, Wall. herb.—Wahlenbergia species, Perrott. et Lepr. herb. Lin. syst. Pentândria, Monogynía. Calyx 5-cleft. Corolla 5-parted; segments alternating with the calyces lobes, and longer than them. Stamens 5, free; filaments broadest at the base; anthers 2-celled. Style usually exerted, more or less hairy; stigma simple, capitate, pilose. Capsule 2-3-celled, desiccating by 2-3 short valves at the apex, which are septicid in the middle. Seeds numerous, small, ovoid, triquetrous.—The species of this genus have a habit intermediate between Wahlenbergia and Lightfootia, but differs from both these genera in the capitate stigma; but it has a capsule like that of the first, and a corolla like that of the latter.

\( \frac{1}{2} 1 \) **Capsule half superior, 3-celled. Style rather shorter than the segments of the corolla.**

1 C. paniculátá (Alph. D. C. mon. p. 117.) stem herbaeous, much branched, leafy; leaves ovate, acute at both ends, broad, subcompressed; flowers loosely panicked; segments of corolla 2 or 3 times longer than the calyces lobes; capsule obconical. \( \frac{1}{2} \) F. Native of Cape Verde, at Khana, in humid sandy places. Wahlenbergia, spec. herb. Lepr. et Perrott. Root simple. Stem leafy, and pilose at the base. Leaves rather pilose, with white undulate, edges. Peduncles and pedicles glabrous.

**Pérrotet's Cephalostigma.** Pl. 1 foot.

\( \frac{1}{2} 2 \) **Capsule 2-celled, almost wholly inferior. Style rather longer than the segments of the corolla.**

2 C. Pérrotettí (Alph. D. C. mon. p. 118.) stem herbaceous, simple, leafy at the base; leaves lanceolate; flowers disposed in a long raceme; segments of corolla 3 times longer than the calyces lobes; capsule obvoid. \( \frac{1}{2} \) F. Native of Cape Verd, at Khana, in humid sandy places. Wahlenbergia, spec. herb. Lepr. et Pérrott. Root simple. Stem leafy, and pilose at the base. Leaves rather pilose, with white undulate edges. Peduncles and pedicles glabrous.

**Pérrotett's Cephalostigma.** Pl. \( \frac{1}{2} \) foot.

3 C. Prieú'reí (Alph. D. C. mon. p. 118.) stem woody, humble, much branched, naked at the base; leaves small, linear; flowers panicked; segments of corolla hardly twice the length of the calyces lobes; capsule obconical. \( \frac{1}{2} \) S. Native of Senegal, about Jonal, where it was collected by Leprieux and Pérrottet. Root simple. Branches very slender, many-flowered, glabrous.

**Le Prieur's Cephalostigma.** Pl. \( \frac{1}{2} \) foot.

**Cult.** For culture and propagation see Microcèdon, p. 737.
LIN. SYST. PEN'TANDRIA, MONOGY'NIA. Flowers involucrated. Involucrum 5-parted. Calyx hemispherical, combined with the involucrum at the base, truncate at the apex, bearing the corolla. Corolla 5-parted? (5-petalled, ex Blum.). Stamens 5, free, opposite the lobes of the involucrum, inserted at the base of the corolla or top of the calyx, and in the ovarium; filaments broadest at the base; anthers 2-celled. Style inclosed, divided into 3 ovate thick stigmas at the apex, which are pilose before the expansion of the flower. Ovarium combined with the tube of the calyx, 3-celled. Capsule globose, terminated by a broad flat 5-angled umbilicus, which is girded by the cicatrices occasioned by the falling of the corollas and stamens, many-valved, ex Blum. Seeds very numerous, ovoid-cylindrical, dotted, inserted on the thick placenta, which are inflexed on both sides, and situated at the inner angle of the cells.—Quite glabrous lacistent herbs, with tuberous roots, ex Blum. Stems and branches terete. Leaves opposite, glaucous beneath. Peduncles axillary and terminal.

1 C. JAVA'NICA (Blum. bijdr. p. 727.) stem climbing; leaves on long petioles, ovate-cordate; flowers solitary, scattered. 2. S. Native of Java, in humid woods on the mountains of Salak and Gede. Leaves 1-2 inches long, and 6-12 lines broad. Flowers green, axillary, and terminal. Peduncles 1-flowered.

Java Campanulaceae. Pl. cl.

2 C. CÉLE'BICA (Blum. bijdr. p. 727.) stem erect; leaves on short petioles, oblong-lanceolate; flowers subcorymbose, terminal. 2. S. Native of Celebes. Leaves ovate, acute; superior ones lanceolate, nearly entire, or serrated.

Celebes Campanulaceae. Pl. 1 foot.

Cult. A mixture of sand, loam, and peat will be a good soil for the species of Campanulacea; and they are to be increased by cuttings or seeds.

V. CODONOPSIS (from κόδων, kodon, a bell, and α'ζυς, opsis, resemblance; in reference to the shape of the flowers). Wall. in Roxb. fl. ind. 2. p. 103. Alph. D. C. mon. p. 120.

LIN. SYST. PEN'TANDRIA, MONOGY'NIA. Calyx 5-lobed or truncate. Corolla inserted in the top of the calyx, 5-lobed; lobes alternating with the calycine segments when there are 5. Stamens 5, free, alternating with the lobes of the corolla; filaments broadest at the base; anthers 2-celled, length of filaments. Style inclosed; stigmas 5, thick. Ovarium 5-celled, almost combined with the whole of the tube of the calyx. Capsule dehiscing by 5 acute valves at the apex, which are septiferous in the middle. Seeds inserted in the inner angle of the cells to a thick placenta, furnished with albumen and a straight embryo.—Usually quite glabrous herbs, inhabitants of the north of India on the mountains. Stems erect or scendent, and even twining, branched, terete, rising from a woody root, probably always. Leaves usually strictly opposite, ovate, acuminate, not entire, on short petioles, glaucous, rarely hoary beneath. Branches usually opposite, more or less articulated at their origin. Flowers terminal and axillary, pedunculate, sometimes involucrated. Corollas whitish, yellowish or deep purple. The habit of the species is variable.


1 C. VI'RIDD (Wall. fl. ind. 2. p. 108.) stem ascending, twining; leaves alternate and opposite, downy, hoary beneath, a little crenulated; corollas large, yellowish-green. 2. G. Native of Nepal, about Gosaingthan, Kamaon, and in an obscure wood on the top of Sheepore. Plant scendent, much branched, with the habit of Convolvulus. Leaves ovate-oblong. Flowers axillary and terminal, solitary, often opposite the leaves, with an ungrateful scent.


2 C. PURPU'REA (Wall. in Roxb. fl. ind. 2. p. 105.) stems ascending, twining a little, manifestly articulated; leaves strictly opposite, glabrous, glaucous beneath, a little crenulated; corollas deep purple. 2. G. Native of Nepal, on the mountains towards the Himalaya. Leaves obovate-oblong. Flowers solitary, usually terminal, and terminating axillary branches.

Purple-flowered Codonopsis. Pl. twining.

SECT. II. MICRO'SANTHES (from μικρός, micros, small, and ανθος, anthos, a flower; in reference to the small flowers). Flowers small, white, involucrated. Calyx probably always truncate. Seeds rather lenticellate, small. Leaves strictly opposite, glabrous, glaucous beneath.

1 C. TRUSC'A'TA (Wall. cat. no. 1301.) stem erect; leaves sharply serrated; involucrum combined with the base of the calyx. 2. G. Native of the Burman Empire, at Pigue on the banks of the Irrawaddy. Stem branched; branches stiffish. Leaves ovate, acuminate. Flowers 2-6 on the top of each branch; pedicels terminal and axillary, 1-flowered.

Truncate-calyxed Codonopsis. Pl. 1 to 2 feet?

4 C. PARVIFLÓRA (Wall. cat. no. 1300. Alph. D. C. mon. p. 123.) stem erect; leaves remotely and setaceous denticulated; involucrum distinct from the calyx. 2. G. Native on the Pundu mountains, on the north-east of Bengal. Stem branched; branches opposite. Leaves ovate-acuminate. Flowers small, numerous, and as if they were panicked; pedicels trichotomous or dichotomous.

Small-flowered Codonopsis. Pl. 2 feet.

Cult. For culture and propagation see Campanína above.


LIN. SYST. HEX'ANDRIA, MONOGY'NIA. Calyx 6-cleft. Corolla 6-lobed at the apex, large, campanulate. Stamens 6, free; filaments thickest at the base, glabrous. Style inclosed, hispid above, the hairs disposed in 12 rows. Stigmas 6. Capsule 6-celled, dehiscing at the apex; cells opposite the calycine lobes and stamens. Seeds small, angular.—Large herbs, with thick perennial roots: having the stem, leaves, and corollas glaucous, and quite glabrous. Leaves opposite. Flowers terminal, solitary.


2 C. ? ZANQUE'RA'NICA (Alph. D. C. mon. p. 125.) stem shrubby, scandent, branched; leaves hastately cordate, quite en-
glabrous; flowers solitary, lateral. C. Native of Africa, on the coast of Zanjuebar. C. Zanjuebárica, Lour. coh. p. 195. Flowers pale. This plant agrees with the present genus in the calyx being 6-cleft, in the corolla being 6-cleft, in the stamens being 6, and in the capsule being 6-celled; but differs in the capsule dehiscing at the base, not at the apex, in the flowers being lateral, and in the leaves being alternate.

**Zanjuebar** Canarina. Shrub climbing.

**Cult.** C. campanulata is very desirable, as it flowers in autumn and winter, when few other plants are in bloom. After flowering the stem dies down, and the root continues dormant all the summer, when it needs but little water. When the stem begins to push forth the plants had better be removed to the stove, as they will not flower so abundantly in the green-house. A light loamy soil, or a mixture of loam and peat, is the best soil for it; and the plant is readily increased by dividing at the root or by cuttings, planted in the same kind of soil under a hand-glass. The C. Zanjuebárica being a stove shrub will grow in the same kind of soil recommended for the first species, and will be easily increased by cuttings.


**VIII. MICROCODON** (from μικρός, mikros, small, and κώδων, kodon, a bell; in reference to the shape and smallness of the flowers). Alph. D. C. mon. p. 127.—Campanula spec. Eklon.—Wahlenbergia spec. Schrad. Lin. syst. Pentándria, Monogónia. Calyx 5-cleft. Corolla 5-lobed at the apex, small, cylindrical, permanent. Stamens 5, free; filaments very slender, not expanded at the base. Style filiform; stigmas 5. Capsule 5-celled, dehiscing by 5 valves at the apex, cells alternating with the calycine segments and stamens. Seeds ovoid, small, shining, but not angular.—Humbie annual herbs, natives of the Cape of Good Hope. Leaves alternate or nearly opposite, small, narrow, sessile; superior ones rather the longest. Branches at the base of the plant opposite and diverging. Flowers almost sessile. Tube of calyx spherical and very hairy.


**Glomerate-flowered Microcodon.** Pl. ½ fo ½ foot.


**Cult.** The seeds of these plants should be raised on the hot-bed; and when the plants are of sufficient size they may be planted out into the open border in May in a warm sheltered situation.


**Lin. syst. Pentándria, Monogónia.** Calyx 3-5-cleft (f. 128. a.). Corolla 3-5-lobed at the apex (f. 128. b.), rarely divided to the middle. Stamens 3-5, free; filaments rather broadest at 5 B

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the base. Style inclosed, pilose, but most so towards the upper part. Stigma 2-5 (f. 128. c.). Ovarium combined with the tube of the calyx. Capsule 2-5-celled (f. 128.e) each opening by so many valves at the apex, which bear each a dissepiment in the middle. Seeds very numerous, minute.—Herbs, rarely shrubs, for the most part annual. Leaves usually alternate, rarely opposite, generally most numerous towards the lower part of the plant. Flowers for the most part on long peduncles; pedices drooping at first, but when bearing the capsules are perfectly erect. The species of this genus are mostly plentiful in the southern hemisphere, particularly at the Cape of Good Hope.


* Plants canescent. Flowers aggregate.

1 W. graminifolia (Alph. D. C. mon. p. 130.) stems and leaves clothed with soft down; leaves entire; radical ones linear or linear-spatulate; cauline ones linear, and somewhat stem-clasping; bracteas ovate, acute, entire, rather downy; tube of calyx smoothish; but the lobes are downy, and the sinuses are toothless. 2. H. Native of Sicily; south of Italy, even to Rome; and the Island of Zante. Campánula graminifolia, Lin. spec. 1. p. 234. Sibth. et Smith, fl. grac. t. 296. but not of Waldst. et Kit.—Barr. icon. t. 332.—Mor. ox. 2. p. 454. sect. 5. t. 1. f. 9. Cup. pamm. 1. p. 736.—Bocc. icon. rar. p. 78. f. 2. Mor. ox. 2. p. 461. sect. 5. t. 4. f. 41. Colum. phytt. p. 25. t. 26. ed. 2. p. 118. t. 34. Flowers disposed in solitary, bracteate, terminal heaps. Corolla blue; filaments white; anthers yellow.


2 W. Garganica; perennial, downy, canescent; stems diffuse or pendulous, simple; leaves roundish, cordate: lower ones on long petioles, deeply and unequally crenated: upper ones dentate; crenatures and teeth mucronate; racemes loose, leafy; pedicels filiform, 1-flowered; calycine segments lanceolate, acuminate, reflexed. 2. H. Native of Abruzzo, in the fissures of rocks on Mount Gangano, now St. Angelo. W. flaccida, Presl, synb. p. 29. t. 18. but not of Alph. D. C.

Gargano Wahlbergia. Pl. diffuse.


4 W. Tenuifolia (Alph. D. C. mon. p. 133.) stems pilose; leaves linear, entire, with bristly margins; bracteas ovate, acuminate, ciliated with bristles; tube of calyx rather pilose; lobes of calyx ciliated with bristles, and the sinuses toothless. 2. H.


Dalmatian Wahlbergia. Pl. 3/4 to 3/5 foot.

** Stems short. Flowers solitary.

6 W. pumilio (Alph. D. C. mon. p. 134.) plant tufted; stems short, very leafy; leaves linear, entire, glabrous beneath, revolute on the margins at top, and pilose in the middle: hairs adpressed, pencilled or in tufts at the tops of the leaves; upper leaves broadest at the base, and covering the flower; tube of calyx oboconical, glabrous; lobes of calyx entire, similar to the leaves. 2. H. Native of Dalmatia, in the higher alpine ranges of Mount Biocovo. Campánula sileniformia, Host, fl. austr. 1. p. 268. but not of Fisch. Campánula pumilio, Portenschl. ined. Rom. et Schultes, syst. 5. p. 135. Visian. stipr. dalm. spec. p. 29. Plant with the habit of Stélène acaulis. Flowers sessile, solitary, numerous. Corolla azure blue; anthers yellow.

Dwarf Wahlbergia. Pl. tufted.


§ 1 Capsule 5-celled. Seeds shining. Stems erect or ascending. Peduncles elongated, naked. Leaves alternate, sessile. All natives of the Cape of Good Hope.


8 W. diffusa (Alph. D. C. mon. p. 137.) stem weak, much branched, glabrous, or rather pilose; leaves linear, acuminate, somewhat dentilicate, calyx glabrous or pilose, with a spherical tube; corolla 5-lobed at the apex, hardly longer than the calycine lobes; capsule spherical, glabrous. O. H. Native of the Cape of Good Hope. Campanula rubioides, Banks, herb.—Comm. hort. t. 37? Calyx quadriquadrifid.


9 W. linearis (Alph. D. C. mon. p. 137.) stem flexuous, erect, filiform, simple and glabrous at the base; leaves linear, entire, glabrous; calyx glabrous or pilose, with a spherical tube; corolla 5-lobed at the apex, hardly longer than the calycine lobes; capsule spherical, glabrous. O. H. Native of the Cape of Good Hope, in sandy places. Campanula linearis, Lin. suppl. p. 140. Thunb. prod. p. 38. mem. acad. petersb. 4. t. 5. f. 5. Stem purplish. Flowers somewhat panicled, white; peduncles and pedicels capillary, drooping when bearing the flowers, and erect while bearing the fruit.

Linear-leaved Wahlenbergia. Pl. ½ foot.

§ 2. Capsule 3-celled. Seeds shining or dotted. Stems erect or procumbent. Peduncles naked, more or less elongated. Leaves alternate, rarely opposite.

* Seeds usually dotted. Stems branched, slender, usually procumbent. Leaves sessile or petiolate, and opposite or alternate in the same specimen.

10 W. flaccida (Alph. D. C. mon. p. 138.) plant rather pilose; stem erect, simple, rather leafy; leaves opposite and alternate, ovate, acute, entire; calyx pilose, with an ovoid tube; corolla 5-lobed, one-half longer than the calycine lobes; capsule ovoid, spherical. O. H. Native of the Cape of Good Hope, where it was collected by Masson. Campanula flaccida, Banks, herb. Flowers solitary, terminal. Peduncle not different from the stem, being leafy like it.

Placcid Wahlenbergia. Pl. ½ foot.

11 W. diversifolia (Alph. D. C. mon. p. 139.) stem pro- cumbent, branched, not very leafy, glabrous above, and pilose below; leaves alternate and opposite, smoothish: lower ones obovate-roundish, crenately toothed: the rest ovate-lanceolate, acute, toothed; calyx glabrous, with an ovный-spherical tube; corolla one-half longer than the calycine lobes; capsule obconically ovoid. O. H. Native of the Cape of Good Hope. Campanula Eklon, in herb. Dunant. Flowers on long pedicels, which are either terminal or axillary on the upper part of the plant.

Diverse-leaved Wahlenbergia. Pl. procumbent.

12 W. Madagascanis (Alph. D. C. mon. p. 139.) stem erect, branched, glabrous, not very leafy, rather pilose above; leaves strictly opposite, ovate, acute, crenated, glabrous; calyx rather pilose, with a spherical tube; corolla profoundly 5-cleft, length of the calycine segments; capsule spherical. O. ? H. Native of Madagascar. Stem branched from the base. Flowers solitary, pedicellate, situated in the axils of the forks of the branches.

Madagascar Wahlenbergia. Pl. ½ foot.

13 W. procumbens (Alph. D. C. mon. p. 140. t. 15.) plant glabrous or rather pilose; stems creeping, branched, very leafy; leaves opposite or verticillate, ovate or obovate, nearly entire; tube of calyx ovoid; corolla 5-lobed at top, 3 times longer than the calycine lobes; capsule ovoid, spherical. O. G. Native of the Cape of Good Hope, in watery places. Campanula procumbens, Thunb. fl. cap. p. 174. mem. acad. petersb. 4. p. 373. Lin. suppl. 141. Wahl. répens, Schrad. diss. de Blumenb. p. 57.—Burch. cat. pl. afr. austr. no. 355. Flowers solitary, usually terminal, but sometimes axillary, pedicellate. Corolla pale blue; anthers yellow.

Var. β, foliása (Alph. D. C. mon. p. 140. t. 15. f. 6.) stems shorter; leaves approximate and smaller. G. Camp-

nula, Burch. cat. pl. afr. no. 361. and no. 508. Procumbent Wahlenbergia. Pl. creeping.

* * Seeds dotted. Stems branched, slender, usually procumbent. Leaves petiolate, alternate.


** ** Seeds shining. Stems more or less erect. Leaves alternate, sessile, narrow.

a. Peduncles elongated.

15 W. gracilis (Alph. D. C. mon. p. 142.) stem simple or branched, glabrous or pilose; leaves alternate or nearly opposite, linear-lanceolate, sinuateely toothed, glabrous; calyx smoothish, with an ovoid tube; corolla funnel-shaped, 5-cleft; capsule obovate. G. Native of Van Diemen's Land; and of New Holland, about Port Jackson; and of New Caledonia and New Zealand. All the varieties grow in New Holland, except var. c, which only grows in New Zealand. Campánula gráciaís, Forst. prod. no. 64. Sins. bot. mag. 691. R. Br. prod. p. 561. Campánula vinceflora, Vent. malm. t. 12. Campánula capillaris, Lod. bot. cab. t. 1406. Peduncles terminal and axillary, elongated, 1-flowered. Corolla blue, with a white or yellowish bottom. Anthers yellowish.

Var. β, stricta (Alph. D. C. mon. p. 142.) stem branched, straight; leaves more numerous, opposite, linear-lanceolate; calycine segments linear, exceeding the tube of the corolla a little, which is discouloured on the outside. G. Campánula gráciaís, Smith, exot. fl. t. 45. Campánula gráciaís, β, stricta, R. Br. prod. p. 561.

Var. γ, littorális (Alph. D. C. 1. c.) stem simple, elongated; leaves few, alternate, linear, narrow; calycine lobes acuminate, length of the tube of the corolla. G. Cam-

pánula littorális, Labill. nov. holl. 1. p. 69. t. 70. Camp. gráciaís, γ, littorális, R. Br. prod. p. 561.

Var. ε, capillárís (Alph. D. C. 1. c.) stem capillary, paniculate; leaves linear, remote; segments of the calyx one-half shorter than the capsule, which is nearly globose. G. Campánula gráciaís, ε, capillárís, R. Br. prod. p. 561.

Var. ζ, polydóphora (Alph. D. C. 1. c.) lower leaves obovate, obuse; middle ones lanceolate; upper ones linear-lanceolate; calycine segments broadish, one-half shorter than the corolla.
CAMPANULACEÆ.


16 W. Chamissoniana; stems ascending, branched at the base, and leafy, but naked at the apex, and forming erect, few-flowered, elongated pedicels, which are furnished with a few bracteas; leaves ovate-lanceolate, sessile, margined by a nerve, obscurely few-toothed, situated and undulated, having the keel and margins running down the stem, sometimes beset with a few spreading, stiff, white hairs, and sometimes glabrous; sterile branches always pilose; bracteoles ovate, acut, ciliat. q. ?

17 W. macranitha (Cham. l. c.) plant taller and slenderer; stems erect, 2-3 feet high; leaves 15 lines long and 3 broad, less undulated and flatter; diameter of corolla half an inch.


Margaritine-leaved Wahlenbergia. Pl. 1/2 foot.

19 W. quadrifidis (Alph. D. C. mon. p. 144.) stem filiform, angular, striated; branches 1-3-flowered; leaves sessile, linear, obtuse, obsequtely and remotely serrulate; flowers quinquefida; corolla exceeding the ovarium a little. q. G. Native of Japan, on the mountains. Campánula lavandulifolia, Blum. bijdr. p. 726.

20 W. saxicoala (Alph. D. C. mon. p. 144.) glabrous; stem short; leaves crowded, lanceolate, a little toothed; peduncles 1-flowered, scape-formed; flowers quadrifida; capsule globose. q. ? G. Native of Van Diemen’s Land. Campánula saxicola, R. Br. prod. p. 561. This is very nearly allied to W. quadrifida.

21 W. Sieberi (Alph. D. C. mon. p. 144) stem branched, very hispid at the base; leaves somewhat denticulated, acute; lower ones obovate-lanceolate, pilose; superior ones linear-lanceolate, smoothish; calyx glabrous, with an ovoid tube; corolla tubular, nearly 3 times longer than the calycine lobes; capsule obovoid. q. H. Native of New Holland. Campánulaceæ, Sieb. fl. nov. holl. no. 577. Peduncles naked, divided into 1-flowered pedicels; the flowers are therefore somewhat panicked. Corolla blue, small. Stem angular at the base.


24 W. a. fulva (Alph. D. C. mon. p. 146.) stem branched, rather pilose on the bottom; leaves linear, rather pilose, entire, acuminate; tube of calyx obovate, glabrous; corolla one-half longer than the calycine lobes; capsule obovoid. q. H. Native of the East Indies, on the Nellygherry mountains, where it was collected by Leschenault, and where it is called Aleka. Habit of W. larioides. Peduncles 1-flowered, glabrous. Flowers terminal, nutant. Capsule erect.

25 W. ripa (Alph. D. C. mon. p. 146.) plant pilose at the base, and glabrous at top; leaves few, undulated toothed, rather hairy: lower ones obovate-lanceolate: the rest narrower, glabrous, and acuminate; calyx glabrous, with an ovoid tube; corolla one-half longer than the calycine lobes; capsule obovoid. q. H. Native of Senegal, in the regions called Podor and Walo, where it was collected by Leprieur and Perrottet. Campánula riparia Lepr. et Perrott. in lit. Stem simple or branched, leafy at the base, and naked at the top. Peduncles erect, divided into filiform 1-flowered pedicels.

26 W. ru'fullis (Alph. D. C. mon. p. 147.) plant pilose at the base, and glabrous at top; leaves much crowded at the bottom, linear-lanceolate; upper ones ligulate; calyx glabrous, with an ovoid narrow tube; corolla one-half longer than the calycine lobes; capsule ovoid. q. H. Native of the Cape of Good Hope. Campánulaceæ, Burch. cat. pl. af. no. 2769. Habit of W. Capensis. Stem erect, only leafy at the base. Leaves greyish-green, with white edges. Flowers solitary, terminal.

branched, pilose at the base; lower and middle leaves ovate, acute, irregularly toothed, and pilose: superior ones narrower, nearly entire, smoothish; tube of calyx glabrous and obconical; lobes of calyx with revolute serrately ciliated margins; corolla funnel-shaped, 2 or 3 times longer than the calyx lobes, somewhat 5-cleft at the apex; capsule obovate. O. H. Native of the Cape of Good Hope. Campanula cernua, Thunb. prod. p. 39. mem. acad. peterb. 4. p. 376. t. 7. f. 1.—Comm. hort. 2. t. 36. Stem very leafy at the base. Peduncles erect, elongated, terminating in numerous 1-flowered filiform pedicels. Corolla funnel-shaped, with a white base, and blue lobes, drooping in the bud state.


Undulated-leaved Wahlenbergia. Pl. 1 to 1 1/2 foot.

30 W. nudaefolia (Alph. D. C. mon. p. 149.) stem branched, rather pilose at the base; leaves obovate or lanceolate, undulately crenated, rather pilose; calyx glabrous, with a nearly spherical tube, and entire lobes; corolla broadly funnel-shaped, deeply 5-cleft, 3 or 4 times longer than the calyx lobes; capsule spherical. O.? G. Native of the Cape of Good Hope. Root cylindrical at its top, branched at the base. Stems numerous, branched, usually dichotomous. Leaves nearly all at the base of the plant, obtuse or acute. Flowers very numerous, terminating the slender naked pedicels. Corolla funnel-shaped, blue, 2 drooping in aestivation.

Var. β. Flowers larger.—Campanula elongata, Banks, herb.

Naked-stemmed Wahlenbergia. Pl. 1 foot.

31 W. androsaceae (Alph. D. C. mon. p. 150. t. 19. f. 1.) stem simple, naked, few-flowered, glabrous; radical leaves rosulate, ovate-lanceolate, on short petioles, acute, denticulated, pilose; calyx glabrous, with a hemispherical tube, and short broad entire lobes; corolla broadly funnel-shaped, profoundly 5-cleft, 2 or 3 times longer than the calyx segments; capsule spheroid. O. G. Native of the Cape of Good Hope. Campanulasceae, Burch. cat. geol. pl. afr. austral. no. 2273. Stem twice dichotomous at top, and nearly naked, except the bracteae at the base of the pedicels. Branches 2, divided into 2 1-flowered pedicels at the apex. Flowers erect in the expanded state, but drooping in the bud state, probably blue.

Androsace-like Wahlenbergia. Pl. 1/2 foot.

32 W. stellarioides (Cham. in Schlecht. in Linnaea. 7. p. 196.) stems ascending, a little tufted, filiform, tetragonals, glabrous; leaves opposite, somewhat connate approximately, lanceolate, acute, with revolute edges, and the nerve slender, pilose, or glabrous beneath; flowers terminal and lateral, on long pedicels; ovarium elliptic, short; calyx segments very like the leaves, but one-half shorter than the corolla; corolla funnel-shaped, 5-cleft to the middle, with acute ovate segments. 2. G. Native of Caffraria. Stem branched at the base. Stamens 5. Calyx segments reflexed.

Sticknort-like Wahlenbergia. Pl. 1 to 1 1/2 foot.

33 W. xutabunda (Alph. D. C. mon. p. 151.) plant pilose at the base; stem simple, or branched at the base; lower leaves lanceolate-ovovate, nearly entire, with the nerves and margins pilose; the rest lanceolate, acute, smoothish, and irregularly toothed; calyx glabrous, with an ovoid tube; corolla cylindrical, 5-lobed, hardly one-half longer than the calyx lobes; capsule obovate. O. H. Native of Calabria, near Reggio, on very arid hills; and of Sardinia, in the fields of Carbone and Tortote, ex Moris. Campanula nutabunda, Guss. in Ten. supp. p. 19. ad fl. neap. prod. p. 8. pl. rar. p. 94. t. 18. Mor. stirp. sard. elench. p. 30. Habit of W. lobelioides. Leaves numerous at the base of the plant. Peduncles nearly naked, elongated, drooping when bearing the flowers, but at length erect, 1-flowered, glabrous. Corolla white.

Nodding-flowered Wahlenbergia. Pl. 1/2 foot.

6. Peduncles shorter.

34 W. exilis (Alph. D. C. mon. p. 151.) stem much branched, rather pilose at the base; branches glabrous, filiform; leaves linear, subulate, entire, rather pilose; tube of calyx glabrous or roughish, obconical; corolla tubular, 5-cleft at the apex, scarcely one-half longer than the calyx lobes; capsule obovate, narrow. O. H. Native of the Cape of Good Hope. Burch. cat. no. 105. Stem quite glabrous at top. Pedicels mostly axillary, 1-flowered, reddish.

Slender Wahlenbergia. Pl. 1/2 to 1/4 foot.

35 W. denticulata (Alph. D. C. mon. p. 152. t. 16.) stem much branched, glabrous, but rather scabrous above; leaves narrow-linear, acuminate, glabrous, remotely denticulated; calyx glabrous or scabrous, with a hemispherical tube, and dentilolated lobes; corolla deeply 5-cleft; capsule spheroid. O. H. Native of the Cape of Good Hope, in the interior of the country. Campanula denticulata, Burch. cat. pl. afr. no. 2000. trav. 1. p. 538. Flowers numerous towards the tops of the branches. Pedicels axillary and terminal, 1-flowered, diverging much from the stem. Corollas blue?

Var. β. scabra (Alph. D. C. l. c.) peduncles and calyces rather scabrous.

Burch. cat. pl. afr. no. 2305.

Denticulated calyced Wahlenbergia. Pl. 1/2 foot. Var. β. 2 in.

36 W. krebsii (Cham. in Schlecht. Linnaea. 7. p. 195.) stems rather herbaceous, filiform, procumbent, very leafy at the origin of the fertile branches, tetragonal; angles beset with retrograde bristles; leaves crowded, spreading, rather stiff, liniage or obovate-oblong, obtuse or acute, sinuate-toothed, with reflexed margins, having the keel and margins pilose or glabrous; branches erect, naked above, elongated, divided into an irregular branched panicle; bracteoles quite entire, acute; ovarium globose; calyx segments oblong-triangular, bluntnish, almost nerveless, pilose, with scabrous edges; corolla funnel-shaped, quinquelid, 5 times longer than the calyx; lobes short. 2. G. Native of Caffraria. Stem tumid below the leaves. Stamens 5. Stigma bifid. Panicle 4-8-flowered. Pedicels half an inch long, furnished each with one bractea. Capsule half inferior, 3-celled, 3-valved. Seeds ovate or elliptic, smooth, shining brown.

Krebs's Wahlenbergia. Pl. procumbent.

37 W. dunanthi (Alph. D. C. mon. p. 152.) stem branched, stiffish; leaves linear-lanceolate, narrow, acuminate, entire, pilose; tube of calyx pilose, small, hemispherical; lobes of calyx long, subulate; corolla tubular, 5-lobed at the apex, rather longer than the calyx lobes. O. H. Native of the Cape of Good Hope, where it was collected by Eklon. Stem slightly pilose. Peduncles dichotomous, diverging, rather pilose. Pedicels 1-flowered. Flowers drooping.

Dunant's Wahlenbergia. Pl. 1/2 foot.

38 W. massonii (Alph. D. C. mon. p. 153.) plant small; stem branched, pilose; leaves linear, narrow, entire; calyx pilose, with a hemispherical tube and capillary lobes; corolla narrow,
funnel-shaped, 5-lobed at the apex, 2 or 3 times longer than the calycine lobes; capsule spherical. O. 2. Native of the Cape of Good Hope. Flowers racemose or panicled at the tops of the branches, numeros. Pedicels 1-flowered.

**Masson’s Wahlbergina.** Pl. ½ foot.

**39 W. Brasiliensis** (Cham. in Linnaea t. 7. p. 318.) glabrous; branches an直t; radical, simple, angular; leaves few, small, subulate, entire, concave, keeled, blanched; panicle terminal, subfastigiatly corymbose and spike-formed, coarctate; ovary obconical; calycine segments like the leaves; corolla 5-cleft to the middle. 24. S. Native of Brazil within the tropic. Very like W. liniariifolia. Flowers white. Corolla very like that of Campānula rotundifolia, but much smaller.

**Brazilian Wahlbergina.** Pl. ½ foot.


**Panicled-flowered Wahlbergina.** Pl. ½ to ¾ foot.

**41 W. Banksiana** (Alph. D. C. mon. p. 154.) stem glabrous, simple at the base, but panicled at the apex; leaves linear, narrow, remotely denticulated, acuminate; tube of calyx quite glabrous, spherical; calycine lobes linear, narrow, denticulated; corolla funnel-shaped, 5-lobed at the apex, one-half longer than the calycine lobes. O. G. Native of the Cape of Good Hope. Campānula banksiana, Smith, in herb. Banks. Pedicules and pedicels slender, but stiff and divaricate. Flowers erect, 6-10 in number.

**Banks’s Wahlbergina.** Pl. ¼ to ¾ foot.


**43 W. spinulosa** (Alph. D. C. mon. p. 155.) plant hum bolt, much branched; branches stiff, glabrous, or rather scabrous; leaves narrow-linear, glabrous or pilose, denticulated, stiff, ending each in a hard point; tube of calyx glabrous, spherical; lobes of calyx with revolute ciliate margins; corolla narrow, 5-lobed at the apex; capsule spherical. —Native of the Cape of Good Hope. Campānula spinulosa, Banks, herb. Flowers terminal and axillary, solitary; pedicels stiff, and appearing like spines after the capsules have fallen.

**Spinulose Wahlbergina.** Pl. 1 to 3 inches.


**Capillary-pediculed Wahlbergina.** Pl. 1 foot.

**Sect. III. Cervicina** (from cervix, the neck; because some plants of this order are called Throat-mort). Alph. D. C. mon. p. 156.—Cervicina, Del. fl. d’egypt. t. 7. f. 2, Calyx and corolla 3-5-lobed. Stamens 3, Capsule 2-celled. Seeds triquetrous, acute at one extremity, and truncated at the other. —An humble annual herb. Leaves alternate, sessile, narrow. Flowers on short pedicels.

**45 W. cervicina** (Alph. D. C. mon. p. 156.) plant small; stem much branched; branches diverging, rather pilose; leaves linear-lanceolate, a little denticulated; tube of calyx rather pilose, ovoid; corolla tubular, rather longer than the calycine lobes; capsule spherical. O. F. Native of Egypt and Sénégal, in sandy and arid places. Cervicina campalnuloides, Del. fl. egypt. t. 7. f. 5. f. 2. Leaves with white margins. Flowers numerous, pedicellate, solitary from the axis of all the leaves and tops of the branches.

**Throatwort Wahlbergina.** Pl. ¾ foot.


**Sect. V. Lasiocarpae (the species contained in this section have the habit of *Lvinaria*).** Alph. D. C. mon. p. 158. Calyx and corolla 5-lobed. Stamens 5. Capsule 2-celled. Seeds lenticular, shining.—Perennial herbs, with alternate, sessile, narrow leaves. Flowers on long peduncles and pedicels.

**47 W. lasiocarpa** (Alph. D. C. mon. p. 158,) stem erect, simple at the base, glabrous or scabrous; leaves linear, acuminate, narrow, glabrous, subdenticulated; tube of calyx glabrous, obconical; corolla funnel-shaped, deeply 5-cleft, one-half longer than the calycine segments; capsule obconical. 2. G. Native of South America, about Monte Video; and of Chili. Campānula lavioides, Lam. dict. 1. p. 580. Rœm. et Schultes syst. 5. p. 107. Campānula Chilensis, Presl. in herb. Hantke. Stem more or less panicked at top. Flowers panicked, terminating the branches and peduncles, and also axillary. Branches naked. 1-3 flowered. Flowers drooping when open. Corollas blue.

G. Native of St. Helena, in the fissures of rocks in Sandy Bay. Flowers pure white, erect, and rather large. Roella angustifolia, Roxb. in Beats. St. Hel. p. 320. Perhaps the same as \textit{W. cliviosa}.

**Narrow-leaved Wahlbergia.** Pl. procumbent.


**Flax-leaved Wahlbergia.** Shrub.

54 \textit{W. ensifolia} (Alph. D. C. mon. p. 162.) plant frutescent, simple; stem thick, erect, naked at the base, but very leafy in the middle; leaves long-lanceolate, acuminate, ciliate, sharply serrated; teeth setaceous; calyx with a glabrous obconical tube, and entire ciliated lobes; corolla large, campanulate, somewhat 5-cleft, one-half longer than the calyce lobes. \(\delta\). S. Native of Bourbon, on the Burning Mount. Campanula ensifolia, Lam. dict. 1. p. 582. ill. no. 2518. Bracteas ciliated. Flowers 1-5 at the top of each peduncle. Corollas large, an inch long, dirty yellow, marked with 5 purple spots at bottom. Between \textit{Miaschium} and \textit{Hedl. foliosa}.

**Sword-leaved Wahlbergia.** Shrub 1 foot.

† \textit{A doubtful species.}


**Ovate-leaved Wahlbergia.** Pl. \(\frac{1}{2}\) foot.

**Cult.** For the culture and propagation of the annual species of this genus, see \textit{Microcodon}, p. 737. The frame and greenhouse perennial and shrubby species, as \textit{Lichtsottonia}, p. 755. The hardy perennial species should be grown in pots, in a mixture of peat and loam, and kept rather moist; and they are easily increased by division.

**X. PRISMATOCA R PUS (\textit{Pi}\textit{sa n} \textit{p} \textit{u} \textit{m} \textit{a} \textit{t} \textit{o} \textit{m} \textit{a} \textit{t} \textit{o} \textit{m} \textit{a} \textit{t}, a prism, and \textit{k} \textit{o} \textit{r} \textit{t} \textit{o} \textit{s}, \textit{k} \textit{a} \textit{r} \textit{t} \textit{o} \textit{s}, a fruit; in reference to the long prismatical form of the fruit).** Alph. D. C. mon. p. 164. Prisomatocarpus species, Lher. tert. angl. p. 1. exclusive of the European species. — Campanula, sect. Legouisia, Pers. euch. 1. p. 192. exclusive of the European species.

**LIN. SYST. PENTANDRIA, MONOGLANIA.** Calyx 5-lobed, with a cylindrically elongated tube. Corolla 5-lobed at the apex. Stamens 5, alternating with the lobes of the corolla. Anthers distinct. Style permanent at the base; stigmas 2. Capsule 2-celled, wholly inferior, prismatic or cylindrical, elongated, splitting from the top towards the base into 5 segments. Seeds inserted the whole length of the central placenta, ovoid, somewhat compressed, obtuse, dotted. — Subslipubs and stiff herbs, all natives of the Cape of Good Hope. Leaves alternate. Flowers sessile, solitary or approximate, always inserted in the axils of the leaves or bracteas.

* Corolla narrow. Style exerted. Leaves few on the upper parts of the plants.

1 \textit{P.} diffusus (Alph. D. C. mon. p. 164.) suffrutescent; leaves linear, very narrow, entire; flowers in loose panicles; peduncles diverging, stiff; bracteas subulate; calyce lobes

* * * Corolla funnel-shaped. Style inclosed. Leaves few on the upper part of the plant.


Panicled-flowered Prismatocarpus. Shrub 1 foot.


Subulate-leaved Prismatocarpus. Shrub ½ foot.

5 P. Alíflórus (Lher. sert. angl. p. 1. Alph. D. C. mon. p. 167.) suffrutescent; leaves linear-subulate, entire, ciliate; flowers few, approximate at the tops of the peduncles; bracteas subulate; lobes of calyx ovate, acute, velvety.试剂. G. Native of the Cape of Good Hope. Roella erecta, Banks, herb. Campânula alíflóra, Poir. suppl. 2. p. 66.—Habit of P. paniculatus. Stem nearly simple, glabrous, naked at the base and top, but leafy in the middle, divided at the top into 2 peduncles. Leaves often having fascicles of smaller ones in their axils.

High-flowered Prismatocarpus. Shrub 1 foot.


7 P. Eklòni (Alph. D. C. mon. p. 168.) suffrutescent; leaves linear-subulate, long, erect, entire, glabrous; flowers disposed in loose spikes; bracteas subulate, broader than the leaves at the base; calyce lobes linear-lanceolate, glabrous.试剂. G. Native of the Cape of Good Hope. Eklòni frutícósus, Eklon, in herb. Dunant, but not of Lher. Stem branched; branches erect, leafy at the base and rather velvety, and reddish at top. Flowers solitary in the axils of the bracteas.

Eklon's Prismatocarpus. Shrub ¼ foot.


Curl-ed-leaved Prismatocarpus. Pl. 1 to 2 feet.

9 P. Linarílepólius (Alph. D. C. mon. p. 169.) stem herbaceous; leaves few, linear, narrow, ciliate a little at the base; flowers spicate, solitary or twin; bracteas broad-ovate, acuminate, ciliate; calyce lobes oblong-linear, glabrous.试剂. G. Native of the Cape of Good Hope. Stem erect, simple, furnished with a few floriferous leafy branches, striated with white nerves. Flowers disposed in loose spikes.

Toad-flax-leaved Prismatocarpus. Pl. 1 to 2 feet.

10 P. Stáctus (Alph. D. C. mon. p. 169.) plant herbaceous, simple; leaves linear, acuminate, erect, glabrous, serrately toothed; flowers in fascicles; bracteas ovate, acute, setaceous ciliate; lobes of calyx linear, acuminate, glabrous.试剂. G. Native of the Cape of Good Hope. Líghtfôtia sessíllifóra, Spry. in Líghfôt. Fl. cap. no. 203. and probably of Spreng. syst. 1. p. 809. Stem simple, stiff, furnished at top with few-flowered peduncles, glabrous, very leafy from the base to the middle, but naked at top. Leaves decurvent. Flowers sessile, usually 2-3 in a fascicle, from the axils of the bracteas, at the upper part of the stem.

Straight Prismatocarpus. Pl. 1 foot.

** * * Corolla funnel-shapped. Style inclosed. Leaves scattered equally over the whole plant.


12 P. Sesílis (Eklon, in herb. Dunant. ex Alph. D. C. mon. p. 171.) plant rather woody, glabrous; leaves spreading, linear, narrow, entire; flowers solitary, in the axils of the upper leaves; calyce lobes subulate, glabrous.试剂. G. Native of the Cape of Good Hope. Stem much branched; branches diffuse, erect or ascending, reddish. Flowers small.

Sessile-flowered Prismatocarpus. Pl. ¼ foot.

Cult. All the species of this genus are rather showy when in flower. A mixture of sand, loam, and peat is the best soil for them. They are readily increased by seed; or young cuttings grow freely if planted in the same kind of soil, with a handglass placed over them.

Linn. syst. Pentándria, Monogynia. Calyx 5-cleft. Corolla funnel-shaped or tubular, large, 3-lobed (129. b). Stamens 5; filaments broadest at the base. Anthers free. Stigmas 2, thick. Capsule cylindrical, 2-celled, wholly inferior, perforated by the permanent base of the style, and therefore appearing as if it was covered by an operculum, and at length dehiscing by a large hole at the apex, without valves. Seeds angular, sebaceous, thick.—Sub-shrubs, rarely herbs. Leaves numerous, always alternate, scattered over the whole plant, usually narrow and stiff. Flowers sessile, terminal, and sometimes axillary. All the species are natives of the Cape of Good Hope.

* Plants perennial. Stem woody, more or less erect. Leaves stiff. Tube of calyx covered by the leaves.

1. R. incú'rva (Banks, herb. ex Alph. D. C. mon. p. 172.) leaves linear, acuminate, incurved at the apex: lower ones setaceous ciliated: superior ones lanceolate or toothed; flowers solitary; lobes of calyx glabrous, linear, toothed; corolla variegated, length of the calyzone lobes. * G. Native of the Cape of Good Hope. Flowers solitary, terminal, surrounded by imbricate leaves.

** Incised-leaved Roella. Shrub 1 foot.

2. R. ciliá'ta (Lin. spec. 1. p. 241.) leaves erect, linear, acuminate, ciliated: superior ones longer and entire; flowers solitary; lobes of calyx ciliated, and lanceolate or toothed; corolla variegated, large, longer than the calyzone lobes. * G. Native of the Cape of Good Hope and Barbary. Geertr. fruct. 1. p. 154. t. 21. f. 3. Lam. ill. t. 129. f. 1. Curt. bot. mag. t. 378. Lodd. bot. cab. 1156. Delaun. herb. amat. 56. fasc. t. 382. Roella, Lin. hort. clif. p. 499. t. 35. Flowers solitary, terminal, surrounded by imbricate leaves. Corollas white at bottom, even to the base of the lobes, where there is a deep purple circle, and above the circle pale violet, girded by white, and lastly the lobes themselves are rose-coloured (f. 129).


3. R. reticulá'ta (Lin. spec. 1. p. 241.) leaves erect, subulate, ciliated; flowers solitary; lobes of calyx ciliated, entire, white; corolla white, twice the length of the calyzone lobes. * G. Native of the Cape of Good Hope. Lam. ill. 2577.—Petiv. mus. 21. f. 157. ex Lin.—Roy. lugd. 248. Stems or branches pilose, very leafy. Flowers solitary, terminating the branches, and axillary at the top of the stem.

Reticulated-leaved Roella. Shrub ¾ to 1 foot.


** Perennial, trailing, branched plants. Branches filiform, very leafy. Leaves stiff. Tube of calyx naked, filiform.


Dunant's Roella. Shrub 1 foot.

6. R. ciné'rea (Alph. D. C. mon. p. 175.) leaves erect, linear, subulate, remotely denticulated, rather ciliolate at the base; flowers solitary or in fascicles; lobes of calyx entire, glabrous; corolla twice the length of the calyzone lobes. * G. Native of the Cape of Good Hope. Campánula cinérea, Thunb. prod. p. 38. mem. acad. petersb. 4. p. 356. t. 6. f. 4. R. glabrélía, Banks, herb. Stem simple. Leaves usually furnished with smaller ones in their axils. Flowers sessile, 4-6 at the top of each stem, surrounded by leaves.

Cinerous Roella. Shrub 1 foot.


Spiked Roella. Shrub decumbent.

8. R. squarro'sa (Thunb. in Lin. suppl. p. 134.) leaves ovate, acute, decurrent, cuspidate at the apex, and recurved, with ciliated and setaceous toothed margins; flowers glomerate; bracteas broad, ovate, acuminate; lobes of calyx ovate, acuminate, ciliated, one-half shorter than the corolla, which is white. * G. Native of the Cape of Good Hope. Lam. ill. 2579. Ait. hort. kew. ed. 2d. vol. 1. p. 354. Stem branched, reddish; branches diffuse, reddish. Flowers disposed in terminal fascicles.


** Plant annual. Stem herbaceous, erect. Leaves thin, broad. Tube of calyx naked, ovoid.

9. R. musc'ósá (Thunb. in Lin. suppl. p. 143. prod. p. 38.) leaves spreading, ovate, acute, remotely serrate, glabrous; flowers solitary; lobes of calyx ovate-acuminate, entire, glabrous, or a little ciliated, 3 or 4 times shorter than the corolla, which is blue. * G. Native of the Cape of Good Hope, in a large ditch in front of the Table Mountain. Röem. et Schultes, syst. 5. p. 75. Alph. D. C. mon. p. 177. R. caespítosa, Banks, herb. Burch. cat. pl. afr. no. 636. A humble trailing plant, with diffuse branches. Flowers terminal, sessile.


** Plant annual. Stem herbaceous, erect. Leaves thin, broad. Tube of calyx naked, ovoid.

10. R. decú'rens (Lher. sert. angl. p. 2. t. 6.) leaves spreading, decurrent, ovate-oblong, ciliated at the base, nearly entire; flowers solitary; lobes of calyx acuminate, ciliated, 3 times shorter than the corolla. * G. Native of the Cape of Good Hope. Ait. hort. kew. ed. 1st. vol. 1. p. 226. Lam. ill. no. 2589. Röem. et Schultes, syst. 5. p. 74. exclusive of syn. bot. rep. t. 238. Stem branched, very leafy, pilose. Flowers terminal, blue?


5 C
CAMPANULACEÆ. XI. Roella. XII. Phyteuma.

† Doubtful species.


Peduncled-flowered Roella. Shrub 1 foot.


Bracteate-flowered Roella. Shrub 1 foot.

Cult. For culture and propagation, see Prismatocarpus, p. 744.

Tribe II.

CAMPANULÆ (this tribe contains plants agreeing with the genus Campæula in the fruit dehiscing laterally). Capsules dehiscing at the sides.


Lin. syst. Pentândria, Monogynia. Calyx 5-cleft. Corolla 5-parted; segments cohering together a long time, and in one species always. Stamens 5, alternating with the lobes of the corolla; filaments long, filiform, broadest at the base; anthers free; pollen violaceous or reddish. Style filiform, pilose. Ovarium inferior, 2-3-celled. Capsule dehiscing laterally by 2-3 valves at the base or middle part. Seeds ovoid, sometimes a little compressed, usually shining. — Perennial herbs. Leaves alternate; radical ones petiolate, different from the caulinne ones, larger and broader. Flowers sessile, or on short pedicels, disposed in spikes or heads. — Natives of the temperate parts of Europe, or nearly in the same latitudes in Asia.

Sect. I. Synótoma (from σύν, syn, together; and τομα, toma, a section; in reference to the cohesion of the segments of the corolla). Segments of corolla always cohering at the apex. Filaments hardly broader at the base. Stigmas 2. Capsule 2-celled.


Sect. II. Hедranthum (from ἴκεπα, hedra, a seat; and αὐθος, anthos, a flower; in reference to the flowers being sessile). Segments of corolla cohering a long time at the apex, but at length becoming free. Filaments expanded at the base. Stigmas 2-3. Capsule 2-3-celled. Flowers sessile, densely crowded, usually many from the axil of each bractea.

§ 1. Heads at the time of blossoming hemispherical or globose, but at length either globose or somewhat egg-shaped.

* Bracteas numerous, equal, and broad.

2 P. globularifolium (Stenrb. in Hopke, denk. bot. in gensb. 2. p. 100.) radical leaves crowded, obovate, broad, a little toothed at the apex: caulinne leaves few, sessile, obovate-lanceolate, somewhat ciliated; heads few-flowered; bracteas very broad, ovate-roundish, ciliated, a little toothed at the apex. § H. Native of Illyria, Carniola, and Carinthia, on the alps, and on the alps of Salisburgh. Rchb. icon. bot. cent. 4. p. 49. t. 360. Rem. et Schultz, syst. 5. p. 76. exclusive of syn. All. Vill. Lam. and D. C. Hall. and Bauh. P. pauciflorum, Hænke, in Jaqc. coll. 2. p. 63. Host. fl. austr. 1. p. 274. but not of Lin.—Mor. oxon. 2. p. 464. sect. 5. t. 5. f. 50. Plant glabrous, except the ciliate at the base of the leaves. Corollas blue.


Var. ? Flowers white or yellow. § H. Native of Switzerland.


5 P. Carestîle (Birok, in act. taur. 5. p. 315. with a figure) radical leaves crowded, lanceolate, on long petioles, nearly quite entire: caulinne leaves linear-lanceolate, somewhat serrated; bracteas spreading or reflexed, broad-ovate, acuminate, acutely serrated, glabrous. § H. Native of Corsica, on the moun-
Brugnat. 

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CAMANULACEÆ. XII. PHYTLEUMA.

Var. ε, Colixma (Alph. D. C. mon. p. 183.) radical leaves small, ovate-cordate; lower caule leaves lanceolate, serrated.—

Column. ephr. pt. 1. p. 223. t. 224.


**Bracteas few, unequal, narrow.**


§ 2. Heads cylindrical, conical, or ovate at the time of flowering, but at length they become more elongated.


Var. β; flowers deep blue. 2. H. P. scorzonerifolium, Sims, bot. mag. t. 2271.


12. P. MICHELI (All. pedem. 1. p. 115. no. 427. f. 7—3.) Pl. c 2

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Leaves few, unequal, narrow.


15 P. **Betonicaefolium** (Vill. dauph. p. 2. 518. t. 12. f. 3.) lower leaves oblong, acuminate, simply serrulate: superior ones linear-lanceolate, nearly entire; spikes ovoid, almost bracteas less; stigmas 3. **H.** Native of the Pyrenees, Provence, alps of Dauphiné, Savoy, Switzerland, Appennines, Carniola, Bohemia, &c. Rchb. icon. bot. t. 250. but not of Sims, bot. mag. Stems glabrous. Leaves glabrous or pilose. Corollas blue.


**Speedwell-leaved Rampion.** Fl. June, July. Cl. 1818. Pl. 3, 4 to 1 foot.


**Peach-leaved Rampion.** Pl. 1 to 2 feet.


**Spiked-flowered Rampion.** Fl. July, Aug. Cl. 1597. Pl. 1 to 3 feet.


**Haller’s Rampion.** Fl. July, Aug. Cl. 1822. Pl. 2 to 3 feet.


**Black-flowered Rampion.** Fl. June, July. Cl. 1820. Pl. 1 to 2 feet.


**Balbis’s Rampion.** Pl. 3/4 foot.

**Sect. III. Podántium (from ποδός, pous, podo, a foot; and ἄνθως, anthis, a flower; in reference to the flowers being pedicellate).** Segments of corolla cohering a long time at the apex, but at length free. Filaments expanded at the base. Stigmas 3. Capsule 3-celled.—Flowers on short pedicles, disposed in loose spikes, 2 or 3 rising from the axil of each bracteas.


**Fine-leaved Rampion.** Fl. Aug. Pl. 1 ft.

21 P. **Limoniifolium** (Sibth. et Smith. fl. grac. t. 218.) stem branched; radical leaves on long petioles, quite glabrous, lanceolate, a little toothed; spikes long, interrupted; calyxes glabrous; capsules ovoid, glabrous. **H.** Native of the Levant, on the top of Mounts Olympus and Lebanon; and of Caucasus on the Tâlsh mountains. P. stricta, Sims. bot. mag. 2145. P. virgata. Lodd. bot. cab. t. 667. P. stylosum Schrank, pl. rar. mon. fasc. 5. t. 49. Campânula limoniifolia. Lín. spec. p. 239. Stems twiggy. Plant glabrous. Flowers sessile, blue. **Limonium-leaved Rampion.** Fl. June, July. Cl. 1819. Pl. 2 to 3 feet.

22 P. **Collinum** (Guss. pl. rar. p. 97. t. 19.) stem nearly simple; radical leaves lanceolate, attenuated at both ends, roughish, repandly denticulately; spikes somewhat interrupted; capsules turbinate, sebaceous. **H.** Native of Japayia, on and hills, by the sea side. Campânula virgata, Ten. fl. heasp. 1. p. 66. but not of Labill. Stems downy, simple or a little branched. Leaves glabrous or downy. Corollas blue.

**Hill Rampion.** Pl. 1 foot.

23 P. **lobelioides** (Willd. phytl. 1. no. 20. t. 4. f. 2.) stem
nearly simple, roughish; leaves scabrous, petiolate, linear-lanceolate, acutely dentilicate; flowers scattered, on short pedicels; calyxes scabrous. 4. H. Native of Armenia.—Tourn. cor. p. 4. Flowers solitary or in twin, blue.

*LOBELIA*-like Ramop. Pl. $\frac{1}{2}$ foot.

24 P. LANCEOLATUM (Wild. spec. 1. p. 924. Desf. in ann. mus. 11. p. 55. t. 5, or choix. des. pl. 34. t. 24.) glabrous; stems branched; radical leaves crowded, on short petioles, lanceolate, serrated; flowers scattered, solitary, on short pedicels. 4. H. Native of Armenia. Alph. D. C. mon. p. 204.—Tourn. cor. p. 4. Stems 2-3, rising from the middle of the radical leaves, almost naked. Flowers scattered on the tops of the stems. Corollas white, with red nerves.

*LANCEOLATE*-leaved Ramop. Fl. June, July. Clt. 1826. Pl. $\frac{1}{2}$ to 1 foot.

25 P. REPA'NDUM (Sibth. et Smith, prod. fl. grec. 1. p. 143.) stem glabrous; radical leaves crowded, petiolate, elliptico-oblong, repand, glabrous; petioles imbricated at the base; flowers spicate; bracteate fringed. 4. H. Native of Mount Olympus. Leaves rosulate, very like those of *Globularia acaulis*. Flowers disposed in a loose spike.

*REPAND*-leaved Ramop. Pl. $\frac{1}{2}$ to $\frac{3}{4}$ foot.

26 P. ALZIUM (Wild. spec. 1. p. 925. exclusive of the syn. of Tourn.) stem very simple, glabrous; radical leaves linear-lanceolate, furnished with very minute teeth on the edges; flowers scattered. 4. H. Native of the Levant. Peduncles branched a little, 3-flowered.

*STIFF* Ramop. Pl. $\frac{3}{4}$ foot?

27 P. CANESCENS (Waldst. et Kit. pl. hung. 1. p. 12. t. 14.) plant scabrous; stems simple; cauleine leaves sessile, ovate-lanceolate, crenulat; flowers disposed in long spikes. 4. H. Native of Hungary, Transylvania, Galicia, Podolia, Tauria, and Caucasus. Leaves greyish. Flowers 1-3 from the same bractea, sessile. Corolla of a violet blue colour. Plant yielding a yellow viscid juice.


28 P. SALICIFOLIUM (Waldst. et Kit. ind. Bess. prim. fl. gal. 1. p. 368. Alph. D. C. mon. p. 203.) stem quite simple, glabrous; lower leaves ovate-lanceolate, serrate-toothed; superior ones sessile, lanceolate, acutely serrated; spikes short; calyxes glabrous. 4. H. Native of Hungary, on calcareous rocks. Leaves glabrous, except the margins, which are a little hairy. Spike almost an inch long. Flowers solitary, sessile. Corollas blue or violaceous?

*WILLOW*-leaved Ramop. Pl. $\frac{1}{4}$ to 1 foot.


30 P. AMPLEKICAULE (Wild. spec. 1. p. 925.) glabrous; stems simple; cauleine leaves somewhat stem-clasping, ovate-acute, broad, acutely serrated; spikes dense, fascicled; calyceae lobes capitellary. 4. H. Native of Armenia. Sibth. et Smith, fl. grec. t. 219.—Tourn. cor. p. 4. Flowers sessile, 1-3 from the same bractea. Corollas blue.

*STEM-CLASPING*-leaved Ramop. Pl. 1 to $\frac{1}{4}$ foot.

† Species little known.

31 P. SINNIRUM (Vest. ex Roem. et Schultes, syst. 5. p. 77.) heads many-flowered; flowers all bracteate; bracteas oblong, stiff, acute; leaves all linear-cuneated, toothed; stem erect, leafy. 4. H. Native of Siberia. P. pauciflorum, Johann. herb. ex Roem. et Schultes. Stem 2 inches high. Leaves 3-4 lines long. Heads of flowers like those of some species of *Scabiosa* or *Globularia*.

*Siberian* Ramop. Pl. 2 inches.

32 P. INEQUATUM (Kit. ex Schultes, fl. austr. ed. 2d. no. 883.) heads nearly globoso; radical leaves lanceolate, unequal at the base, cordate, serrated: cauline leaves linear; superior leaves sessile, quite entire. 4. H. Native of Austria. Roem. et Schultes, syst. 5. p. 80. Very nearly allied to *P. Charneelli*.

*UNEQUAL*-leaved Ramop. Pl. $\frac{1}{4}$ to 1 foot.

33 P. FISTULOSUM (Reich. fl. desd. fl. bot. zeit. 5. p. 534.) leaves lanceolate, a little toothed, acuminate; stem erect, simple, pilose, striped; heads cylindrical. 4. H. Native of Austria. P. Scheuchzeri, Schmidt. fl. bohem. fig. fl. desd. ed. 2. P. orbiculare, Buch. fl. desd. fig. desd. ed. 1. P. orbiculare alpinum, Jacq. fl. aust. 437. left-hand figure. This plant has a very peculiar habit, but the flowers have not been seen.

*TISTULAR* Ramop. Pl. 1 foot.

34 P. STYLOSUM (Bess. cat. hort. crem. 1816. Roem. et Schultes, syst. 5. p. 88.) Nothing is known of this plant but this.

*Long-styled* Ramop. Pl.


*Minute* Ramop. Pl. decumbent.

36 P. SUTILIS (Sich. in Spreng. syst. 1. p. 810.) stem creeping, diffuse; leaves spatulate, suberenate; heads terminal; bracteas ovate, crenated, equal in length to the flowers. 4. H. Native of Asia Minor.

*SUPTINE* Ramop. Pl. creeping.

 Cult. All the species of *Phyteuma* being hardy and ornamental, they are well fitted for decorating flower-borders, or rock-work. They grow in any common garden soil, and are readily increased by division or by seeds.

XIII. PETROMARA'ULA (from πετρος, petros, a rock; and μαρο, maren, a bitter herb; the plant is bitter, and grows on rocks by the sea side). Bellus. epis. 1. in Clus. hist. pt. 2. p. 299. Alph. D. C. mon. p. 209. Phyteuma species, Lin. LIN. SYST. PENNANDIRIA, Monogynia. Calyx 5-cleft. Corolla 5-parted. Stamens 5, alternating with the lobes of the corolla; filaments broad at the base, longer than the anthers; pollen violaceous. Style glabrous; stigma capitate, 3-lobed, rather pilose. Ovarium 3-celled, inferior. Capsule erect, dehiscing laterally by 3 pores in the middle part.—An herb, native of Candia.—First radical leaves petiolate, ovate, acute; those afterwards pinnate, with the petioles marginalised and lobed. Flowers pedicellate, disposed in loose racemes.

1 P. PINNATA (Alph. D. C. mon. p. 209.) 4. or 5. H. Native of Candia, on rocks by the sea side. Sweet, fl. gard. n.

Var. β. pubescens (D. C. prod. 4. p. 299.) panicle and calyces downy.


Cult. A light rich soil, and a warm sheltered situation, are the best for this plant. It is increased slowly by division, but plentifully by seed. The plant requires shelter in severe weather in winter.


LIN. SYST. Octandria, Monogyonia. Calyx 8-10-cleft, having the sinuses usually covered by appendages. Corolla 5-lobed or 5-cleft at the apex, usually bell-shaped. Stamens 5, free; filaments broad at the base and membranous. Style covered by foliage, except at the base; stigmas 3-5, filiform. Ovarium wholly inferior, 3-5-celled. Capsule 3-5-valved, dehiscing laterally. Seeds usually ovate, flattened, sometimes ovoid, and small.—Herbs usually perennial, rarely annual or biennial. Radical leaves usually different in form from the cauline ones, especially in size. Flowers for the most part pedunculate, usually racemose, rarely spike or glomerate, blue or white.—All the species are inhabitants of the northern hemisphere.

The names Trachelium and Cervicaria are the oldest names used for this genus, which were given to it on account of its supposed efficacy in the cure of disorders of the neck and trachea; hence it has the name of Halskraut or Halstwurt in German, Haltsurt in Danish, and Throatwort in English; and some European species have the name of Rapunclus, from the resemblance of the root to that of a turnip; hence they have the names Rupins, Rapuntins, Rapunsels, &c., from whence spring the French name Raiponce, the German Rapunzel, and the Spanish one of Rapunchigo, and the English one of Rampion.


§ 1. Capsule 5-celled. Stigmas 5.—Stems many-flowered. Radical leaves on long petioles.—Inhabitants of Greece and the adjacent regions.

* Lower leaves irregularly lyrate or jagged; petioles margined and lobed.

1 C. crispa (Lam. dict. 1. p. 581.) glabrous; stems simple; leaves smooth, coarsely and crenately toothed: radical ones oblong or elliptic, ovate, acute; flowers pyramidal racemose; calyx scabrous, and the appendages of the sinuses small and tooth-formed; corolla broad, campanulate, roughish on the outside.

2 C. Ceilii (Alph. D. C. mon. p. 217.) plant velvety; stem ascending; lower leaves irregularly lobed; terminal lobe crenated, ovate, acute: superior leaves sessile, obovate crenated; flowers disposed in long panicles; appendages of the sinuses of
the calyx small, tooth-formed; corolla tubular, velvety, 4 times longer than the calyceous lobes.  3. H. Native of Greece. C. tomentosa, Vent. hort. cels. t. 18. Stem branched. Corollas pale violet.

Celtis Bell-flower. Pl. 2 feet.

4 C. AUTRATIS (Sibth. et Smith. prod. 1. p. 142. fl. greec. t. 215.) stems ascending, pilose; leaves hoary; radical ones irregularly pinnate, crenately toothed; terminal lobe roundish; cauline leaves sessile, ovate, a little toothed; flowers disposed in loose racemes; lobes and appendages of calyx triangular; corolla velvety, tubular, twice longer than the calyceous lobes.  3. H. Native of Spain and the Morea, among rocks. C. lanuginosa, Willd. in hort. berol. 1. p. 213. but not of Lam. Stems branched. Corolla pale blue, with a white throat.

Rock Bell-flower. Pl. ascending.

5 C. LYRATA (Lin. dict. 1. p. 588.) plant hispid; lower leaves petiolate, cordate, ovate, acute, crenated; superior ones sessile, ovate-lanceolate, serrate-toothed; flowers racemose; appendages of the sinuses of the calyx ovate-lanceolate, one-half shorter than the lobes, which are long-acuminated; corolla tubular, silky, hardly twice the length of the calyceous lobes.  3. H. Native of the Levant. C. lanuginosa, Willd. in hort. berol. 1. t. 213. but not of Lam. Stem branched. Peduncles 1-5-flowered. Corollas white.


6 C. ANDREWSII (Alph. D. C. mon. p. 220.) plant villous; radical leaves lyrata-pinnatifid: lobes cut; lower cauline leaves petiolate, subcordate, roundish, coarsely toothed; upper ones sessile, obuciuneiform, toothed; flowers disposed in loose racemes; appendages of the sinuses of the calyx ovate, obtuse, length of lobes; corolla tubular, with rather pilose nerves, twice longer than the calyceous lobes.  3. H. Native of the Levant, and about Constantinople. Stem branched. Flowers disposed in a long, many-flowered, loose raceme, violaceous.


7 C. ALCIRII (Lin. spec. 1. p. 237.) stems rather velvety; leaves rather pilose: radical leaves ovate-lanceolate, coarsely jagged; petals margined and lobed; flowers disposed in loose panicles; appendages of the recesses of the calyx ovate, acute, one-half shorter than the lobes; corolla large, campanulate, 3 times longer than the calyceous lobe.  3. H. Native of the Archipelago, among rocks in the island of Cardiottis. Lam. dict. 1. p. 588. Stem branched. Cauline leaves ovate-lanceolate, sessile; smaller and less jagged than the radical ones. Corollas pale blue.


8 C. ANCHUSAFLORA (Sibth. et Smith, prod. 1. p. 141. fl. greec. t. 212.) stems branched, rather velvety; leaves pilose, ovate-lanceolate; radical leaves petiolate, jagged; cauline ones sessile; flowers disposed in loose panicles; calyces smooth; appendages of the sinuses of the calyx ovate, acute, one-half shorter than the lobes.  3. H. Native of Greece, in the island of Polycandro, and among rocks by the sea side in the island of Hydra. Primordial leaves ovate, crenated. Flowers copious, rather nutant, fine blue.

Anchusa-flowered Bell-flower. Pl. 1 foot.

9 C. TUBVLOSA (Lam. dict. 1. p. 586.) plant pilose; stems terete; petals of the lower leaves long, shortly lobed: limb ovate, acute, crenately toothed: superior leaves ovate-lanceolate, serrate-toothed; appendages of the sinuses of the calyx obtuse, one-half shorter than the lobes; corolla velvety, tubular, twice the length of the calyceous lobes. 3. H. Native of the Island of Candia. Flowers few, axillary and terminal, of a greyish violet colour.

Var.  β; petals of radical leaves less lobed.  3. H. Native of Candia. C. tubulosa, Desf. pl. cor. in ann. mus. 11. p. 142. t. 17.—Tourn. cor. p. 3.

Tubular-flowered Bell-flower. Pl. 1 to 2 feet.

** Lower leaves regularly ovate or lanceolate; petals not margined.

10 C. BETONICEFOLIA (Sibth. et Smith, prod. 1. p. 141. fl. greec. t. 210. but not of Bieb.) stem erect; leaves elliptic-oblong or ovate, acute, crenately-oblong or ovate, acute, crenately-toothed: radical leaves on short petioles; calyceous lobes ovate-acute, having the sinuses reflexed and length of the lobes; corolla tubular.  3. H. Native of Mount Olympus, in Bithynia. Plant pilose. Stem branched. Flowers terminal and axillary; the branchlets usually bearing 3 flowers. Corollas purplish-blue, with a pale yellow base.


11 C. CORYMCIBA (Desf. pl. cor. in ann. mus. 11. p. 139. i. 15. choix. p. 40. t. 30.) stem erect; leaves ovate-acute, crenate-toothed: radical ones petiolate: cauline ones sessile; lobes of calyx long-acuminated; appendages of the sinuses of the calyx ovate-acute, one-half shorter than the lobes; corolla campanulate-tubular.  3. H. Native of Candia.—Tourn. cor. 3. Plant pilose. Stem branched. Flowers disposed in loose corymbs, 1-3 at the top of each branch. Corolla bluish violet.

Corymbosa-flowered Bell-flower. Fl. May, July. Cit. 1820. Pl. 2 feet.

12 C. PELYRIFOLIA (Lam. dict. 1. p. 586. Desf. choiox. in ann. mus. 11. p. 141. t. 16.) stems ascending; radical leaves petiolate, ovate, crenately-toothed: cauline ones nearly sessile, ovate-acute; calyceous lobes ovate-acuminated; appendages of the recesses of the calyx length of lobes, ovate-roundish; corolla large, campanulate.  3. H. Native of Candia.—Tourn. cor. nat. p. 3. Plant hairy. Flowers 1-4 at the extremity of each branch. Corollas large, of a greyish-blue colour.

Bowser-shaped Bell-flower. Pl. 1 foot, ascending.

13 C. MESEMIA (Lin. spec. 1. p. 236.) stem erect; leaves sessile, ovate-lanceolate, crenately-toothed; calyceous lobes ovate-acuminated, with the appendages of the sinuses reflexed and large, but one-half shorter than the lobes; corolla campanulate, inflated.  3. H. Native of the south and east of Europe, as about Naples, Carniola, about Constantinople, north of Italy, Provence, Dauphiny at a place called Grande-Chartreuse, Bavaria, Thuringia, Austria, Transylvania, &c., on the mountains; and of Caucasus and Tauria, Hill. syst. 8. t. 7. St. Hil. pl. de. fr. t. 72. C. grandiflora, Lam. fl. fr. 3. p. 354. Μηδεν, Dioec.—Debry, flor. nov. t. 75. Tabern. icon. 315.—Svert, flor. t. 16. f. 6.—Park. parad. 555. f. 3.—Lob. icon. 324.—Besl. hort. syst. 1. t. 3. f. 2-3.—Mor. oxon. 2. p. 459. sect. 5. t. 3. f. 30.—Garid.
CAMPANULACEAE. XV. CAMPAANULA.

**C. saxatilis** (Lin. spec. p. 237.) glabrous; stems erect; leaves ciliate; radical ones on long petioles, cuneate-spatulate, ciliated, at the base: lobes of calyx broad, acuminate, glabrous, twice shorter than the lobes; appendages of the sinus of the calyx acuminate, doubly shorter than the lobes. **C. Allionii**. Root creeping. Radical leaves an inch long: cauline ones 2 to 3 lines long. **Pallas's Bell-flower.** Pl. ½ foot.

**C. pallasiiana** (Röem. et Schultes, syst. 5. p. 138.) stem 1-flowered, glabrous; leaves glabrous, lanceolate, serrated, petiolate; flower nutant; calyces segments acute. **C. H. Native of Siberia.** Like **C. Allionii.** Root creeping. Radical leaves an inch long: cauline ones 2 to 3 lines long. **Pallas's Bell-flower.** Pl. ½ foot.

**C. saxatilis** (Lin. spec. p. 237.) glabrous; stems erect; leaves ciliated: radical ones on long petioles, cuneate-spatulate, ciliated, at the base: lobes of calyx broad, acuminate, glabrous, twice shorter than the lobes; appendages of the sinus of the calyx acuminate, doubly shorter than the lobes. **C. H. Native of Siberia.** Like **C. Allionii.** Root creeping. Radical leaves an inch long: cauline ones 2 to 3 lines long. **Pallas's Bell-flower.** Pl. ½ foot.

**C. saxatilis** (Lin. spec. p. 237.) glabrous; stems erect; leaves ciliated: radical ones on long petioles, cuneate-spatulate, ciliated, at the base: lobes of calyx broad, acuminate, glabrous, twice shorter than the lobes; appendages of the sinus of the calyx acuminate, doubly shorter than the lobes. **C. H. Native of Siberia.** Like **C. Allionii.** Root creeping. Radical leaves an inch long: cauline ones 2 to 3 lines long. **Pallas's Bell-flower.** Pl. ½ foot.

**C. saxatilis** (Lin. spec. p. 237.) glabrous; stems erect; leaves ciliated: radical ones on long petioles, cuneate-spatulate, ciliated, at the base: lobes of calyx broad, acuminate, glabrous, twice shorter than the lobes; appendages of the sinus of the calyx acuminate, doubly shorter than the lobes. **C. H. Native of Siberia.** Like **C. Allionii.** Root creeping. Radical leaves an inch long: cauline ones 2 to 3 lines long. **Pallas's Bell-flower.** Pl. ½ foot.

**C. saxatilis** (Lin. spec. p. 237.) glabrous; stems erect; leaves ciliated: radical ones on long petioles, cuneate-spatulate, ciliated, at the base: lobes of calyx broad, acuminate, glabrous, twice shorter than the lobes; appendages of the sinus of the calyx acuminate, doubly shorter than the lobes. **C. H. Native of Siberia.** Like **C. Allionii.** Root creeping. Radical leaves an inch long: cauline ones 2 to 3 lines long. **Pallas's Bell-flower.** Pl. ½ foot.

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**C. saxatilis** (Lin. spec. p. 237.) glabrous; stems erect; leaves ciliated: radical ones on long petioles, cuneate-spatulate, ciliated, at the base: lobes of calyx broad, acuminate, glabrous, twice shorter than the lobes; appendages of the sinus of the calyx acuminate, doubly shorter than the lobes. **C. H. Native of Siberia.** Like **C. Allionii.** Root creeping. Radical leaves an inch long: cauline ones 2 to 3 lines long. **Pallas's Bell-flower.** Pl. ½ foot.


31. C. molis (Lin. spec. 1. p. 237.) plant velvety from greyish down; stems ascending; leaves nearly entire; radical ones rosulate, spatulate: calyces one ovate, or ovate-roundish, on short petioles; flowers approximate; calyx acutum lobes, with subdentate sinuses. 2. H. Native of Greece, on the walls of Jupiter’s temple, in the island of Deli. Stems numerous. Flowers 2–6, crowded at the top of each stem. Corolla funnel-shaped, blue.

**Var.  3. microphylla (Alph. D. C. mon. p. 238.)** calyces small, ovate, acute, a little toothed. 2. H. Native of Spain; in Murcia, about Ellin.


32. C. stricata (Lin. spec. p. 238.) stem branched, pilose; leaves ovate-lanceolate, acute, serrated, pilose; flowers almost sessile, few, solitary; lobes of calyx glabrous, lanceolate, 4 times shorter than the corolla, which is tubular; appendages of the sinuses of the calyx ovate, length of lobes, but broader. 2. H. or 3. H. Native of Armenia; Syria, about Damascus, at the mountains called Djebel-cher; and of the island of Cois, on the mountains, and elsewhere in Greece. Desf. cor. in ann. mus. 11. t. 12. Flowers spicate. Corollas blue.

**Var.  3. leaves narrower, and nearly entire. 2. H. Native of Syria. C. stricata. Labill. pl. syr. dec. 5. t. 4. C. stricata, var.  3. Röm. et Schultes, syst. 5. p. 149.**


**Var.  3. glabra (Alph. D. C. mon. p. 240.)** stems gla-
brous, as also the calyx.  2.  H. C. Sarmática, Sims, bot. mag. t. 2019. Lodd. bot. cab. t. 581.


34  C. aliarifolia (Willd. spec. 1. p. 910. Salisbury. par. Lond. t. 26.) stems simple, terete, downy; leaves crenulated, hoary beneath: lower ones petiolate, somewhat reniform: upper ones sessile, ovate, acute; flowers spicately racemose; lobes of calyx velvety, hoary inside, lanceolate, acuminated, 4 times shorter than the corolla, which is downy outside; appendages of the sinuses of the calyx ovate, acute, one-half shorter than the lobes.  2.  H. Native of Siberia, Georgia, and Caucasus. Räum. et Schultes, syst. 5. p. 193. C. lamifolia, Bieb. fl. cauc. 1. p. 154. Räum. et Schultes, syst. 1. p. 754.—Buxb. cent. 5. p. 10. t. 18. Flowers sessile, secund, disposed in a long, racemose, loose spike, with a few short floriferous branches at its base, the lower flowers often 3 from each bracteae. Leaves hirsut, and green above, but clothed with hoary tomentum beneath. Corolla white or cream-coloured.


35  C. violeifera (Lam. dict. 1. p. 587.) plant humble, few-flowered, pilose; radical leaves petiolate, ovate-roundish, corollate, crenated: cauline leaves ovate-oblong, toothed; lobes of calyx lanceolate, ciliated, long-acuminated; appendages of sinuses of the calyx ovate, acute, one-half shorter than the lobes; corolla much longer than the calycine lobes.  2.  H. Native of Siberia. C. viola, Pers. ench. 1. p. 192. Leaves rather pilose. Flowers 2–3, large, drooping, white, about the size of those of *C. Médium*.

**Violet-leaved** Bell-flower.  Pl. 1/2 to 1/2 foot.

36  C. punctata (Lam. dict. 1. p. 256.) plant pilose; stems simple, few-flowered, terete; leaves ovate, acute: radical ones on long petioles, corulate-ovate, acute, crenated: cauline ones almost sessile, toothed; lobes of calyx ciliated, long-lanceolate, 3 times shorter than the corolla; appendages of the sinuses of the calyx ovate, acute, one-half shorter than the lobes.  2.  H. Native of Siberia, in the provinces called Okotsk and Jakutsk; and of Dahuria, even to the Eastern Ocean; also of Japan. Sims, bot. mag. t. 1725. Schrank, pl. rar. fasc. 9. t. 87. C. Trachèium, Thunb. fl. jap. p. 88.—Gmel. sib. 3. p. 155. t. 30. no. 23. Stem usually downy, panicked at top. Flowers large, pendulous. Corolla dirty-white, spotted with purple inside.

**Dotted-flowered** Bell-flower.  Fl. May, June. Clt. 1813.  Pl. 1/2 to 1 foot.

37  C. divèngens (Willd. enum. 1. p. 212.) plant pilose; stem panicked; radical leaves subspatulate, crenulated, narrowed at the base: cauline ones sessile, lanceolate, acuminated; peduncles many-flowered, diverging; lobes of calyx bristy, long-acuminated, 4 times shorter than the corolla: appendages of the sinuses ovate, obtuse, one-half shorter than the lobes.  2.  H. Native of Siberia, alps of Transylvania, and Hungary.


41  C. affinis (Räum. et Schultes, syst. 5. p. 140.) stems hispid with deflexed bristles; calyx leaves linear-lanceolate, setae especially ciliated, very long.  2.  H. Native of Spain, on Mount Lujo. Root horizontal. Stems numerous, simple. Leaves glabrous, but ciliated with reflexed bristles. Flowers at first erect, but at length drooping. Corolla above an inch long, blue.

42  C. barbata (Lin. spec. 236.) stems nearly simple, terete, pilose; leaves villous, nearly entire; radical leaves crowded, lanceolate: calyx leaves few, ligulate; racemes loose, few-flowered; calyx pilose, with triangular acuminated lobes; appendages of the sinuses of the calyx ovate, one-half shorter than the lobes; corolla bearded in the mouth.  2.  H. Native of the alps of Dauphiny, Piedmont, Savoy, and even to the alps of Salisbury and Austria; in the south towards Mount Baldo; as well as of Siberia, Saxony, Transylvania, &c. Jacq. obs. pt. 2. p. 14. t. 37. Krok. syl. t. 38. Sims. bot. mag. t. 1258. ex-
 elusive of the synonyms. Lodd, bot. cab. t. 788.—C. Bahn.
 prod. p. 36, with a figure.—Moris. oxon. 2. p. 460. sect. 5. t.
 3. f. 53, and f. 55. Root thick, white. Flowers mutant, dis-
 posed in a loose, often second raceme; pedicels 1-flowered, 
 rising from the axils of the superior leaves. Corolla pale rose,
 or white, glabrous outside, but woolly in the mouth. Pl. ½
 foot high.

\textit{Var. \beta, uniflora} (Alph. D. C. mon. p. 247.) plant small. \(\textit{\gamma}.\)
 H. Native of Switzerland, on Mount Rossboden, and on Mount
 Unbril.—C. barbata, var. \(\gamma\). Röm. et Schultes, syst. 5. p.

 Pl. ½ to 1½ foot.

43 C. Alpina (Jacq. enum. vind. 210.) humble; stem nearly
 simple, furrowed; leaves linear-lanceolate, repandly-crenate,
 woolly; radial ones crowded, narrowed at the base; flowers
 pyramidal racemose; calyces lobes long-acuminated, woolly:
 appendages of sinuses ovate-acute, woolly, much shorter than
 the lobes. \(\textit{\gamma}.\)
 H. Native of Europe, on the alps, especially
 Austria, Salisburgh, Germany, Silesia, Transylvania, and
 the Carpathian mountains. Jacq. fl. austr. 2. t. 118. Sims, bot. mag.
 t. 957.—Clus, hist. 5. p. 171. Root spongy, fusiform. Stem
 glabrous or woolly. Flowers few or numerous, scattered in a
 pyramidal manner along the whole of the stem. Corollas deep
 blue.


44 C. speciosa (Pourr. act. tol. 3. p. 309.) stem simple;
 leaves sessile, repandly crenated: radial leaves rosulate, linear-
lanceolate: calyces linear: flowers pyramidal racemose;
 lobes of calyx long-acuminated, ciliated: appendages of the
 recesses ovate-triangual, ciliated, one-half shorter than the
 lobes. \(\textit{\gamma}.\)
 H. Native of France, in the olive region, and in central and
 eastern Pyrenees, and in that part of the Cevennes
called Capodoulous. D. C. fl. fr. ed. 3. no. 2854. C. longifolia,
 abr. pyr. 106.? C. Allioni, Lakey. l. c. p. 107. C. barbata,
 Lakey. l. c. p. 107.? C. médium, Lakey. l. c. 107.? Root
 simple, tuberculate. Stem glabrous or pilose, furrowed.
 Flowers pedicellate, disposed in a pyramidal raceme, each pedi-
cel furnished with 2 bracteas. Corolla an inch long, smooth
 outside, but often villous inside, blue, purple, or white.

\textit{Var. \beta, bicaulis} (Alph. D. C. mon. p. 248.) plant humble,
 few-flowered; stigmas 2. \(\textit{\gamma}.\)
 H. Native of the Pyrenees. C. bicaulis, Lakey. fig. pyr. t. 13. t. 7.

\textit{Showy Bell-flower.} Fl. June, Sept. Chlt. 1820. Pl. ½ to 1½
 stem.

\* \* \* Flowers capitate.

45 C. cichoraecae (Sibth. et Smith, fl. grec. t. 209.) plant
 pilose; stem angular, branched: leaves undulated crenated:
 radial ones obovate, irregularly jagged, petiolate: calyces
 leaves sessile, linear-oblong, obtuse; bracteas ovate, cordate;
 calyx pilose, with ovate acute lobes; appendages of sinuses of
 the calyx obtuse, very like the lobes; corolla tubular, 3 times
 longer than the calyx. \(\textit{\gamma}.\)
 H. Native of Thessaly. C. capitâta, Sims, bot. mag. t. 811.? Root
 fusiform. Leaves undulated. Flowers capitate, terminal, and
 from the axils of the leaves. Corollas purplish blue.

 Pl. 3 feet.

46 C. linguatula (Willd. et K.J. pl. hung. 1. p. 65. t. 64.)
 plant hispid; stem nearly simple; leaves sessile, undulate-
 crenated: lower ones lingulately spatulate: superior ones linear-
lanceolate; bracteas ovate, acute; calyces lobes oblong, ob-
tuse, setaciously ciliate: appendages of sinuses similar to the
 lobes; corolla tubular, twice longer than the calyx. \(\circ\)
 H. Native of Hungary, Croatia, and Dalmatia, in woods. Alph.
 D. C. mon. p. 250. Root branched. Stems many from the
 same root. Flowers in dense terminal heads, surrounded by
 setaciously ciliate bracteas.

 Pl. 1 ft.

\section{II. Eucôbox (from \textit{ev}, \textit{ev}, well; and \textit{kôdon}, \textit{kodon}, a
 bell; this section is considered to contain the true species of
 Trachelium, Cervicia, and Rapunculus of most of the old
 authors. Trachelium and Rapunculus, Lin. gen. no. 290.
 Sinuses of calyx not covered by appendages. Capsule 3-
celled, dehiscing laterally by the valves, sometimes at the base,
 and sometimes at the apex.

\ § 1. Capsule erect, dehiscing at the base. Flowers sessile,
 capitate, or spicate.—All the species are inhabitants of
 Europe. *

\* Style exerted. Stems ascending, simple. Lower leaves
 petiolate. Flowers glomerate, sub-pedicellate.

47 C. jacquinii (Alph. D. C. mon. p. 251.) glabrous; stem
 firm, glabrous; leaves remotely serrated: lower ones on short
 pedioles, ovate; pedicels of the short ovate, blumint and larger;
 heads of flowers loose, bracteate; calyx velvety, with acuminated
 lobes much shorter than the corolla. \(\textit{\gamma}.\)
 H. Native of the island of Caudia, on walls on the Sphacetoce
 mountains. Phyteuma, Jacquinii, Sieb. herb. cret. Flowers
disposed in a loose, terminal, spherical head, on short pedicels.
 Corollas blue?

\textit{Jacquin’s Bell-flower.} Pl. ½ to ¾ foot.

48 C. foliosa (Tenor, fl. neap. I. p. 71. t. 18.?) rather pilose;
 stem terete; leaves doubly serrated: radial ones ovate, acute,
 subcordate: calyces one acuminated, bracteas ovate, acumina-
ted; calyces lobes long-acuminated, ciliated, denticulated,
 one-third shorter than the corolla, which is tubular; lobes of
 corolla velvety inside. \(\textit{\gamma}.\)
 H. Native of the kingdom of Naples, on the Appenines and

\textit{Leafy Bell-flower.} Pl. 1 foot.

49 C. petraea (Lin. spec. 236.) stem rather woody, hoary;
 leaves crenulated, hoary beneath: radical leaves petiolate,
 ovate-lanceolate: calyces one sessile, linear-lanceolate;
 heads of flowers dense, surrounded by obtuse bracteas;
 calyx hoary, with linear obtuse lobes, doubly shorter than
 the corolla, which is campanulate. \(\textit{\gamma}.\)
 H. Native of Mount Baldo, on rocks, in the wooded region;
 and of the south of France, at a place called Les Escalles d’Eglon.
 Poll. elem. bot. 2. p. 150. t. 5. f. 1.—Moris. oxon. 2. p. 462. sect. 5. t.
 t. 44.—J. Bahn. hist. 2. p. 802, with a good figure. Barcel.
 pl. gall. p. 10. t. 890.—Pluk. phyt. t. 132. f. 5. Pomo, de-
scrip. mont. bald. p. 62, with a good figure. Stems ascending,
 simple. Leaves green, and pilose above. Flowers dis-
 posed in a terminal bracteate head. Corollas white.

\textit{Rocky Bell-flower.} Fl. May. Pl. 1 foot, ascending.

50 C. glomerata (Lin. spec. 235.) downy; stems terete;
 leaves serrulated: radial ones ovate, acute; bracteas ovate,
 acuminated; calyces lobes acuminated, twice shorter than
 the corolla, which is funnel-shaped. \(\textit{\gamma}.\)
 H. Native nearly throughout the whole of Europe; especially
 from Arragon, Pyrenees, south of France, Piedmont, northern
 part of the kingdom of Naples, Greece, even to Scotland, Sweden,
 \&c.; and collected also in Caucasus, Persia, Altaiun mountains,
 and almost throughout Siberia, even to Kamtschatka, \&c. \&c.;
 in shady rocky places, by river sides, and in dry, open, chalky
 pastures; plentiful in Britain, in like situations. Smith, engl.
 bot. t. 90. Gibb. demonstr. bot. t. 30. Oed. fl. dan. t. 1328.
 Gentiana collina, With. 282. t. 11. f. 3. C. bartabes, Spreng. ex Steud.

5 D 2


Var. \( \epsilon \), elliptica (Alph. D. C. mon. p. 255.) leaves on long petioles, elliptic, less cordate; flowers large, capitate; bracteas large, often longer than the flowers. 2. H. C. elliptica, Kit. ex Schultes, fl. austr. ed. 2. p. 918. C. glomerata, Spreng. syst. 1. p. 731. C. glomerata \( b \), Willd. spec. 1. p. 904.—Bœc. mus. t. 58.


Corollas bluish-violet.


Var. \( \theta \), pusilla (Alph. D. C. mon. p. 255.) plant 1-2 inches high; leaves round, cordate; flowers few, capitate. 2. H.

Var. \( \iota \), flore pleno; flowers double, blue or white. 2. H. C. glomerata \( \varepsilon \), Rœm. et Schultes, syst. 5. p. 124.


51 C. Cer\( v \)icaria (Lin. spec. 1. p. 235.) plant beset with stiff pili; stems furrowed; leaves crenately serrated; radical ones linear-lanceolate, bluish, on short petioles: cauline leaves linear, acuminate; bracteas ovate, acute; calyce lobes oblong, obtuse, doubly shorter than the corolla, which is campanulately funnell-shaped. 2. H. Native of the temperate parts of Europe, as of the Pyrenees, south of France, Piedmont, and as far north as Sweden, but not of Britain; of Russia, about Moscow and Petersburg; also of Transylvania, Galicia; and Siberia, about the Janc and Jenesse, and about Barnaul, and near Ridders and Alexandrovs. Oed. fl. dan. t. 787. Lod. bot. cab. 452. C. speci\( c \)a, Gners, scep. no. 192.—Gmel. sib. 3. p. 157. t. 31.—Weim. phyt. t. 288. f. 6.—Mor. oxon sect. 5. t. 3. f. 34. Stem simple. Upper stem leaves half stem-clasping.

Heads of flowers terminal, round, bracteate. Corollas blue, usually pale, pilose outside.


52 C. multi\( f \)lora (Walde. et Kit. pl. hung. 3. p. 292. t. 265.) plant pilose; stem striated; leaves undulate-crenate; lower ones ovate-lanceolate; calyce ones acuminate; spikes interrupted from the flowers being in fascicles; calyce lobes obtuse, 3 times shorter than the corolla, which is tubular funnel-shaped; capsule bluntly triangular. 2. H. Native of Hungary, on the mountain on which the town of Versiitz is built. C. macrostachya, Willd. enum. 1. p. 213. C. cervicaria imbricata, Rochel, herb. ex Rœm. et Schultes. Stem simple. Corollas glabrous, of a pale bluish-violet colour.


53 C. spic\( \alpha \)ta (Lin. spec. 1. p. 294.) hairy; stem striated; leaves nearly entire; radical leaves crowded, linear-lanceolate; calyce ones linear-acuminate; spike long, interrupted at the base; calyce lobes ovate, acuminate, 5 times shorter than the corolla, which is funnel-shaped; capsule spheroid. 2. H. Native of Europe, frequent on the south side of the Alps about Nice, Fenestrella, and Turin; and in the region of Mount Baldo; of Italy, Provence, Dauphiny, Valais, Carniola, Croatia, Portugal, &c. All. pedem. 1. p. 112. t. 46. f. 2.—Pluk. phyt. t. 153. f. 3. Stem simple. Leaves sessile. Flowers sessile, 1-3 from each bractea. Corolla glabrous, blue.


Var. \( \gamma \), spicata interna (Alph. D. C. mon. p. 261.) leaves elliptic-lanceolate; spike interrupted. 2. H. C. spicata var. All. pedem. no. 414. t. 47. f. 1. Lam. fl. fr. ed. 3. no. 2855.

Var. \( \epsilon \), Presschicka (Alph. D. C. mon. p. 261.) plant small; leaves obovate-lanceolate; corolla ovoid. 2. H.


54 C. thyrs\( o \)idea (Lin. spec. 1. p. 235.) plant pilose; stem furrowed; leaves entire; pilose; lower ones lanceolate, obtuse; calyce ones linear-lanceolate, acute; flowers disposed in a dense pyramidal spike; calyx with a glabrous tube, and linear-lanceolate ciliated lobes; corolla oblong, doubly longer than the calyce lobes; style exserted; capsule spherical. 2. H. Native of the Alps of Europe, from Provence, Dauphiny, Savoy, even to Carniola and Lower Austria; frequent on the Alps of Jura and Dola. Stem simple, covered with leaves and flowers. Flowers sessile. Bracteas often reddish. Corolla cream-coloured, hairy.


* Flowers on more or less elongated pedicels. Radical leaves usually cordate, petiolate.—Species almost all perennial.

55 C. latif\( o \)lolia (Lin. spec. 283.) stems simple, smooth; leaves large, doubly serrated; radical ones petiolate, cordate, ovate-oblong; calyce ones sessile, ovate-acuminate; flowers disposed in spicate racemes; peduncles erect, 1-flowered; calyce lobes long-acuminate, broad at the base, 3 times shorter than the corolla, which is campanulately funnel-shaped and large. 2. H. Native of Europe, from the Pyrenees and north of Italy, even to Scotland; of Caucasian, Lapland, Nordland, Carpathian Mountains, Altaia, Mountains, and Nipaul, always in moist woods and thicket. Frequent in the Alps of France and Switzerland. Not uncommon in Scotland and the north of England, but

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more rare in the south: in moist woods and thickets, by the sides of rivulets. Oed. fl. dan. t. 85. and t. 788. Smith, engl. bot. 302. C. urticaefolia, All. pedem. 1 p. 110. C. Brunonis, Wall. cat.—Weinn. phyt. t. 287.—Park. par. 355. f. 2.—Lob. icon. 2. t. 278. Stem glabrous, rarely a little hairy. Leaves glabrous, rarely rather scabrous. Flowers solitary, rising from the axils of the superior leaves. Corollas large, blue, but sometimes white, or white-yellow, glabrous outside, but sometimes bearded inside. Lobes of calyx often dentilicated.

**Var. **β, macrantha (Alph. D. C. mon. p. 265.) stem and leaves rather pilose: teeth of leaves more distinct; calyx glabrous; corollas larger. **γ.** H. C. macrantha, Fisch. ined. V. latifolia, var. macrantha, Sims, bot. mag. 2553.


**Broad-leaved Bell-flower.** Fl. July, Britain. Pl. 2 to 3 ft. 56 C. trachelium (Lin. spec. 255.) stems angular, pilose; leaves scabrous, acuminate, coarsely and crenately toothed: radical ones petiolate, cordate; flowers disposed in loose racemes; peduncles 1.3-flowered; calyx rather pilose, with triangularly acuminate erect lobes, 3 times shorter than the corolla, which is campanulate. **γ.** H. Native of Europe, from Spain, Portugal, Piedmont, Naples, and Greece, even to Scotland, Sweden, Russia, and the Carpathian Mountains; of Caucasus, Tauria, Siberia, and even to Japan, in shady places. In Britain, in groves, thickets, and hedges frequent. Smith, engl. bot. t. 12. Oed. fl. dan. t. 1026. Hook. fl. lond. t. 109. C. ganteltæ. Jaum. St. Hilt. fl. fr. t. 47. C. urticaefolia or urticifolia, Schmidt, fl. bohem. no. 173. p. 73. Bieb. fl. cauc. 1. no. 374. Tenor. fl. neap. 1. p. 68.—J. Bauh. hist. 2. p. 805. with a figure. C. Cervicifia, Fuchs, hist. p. 431. with a figure.—Moris. oxon. 2. p. 499. sect. 5. t. 3. f. 28. Stem simple or branched, red-dish. Leaves often doubly toothed, roughish. Flowers drooping a little, 1-4 together, terminating the branches. Corolla blue-violet, white and violet, and all the shades between these two colours, bearded inside. The name *Trachelium* is from τραχέος, the throat; alluding to the reduced virtues of this plant in disorders of the throat, to which the other apppellations of old authors allude. A decoction of the herb, which is bitter and somewhat acrid, was used as a gargle.

**Var. **δ, flower solitary, terminal. Bieb. fl. taur. t. 1. p. 149. C. trachelium, var. dense folio, floribus pleno, flowers double, blue, white and violet, and all the shades between these two colours. Theatr. flor. t. 69.


**Var. **ε, enipontana (Alph. D. C. mon. p. 268.) flowers few, disposed in loose racemes; peduncles long, erect, usually 1-flowered; calyceine lobes broader. **γ.** H. C. enipontana, Morett, ined. **Var. **ζ, nabana (Alph. D. C. mon. p. 269.) stem abortive, 1-3-flowered. **γ.** H. **Rampion-like Bell-flower.** Fl. June, July. England. Pl. 2 to 4 feet. 58 C. Bononip. nisiss (Lin. spec. 1. p. 234.) scabrous; stems simple; leaves sessile, ovate, acuminate, dark green above, pale beneath: radical leaves cordate, petiolate: superior leaves stem-clasping; flowers numerous, small, disposed in long racemes; calyceine lobes acuminate, 4 times shorter than the corolla, which is funnel-shaped. **γ.** H. Native of the east of Europe and west of Asia, from lat. 40° to 59°, and long. 15° to 15° west. even to 60°; particularly in the northern elevated valleys in the kingdom of Naples; Upper Italy, Piedmont, Saxony, Prussia, Bohemia, Silesia, Caucasus, the Ukraine, and near the Volga, &c. Bieb. fl. taur. t. 1. p. 150. Rebh. icon. cent. 2. t. 111. f. 221. C. Thalidium, Wall. sched. crit. p. 86. Rebh. icon. cent. 2. t. 112.—Bauh. hist. 2. p. 806.—Moris. oxon. 2. p. 461. sect. 5. t. 4. f. 38. Tube of calyx blackish. Flowers smaller than in any other nearly allied species, numerous, disposed in a simple raceme, or the raceme is branched at the base. Corollas blue-violet, glabrous. Plant dark green. Leaves pale beneath. **Var. **β; radical leaves very long. **γ.** H. Native of the kingdom of Naples. C. obliquifolia, Tenore, fl. neap. prod. p. 15. fl. neap. 1. p. 69. t. 17. Flowers blue-violet.


CAMPANULACEÆ. XV. CAMPAULANA.


b. Stems few-flowered or 1-flowered. Corollas nearly always glabrous. Capsule ovoid, rarely spheroid.

59 C. collina (Bieb. fl. taur. 1. p. 152.) stems simple; lower leaves on long petioles, ovate-oblong, crenulated; middle ones lanceolate; superior ones linear-acuminated; flowers few, second, disposed in a long raceme; calyces lobes erect, lanceolate, acuminated, doubly shorter than the corolla, which is funnel-shaped. 2. H. Native of Caucasus and Tauria, on grassy hills. Bieb. pl. rar. Ross. 1. t. 42. Stem rather pilose. Leaves smoothish. Flowers distant. Calyx pilose. Corolla deep blue, twice the length of the calyceous segments.

Var. a. Plant larger; petioles very long; germen hispid.

2. H. Native of Iberia, on the mountains, and of Tauria.

Var. a, Bieb. l. c.

Var. b. Plant larger; leaves shorter, and on shorter petioles; calyces glabrous. 2. H. Native of Caucasus and Iberia.


Var. y. plantâris;—Tourn. cor. p. 4. C. Iberica, angustifolia, &c. var. y, Bieb. l. c.

Var. 2; flowers white. 2. H.—Tourn. cor. p. 4.


60 C. fæciélora (Desf. choix. du. cor. p. 36. t. 26. ann. mus. 11. t. 57. t. 7.) stems branched; leaves dentate-serrated: radical ones ovate-roundish, petiolate; cauline ones ovate, on short petioles; flowers few, terminal; calyceal segments subulate, erect; corolla funnell-shaped, twice the length of the calyceous segments.

2. H. Native of Canidia, on the mountains, among bushes. Stem slender. Plant glabrous. Flowers hanging one way, solitary, terminating the branches and stem. Corolla campanulate, blush-violet. The capsule is said to be 5-celled.

Few-flowered Bell-flowel. Pl. 1 to 1½ foot.

61 C. nemêbona (Alph. D. C. mon. p. 274.) stems simple; radical leaves on long petioles, cordate, ovate-oblong, crenated; cauline leaves sessile, long-acuminated, serrated; flowers disposed in loose racemes; calyceal segments subulate; corolla funnell-shaped, twice longer than the calyceal lobes. 2. H. Native of Austria and Moravia, in woods. C. elongàta, Portenschl., but not of Wildl. nor others. Plant glabrous. Racemes often furnished with few-flowered peduncles at the base. Corolla blue.

Grove Bell-flowew. Pl. 1½ foot.

62 C. rihomôboiâ'is (Lin. spec. p. 233.) stems almost simple; leaves sessile, ovate, acute, serrated; flowers few, disposed in loose racemes, pedunculate; segments of calyx subulate, erect; corolla campanulate, twice longer than the calyceal segments; capsule ovoid. 2. H. Native of the temperate parts of Europe, on the mountains; as of the Pyrenees, mountains of Auvergne, Alps of Provence, Dauphiny, Savoy, Switzerland, Germany, Carniola, &c.; and of Russia and Tauria. C. rhomboides, Lin. spec. 233. Gilib. demonstr. bot. t. 27. Lodde. bot. cab. t. 603. C. azíurea, Sims, bot. mag. t. 551. Ait. hort. kew. ed. 2d. vol. 1. p. 348. C. venêsa, Wildl. enum. suppl. p. 10.—Barrel. icon. 78. t. 567.—Boiss. mus. p. 75. t. 61.—J. Bauh. hist. 2. p. 798. with a figure. Stem glabrous, or a little pilose, furnished with flower-bearing branches at top. Flowers usually drooping, but sometimes looking upwards, very like those of C. rotundifölia. Corollas hardly one-half longer than the calyceal lobes, blue, glabrous.


Var. γ, reflêxâ (Alph. D. C. l. c.) leaves broader; calyceal lobes reflexed. 2. H. Flowers blue.

Var. δ, polyétâlta (Alph. D. C. l. c.) leaves long-lanceolate, nearly entire; corollas 5-parted. 2. H. Flowers blue.


63 C. trichocalyçina (Ten. fl. neap. prod. p. 16. fl. neap. p. 67. t. 16.) stems simple; leaves on short petioles, ovate, acute, coarsely serrated; flowers few, racemose; calyceal segments reflexed, long-capsillary, nearly equal to the corolla, which is profusely 5-cleft, and funnel-shaped; capsule ovoid. 2. H. Native of the kingdom of Naples, on the mountains: of Sicily, on the Nebrodes; and of Candia. C. Alburnica, Brigtan. stirp. rar. in germ. encyc. sept. 1817. Root simple, fusiform. Stems glabrous, but hairy at the base. Flowers disposed in an almost simple terminal raceme, approximate at the top, 1-5 rising from each axil, at the time of flowering erect, but afterwards dropping. Corolla pale violet.


64 C. Car'níca (Schiédé, ms. ex Alph. D. C. mon. 277.) stems ascending, weak, few-flowered; leaves glabrous; lower ones ovate or lanceolate; upper ones linear; calyceal segments very long, reflexed; corolla tubular, elongated. 2. H. Native of Carniola and Carinthia, on the mountains. Root slender. Plant glabrous. Flowers few, on long peduncles, solitary, inclined. Corolla blue, glabrous.

Carniola Bell-flowew. Pl. ½ to ⅔ foot.

65 C. hóstii (Baumg. enum. 3. p. 342.) stems few-flowered; leaves with scabrously ciliate margins: radical ones few, roundish, cordate, broad, toothed: cauline leaves lanceolate and linear; flower-buds drooping; calyceal segments subulate, spreading or reflexed; corolla funnell-shaped. 2. H. Native of Transylvania, Austria, and Carinthia, in pastures, woods, and on the mountains; and on the alps of Jura. Stems glabrous or scabrous, simple or branched at top. Flowers more or less numerous, pedunculate and pedicellate, as in C. rotundifölia, drooping. Corolla blue. Very like C. rotundifölia.

Var. β, unifölia (Alph. D. C. mon. p. 277.) stem 1-flowered, ascending, weak; cauline leaves few, linear-lanceolate, petiolate. 2. H.

Host's Bell-flowew. Pl. 1 foot.

66 C. petiol'âta (Alph. D. C. mon. p. 278.) quite glabrous; stems simple, few-flowered; radical leaves on long petioles, corotdate-roundish, toothed; petals margined; lower cauline leaves lanceolate, remotely toothed, petiolate: upper cauline leaves linear, entire; calyceal lobes erect, subulate; corolla campanulate, twice longer than the calyceal lobes. 2. H. Native of North America, near Slave Lake. Plant with the habit of C. rotundifölia. Root slender. Flowers 3-4, at the top of the stem, erect, but at length becoming recurved. Corollas blue.

Pediolute-leaved Bell-flowew. Pl. 1 foot.

67 C. linitifölia (Lam. dict. 1. p. 579.) stems erect; radical leaves few, petiolate, ovate, sinuated: cauline leaves linear, entire; calyceal segments long, erect, 2 or 3 times shorter than the corolla, which is large and campanulate. 2. H. Native of Europe, on the mountains; as of the Pyrenees, Auvergne, Dauphiny, Vallais, Alsacia, alps of Italy, Austria, Transylvania, and the Carpathian Mountains; but wanting in the more northern regions of Europe. Scop. carn. 1. p. 144. C. angustifölia, Lam. ill. 2499. C. Schleichéri, Sut. fl. helv. 1. p. 184. C. rotundifölia limifölia, β et γ, Lapeyr. abr. p. 104. C. rotundifölia, β, Wahl. helv. p. 30, but not of his fl. lapp. C. virgâta, Rafin. in Roem. et Schultes, syst. 5. p. 100.—J. Bauh. hist. 2. p. 797. with a figure. Root slender, creeping. Plant quite glabrous, rarely a little downy. Flowers few at top of
Flax-leaved Bell-flower. Fl. June, Aug. Clt. 1813. Pl. \(\frac{1}{2}\) to \(\frac{3}{4}\) foot.

68 C. rotundifolia (Lin. spec. 335.) radical leaves petiolate, cordate, roundish, crenately toothed: cauline leaves linear or lanceolate; flower-buds erect; calyx segments subulate, short, erect, 3 times shorter than the corolla, which is campanulate. \(\mathcal{V}\). H. Native throughout Europe, Siberia, and North America; plentiful everywhere in Britain. Cav. var. t. 2. All. pedem. 1. p. 108. t. 47 f. 2. (Edwards. fl. dan. t. 1086. Drev. et Hayne, term. bot. t. 5 f. 9. Smith. engl. bot. 866. Curt. lond. fusc. 4. t. 21. Jaume St. Hil. pl. fr. t. 418. C. uniflora, Huds. angl. ed. 1st. p. 81. but not of Lin. C. minor, Lam. fl. fr. 3 p. 339. C. variifolia, Sibth. prod. p. 126. C. minuta, Savi, fl. etrusc. p. 554. C. scheuchzeri, Lodd. bot. t. 485. but not of others. C. heterophylla, Gray, brit. arr. 2. p. 408. C. alliophylla, Rafn. ms. Root creeping. Stems numerous. Plant glabrous. Flowers drooping, solitary, pedunculate, few on each stem. Corollas deep blue. In France the plant is called Glochette; in Germany, Weisen-Busch, Grass-gras, or Milch-Glocken, and Kleine Wilde Rappenste; in Denmark, Gnomme Smag Klockler; in Sweden, Angblacker and Blakacker; and in Britain, Blue-Bells and Milkwort. The juice expressed from the flavedoes is often a very good blue ink, and a good green colour mixed with alum. The roots are eaten by children in many parts.


Var. \(\epsilon\), albiflora; flowers white. Round-leaved Bell-flower. Fl. June, Aug. Britain. Pl. \(\frac{1}{2}\) to 1 foot.

69 C. espirita (Scop. carn. 1. p. 143. t. 4.) plant humble, few-flowered, glabrous; radical leaves crowded, on short petioles, ovate, glandularly toothed, shining; buds, flowers, and capsules drooping; calyx segments linear, erect, 3 times shorter than the corolla, which is campanulate; pollen violaceous.


Var. \(\gamma\), imbricata (Alph. D. C. mon. p. 284.) flowers crowded at the base, imbricated, linear-lanceolate; flowers numerous; corollas narrow. \(\mathcal{V}\). H. Native of Carinthia, and about Vienna. C. Boccioni, Vil. dauph. 2. p. 502. exclusive of the syn. of Gmel. C. imbricata, Heyne, ined.—Bocc. mus. t. 103. Flowers blue.

Tufted Bell-flower. Fl. May, Aug. Clt. 1813. Pl. \(\frac{1}{2}\) to \(\frac{3}{4}\) foot.

70 C. arista (Wall. in Roxb. fl. ind. 2. p. 98.) plant quite glabrous; stems erect, 1-flowered; radical leaves petiolate, lanceolate, acute, undulate: cauline leaves sessile, narrow-linear, glandularly denticulate; calyx segments long-subulate, twice longer than the corolla; capsule very long, obconical. \(\mathcal{V}\). H. Native of the north of India, about Laddock. Root thickish, rather fusiform, divided at top. Flowers small, solitary, terminal, drooping. Tube of calyx very much elongated. Corolla funnel-shaped, pale blue.

Amen-calyx Bell-flower. Pl. 1 foot.

71 C. sylvestris (Wall. in Roxb. fl. ind. 2. p. 97.) plant解锁从short stiff hairs; stems erect, straight, few-flowered; cauline leaves linear, narrow, nearly entire; calyx segments erect, subulate; corolla campanulate, downy, twice longer than the calyx segments. \(\mathcal{V}\). H. Native of Nipa, in shady humid places. C. stricta, Wall. asiatic. res. 13. p. 374. C. integerrima, D. Don, prod. fl. nep. p. 155. Habit of C. rotundifolia, but probably without any roundish radical leaves. Stems simple or branched. Flowers terminal, on long peduncles, disposed like those of C. rotundifolia. Corollas blue.

Wood Bell-flower. Pl. \(\frac{1}{2}\) to 1 foot.

72 C. vesula (All. pedem. 1. p. 108. no. 397. t. 7 f. 1.) stems 1-flowered; leaves glabrous, oval, toothed; stems nearly naked; calyx glabrous. \(\mathcal{V}\). H. Native of Piedmont, on Mount Vesuvius. Leaves many at the roots, petiolate, with a few scattered hairs beneath. Flowers campanulate, spreading.

Vesulus Bell-flower. Pl. \(\frac{1}{2}\) foot.

73 C. duhia (Alph. D. C. mon. p. 286.) glabrous; stems 1-flowered; cauline leaves erect, narrow: lower ones linear-lanceolate, petiolate: superior ones long-acuminated; calyces lobes subulate; corolla tubularly funnel-shaped, twice longer than the calyces lobes. \(\mathcal{V}\). H. Native of Newfoundland. Flowers erect, terminal, very like those of C. rotundifolia.

Doubtful Bell-flower. Pl. \(\frac{1}{2}\) to \(\frac{3}{4}\) foot.

74 C. frate (Syl. ined. ex Alph. D. C. mon. p. 287.) stems humble, 1-flowered, most leafy above; leaves all petiolate, ovate, acute, suberated; calyx segments long-acuminated, one-third shorter than the corolla. \(\mathcal{V}\). H. Native of Newfoundland, by the sea side. Plant glabrous. Corollas funnel-shaped.
Meadow Bell-flower. Fl. Pl. 3/4 foot.


76 C. eccisa (Schleich. pl. excis. Mur. guide en Vall. p. 33. and 35.) plant glabrous, humble; stems slender, 1-flowered; lower leaves linear-acuminate; calyces lobes setaceous, spreading, at length reflexed, 3 times shorter than the corolla, which is funnel-shaped; sinuses of corolla cut; capsule obconical. 2. H. Native of Switzerland, on the higher Alps in the valley of St. Nicholas; at Saas; and about Simpol, &c. Lodd. bot. cab. t. 561. Rchb. icon. cent. 1. t. 75. Re. fl. pedem. alt. p. 193. in mem. acad. turin. t. 31. Gauld. fl. helv. 2. p. 147. t. 2. Stems numerous, erect, slender, simple, naked at top. Leaves entire, or remotely denticulate. Flowers drooping before and at the time of expansion. Corollas blue.


77 C. Waldsteinia'na (Roem. et Schultes, syst. p. 5. p. 99.) glabrous; stems erect, flexuose, stiff, simple, few-flowered; leaves sessile, lanceolate, serrated: lower ones obtuse: superior ones long-acuminate; calyces lobes subulate, subdenticulate, spreading, 4 times shorter than the corolla, which is campanulate. 2. H. Native of Croatia, on the mountains, in the fissures of rocks. Rchb. icon. bot. cent. 1. t. 55. C. flexuosa, Waldst. et Kit. pl. rar. hung. 2. p. 145. t. 136. C. rupéstris, Host. fl. austr. 1. p. 263. Stems numerous from the same root, stiff. Flowers 3-4 at the top of each stem, one of which is terminal, and the others from the axis of the superior leaves, always looking upwards. Corollas of a violaceous blue colour.


78 C. apar'inoides (Pursh. fl. amer. sept. 1. p. 159.) glabrous; stems weak, ascending, simple, few-flowered, having the angles beset with short retrograde bristles; lower leaves linear-ovate: the rest linear and acuminate: all remotely denticulate, and beset with retrograde short bristles; calyces lobes triangular, twice shorter than the corolla, which is campanulate; capsule spherical. 0. H. Native of North America, in humid meadows about Elizabeth Town, on the banks of the Hudson, near Boston; Philadelphia, and West Chester in Pennsylvania. C. aparinoides, Nutt. gen. amer. 136. but not of Lin. and Will., Root slender. Flowers 2-4, terminal, pedunculate, small, erect. Corollas white.


79 C. flexuosa (Michx. fl. bor. amer. 1. p. 109.) glabrous; stems panicled at top, with erectish branches; leaves most frequent in the middle and above, almost sessile, lanceolate, acuminate at both ends, coarsely serrated; calyces lobes capillary, twice shorter than the corolla, which is tubularly campanulate; style a little exserted. 2. H. Native of Carolina, on high mountains. Stems erect, angular. Leaves very few at the base, but crowded at top. Flowers panicled, terminal and axillary. Corolla blue.


80 C. divarica'ta (Michx. fl. amer. bor. 1. p. 109.) glabrous; stems panicked at top, with the branches diverging; leaves equally scattered over the stem, nearly sessile, ovate-lanceolate, acuminate at both ends, coarsely serrated, with rather sebaceous edges; calyces lobes capillary, twice shorter than the corolla, which is tubularly campanulate; style a little exserted. 2. H. Native of Carolina and Virginia, on the mountains; and of Kentucky, &c. Stems leafy to the middle, and almost naked in the upper part. Flowers small, drooping, terminating the branches and branchlets. Corolla azure blue.

Divaricate-panicled Bell-flower. Pl. 2 to 4 inches.

c. Plants few-flowered, pilose. Corolla downy outside. Capsule usually turbinate, and probably always drooping. — All natives of Nipaul.

81 C. ca'na (Wall. in Roxb. fl. ind. 2. p. 101.) tomentose; stems ascending, branched; leaves sessile, approximate, lanceolate, toothed, hoary beneath; flowers terminal; segments of calyx lanceolate, toothed, twice shorter than the corolla, which is funnel-shaped and pilose: capsule turbinate. 2. H. Native of Nipaul, on the mountains near Gosaingthanh. Root fibrous. Stems many, ascending, densely covered with white hairs, as well as the upper surfaces of the leaves. Flowers on short peduncles, terminating the stem and branches. Corollas blue.


82 C. canesc'ens (Wall. cat. no. 1289.) plant hispid; stem erect; radical leaves crowded, lanceolate, crenulately: cauline leaves remote, narrower, repandly denticulate; flowers racemose, often approximate, on short pedicels, small: tube of calyx spherical: lobes linear, entire; corolla tubular, pilose. 0. H. Native of Nipaul; and Hindostan, about Rampore. Alph. D. C. mon. p. 292. C. Benthamii, Wall. cat. no. 1390. Root slender. Stem branched from the base and simple. Flowers numerous, small, 4-6 at the top of each branchlet, the whole forming a many-flowered loose raceme.

Canaescent Bell-flower. Pl. 1 foot.

83 C. color'a'ta (Wall. in Roxb. fl. ind. 2. p. 101.) stem branched, downy; leaves scattered, lanceolate, acute, repandly denticulate; peduncles elongated, terminal and axillary; calyx with a very pilose obconical tube, and triangular entire lobes, which are about equal in length to the corolla, which is tubular and velutty; capsule turbinate. 2. F. Native of Nipaul. Leaves variable in size, acuminate at both ends, sessile, downy. Peduncles nearly naked, or bearing a large bracteae each.


Coloured Bell-flower. Pl. 1/2 foot.

84 C. fa'li'da (Wall. in asiat. res. 13. p. 375.) plant clothed with canescent pil, stem erect, branched; leaves elliptic, subulately crenated, petiolate: upper ones sessile; calyx bristly, with linear-lanceolate segments, which are about equal in length to the corolla. 2? F. Native of Nipaul, in sterile places. Wall. in Roxb. fl. ind. 2. p. 100. D. Don, prod. fl. nep. p. 156. Branches slender, simple, subfasciately. Flowers solitary, terminating the stem and branchlets, white, forming a terminal fasciately panicled. Corolla pilose.

Pale Bell-flower. Pl. 1 to 2 feet.

85 C. rama'losa (Wall. in Roxb. fl. ind. 2. p. 100.) stem erect, pilose, branched; leaves lanceolate, sessile, crenately
toothed, with the nerves rather prominent beneath; flowers pedicellate, terminal and axillary; calyx pilose, with broad, acute, subdentate lobes, twice or thrice shorter than the corolla, which is cylindrical and velvety; capsule turbinate. \( \U 1 \). H. Native of Nipal. Root short, slender, simple or branched. Flowers ineminate, pedicellate. Leaves pilose. Corolla of a violaceous blue colour.

**Branched Bell-flower.** Pl. 1 to 2 feet.

86 C. Alphonsii (Wall. Cat. no. 1296. Alph. D. C. mon. p. 294.) stems humble, simple, 1-flowered, donn; cauleine leaves sessile, lanceolate, acute, toothed a little, rather pilose above, and hoary beneath; calyx downy, with acute segments, twice shorter than the corolla, which is campanulate and downy. \( \U 1 \). H. Native of the south of India, on the Nilgherry Mountains. Stems very leafy at top. Flowers drooping, terminal, large for the size of the plant.

Alphonse De Candolle's Bell-flower. Pl. 2 to 3 inches.

* * * Flowers very short pedicel, opposite the leaves. Capsule turbinate. Branches more or less dichotomous. Leaves small, sessile, oblong.—All annual humble herbs, inhabitants of the region of the Mediterranean.

87 C. Erineus (Lin. spec. 240.) plant hispid; leaves obovate or ovate, toothed; flowers sessile; calyceous lobes triangular, acuminate, erect, at length spreading, about equal in length to the corolla, which is small and tubular. \( \U 1 \). H. Native of the Mediterranean Sea; very plentiful throughout the whole Spanish Peninsula, south of France, Provence, Sardinia, throughout the whole of Italy, Sicily, Dalmatia, Grecian Islands, Teneriffe, \&c. on rocks and rocky places. Sibth. et Smith, fl. grce. t. 214. Cav. valenc. t. 2. Roueèna erineus, Dumont, comm. bot. t. 14. —J. Bauh. hist. 2. p. 799. with a good figure.—Mor. oxon. sect. 5. t. 3. f. 25.—Column. phyt. t. 28. pl. nov. hist. p. 29. t. 31. Stem much branched. Flowers terminal and axillary, and situated in the angles of the forks of the branches. Corollas tubular, of a pale bluish rosy-colour or white, pilose at the base.

Erisina-like Bell-flower. Fl. May, Aug. Ct. 1768. Fl. \( \frac{3}{4} \) to \( \frac{1}{2} \) foot.

88 C. Drapefolia (Sibth. et Smith, fl. grce. t. 11. p. 215.) plant hispid; leaves elliptico-oblong, toothed; flowers pedicellate; segments of the calyx always erect; corolla inflated, much longer than the calyx. \( \U 1 \). H. Native of the Island of Samos, and near Athens, in cotton plantations and vineyards. Habit of C. erineus. Stem many times forked, erectish. Corolla with a white tube, and a violaceous blue limb.


89 C. Rhodsexis (Alph. D. C. mon. p. 297.) plant pilose; leaves entire, ovate; flowers terminal; calyceous lobes triangular, erect, at length spreading; corollas large, campanulate. \( \U 1 \). H. Native of the Island of Rhodes. Root simple. Stems many from each root, reddish. Flowers numerous, erect, terminating the branches. Corollas elegant.

Rhodes' Bell-flower. Pl. 1 \( \frac{1}{2} \) to 3 inches.

§ 3. Capsule erect; valves dehiscing at the base.—Flowers pedicellate. Radical leaves pedicellate, usually coriaceous, having the base of the petioles usually expanded and permanent.

* Corolla downy or velvety, tubular, 5-lobed at the apex. Radical leaves crowded. Stems few-flowered.—Species all natives of the Levant.

90 C. Damace'na (Labill. pl. syr. dec. 5. p. 7. t. 5.) downy; radical leaves ovate-ovobovate, acute, nearly entire, hoary; calyceous ones few, ovate, acute; calyx velvety, with subulate lobes, twice shorter than the corolla; capsule ovoid. \( \U 1 \). F. Native of the Levant, near Damascus, on the mountain called Dgebel-cher. Root woody. Stems slender, 1 or few-flowered. Flowers erect, pedicellate. Corollas cylindrical.

Damas'cus Bell-flower. Pl. ascending.

91 C. Arge'nte'a (Lam. dict. t. p. 584.) humble; radical leaves linear-obovate, clothed with silvery tomentum, nearly entire; upper leaves few, oblong; calyce silvery, with triangular lobes, 3 times shorter than the corolla; capsule turbinate. \( \U 2 \). F. Native of Armenia.—Tourn. cor. 3. Root hard, blackish. Stems erect, velvety, with short branches. Flowers 1 or few on the top of each branch, erect. Corollas velvety.

Silvery Bell-flower. Fl. \( \frac{3}{4} \) foot.

92 C. Syri'aca (Roum. et Schultes, syst. 5. p. 133.) radical leaves oblong-spataulate; calyceous leaves oval, sessile, somewhat sinuated; stem simple, few-flowered at top. \( \U 2 \). F. Native of Syria. There is nothing said of the flower and capsule by the authors.

Syrian Bell-flower. Fl. \( \frac{3}{4} \) foot.

* * * Corollas rotate, deeply 5-lobed, usually downy outside. Style exerted.—All natives of Italy.

93 C. Garga'ntica (Ten. fl. neap. prod. 1827.) radical leaves reniform, on long petioles; calyceous ones coriaceous, all crenately toothed, downy; flowers axillary, in fascicles; corollas 5-parted. \( \U 1 \). H. Native of Apulia, on Mount St. Angelo. Sweet, fl. gard. n. s. t. 252. C. elatinus, Ptenag. inst. bot. 2. p. 367. Plant pale green. Corollas blue. Habit of C. Carpatica.

Garganus Bell-flower. Fl. May, Sept. Ct. 1832. Fl. \( \frac{3}{4} \) to \( \frac{1}{2} \) foot.

94 C. Elatino'ides (Morett. pl. ital. dec. 5. p. 5.) plant tormentose; leaves acutely toothed, petiolate; lower ones oblong; superior ones ovate-acute; flowers disposed in dense racemes; tube of calyx ovoid; lobes subulate, spreading, about equal in length to the corolla. \( \U 1 \). H. Native of Italy, on the mountains about Pisa, among stones and on rocks. C. elatinus, Ptenag. inst. bot. 2. p. 307. Plant pale green. Corollas blue. Habit of C. Carpatica.

Elatine-like Bell-flower. Fl. \( \frac{3}{4} \) to \( \frac{1}{2} \) foot.

95 C. Elatino'nes (Lin. spec. 1. p. 240.) stem ascending; leaves coriaceous, coarsely and acutely toothed, ovate-acute; lower ones roundish; flowers in loose racemes; tube of calyx spherical; lobes of calyx spreading; linear-lanceolate, twice shorter than the corolla. \( \U 1 \). H. Native of the Alps of Piedmont, Liguria, Naples, \&c. in shady, rocky places. All. pedem. no. 422. t. 7. f. 2. Plant downy. Stem branched. Flowers scattered over the upper part of the plant, sometimes racemose, and sometimes panicled. Corollas bluish-purple, hardly one-half longer than the calyceous lobes.

Var. \( \beta \), glaberrima (Alph. D. C. mon. p. 301.) plant quite glabrous.

Elatine Bell-flower. Fl. June, Aug. Ct. 1823. Fl. \( \frac{3}{4} \) to \( \frac{1}{2} \) foot.

* * * Corolla campanulate, funnel-shaped, or tubular, 5-lobed at the apex, glabrous.—Roots for the most part thick. All natives of Italy.

96 C. Macb'orni'a (Gay, ind. ex Alph. D. C. mon. p. 593.) root thick; stems ascending; radical leaves petiolate, small, roundish-coriaceous, toothed; lower cauline leaves on short petioles, ovate, acute, toothed; superior ones sessile, linear-acuminate; flowers terminal and axillary; alabastra erect; calyceous lobes acuminate, spreading or reflexed, twice shorter than the corolla, which is campanulate. \( \U 1 \). H. Native of Nice, on dry rocks; Provence, on the mountain called Cousse; and near
CAMPANULACEÆ. XV. Campanula.

San Marco, in Calabria. C. Nicolénsis and C. rupestris, Risso, in herb. D. C. Root thick, marked by the vestiges of the fallen leaves, creeping among rocks. Stem simple or branched, glabrous. Leaves glabrous. Flowers more or less numerous, solitary, pedunculate and pedicellate, as in C. rotundifolia, looking upwards. Corolla broader than those of C. rotundifolia.


Long-rooted Bell-flower. Pl. ¼ to 1 foot.


Portenschlag’s Bell-flower. Pl. ½ foot.

98 C. Billardieri (Alph. D. C. mon. p. 303.) glabrous; stems ascending; radical leaves on long petioles, small, cordate, 3-5-cleft: lobes toothed; flowers few, in loose racemes; calyce segments filiform, rather unequal, two shorter than the corolla, which is tubular. 2. H. Native of Syria. Flowers few, second, drooping. Corollas small, blue. Radical leaves numerous; cauline ones few. Habitat of Wahlenbergia hederacea.

La Billardière’s Bell-flower. Pl. ¼ foot.

99 C. Morettinum (Rehbr. icon. rar. cent. iv. p. 18. t. 320.) plant pilose, humble; stems 1-flowered; leaves crenately toothed, small; radical leaves petiolate, cordate, roundish: cauline leaves smaller, ovate, acute; calyce lobes lanceolate, 4 times shorter than the corolla, which is funnel-shaped. 2. H. Native of Dalmatia, on Mount Biococeo; and of Tyrol, on Mount Vodai, above Vigo, in the valley of Fosia. C. pilla, Parol. hort. sic. ined. but not of Lin. nor Jacq. C. filiformis, Morett. pl. italic. dec. p. 8. giorn. di. fisic. &c. di. Pavia. 1826. vol. 9. p. 156. bot. italic. no. 11. p. 21. no. 4. Flowers erect, blue.

Moretti’s Bell-flower. Pl. 1 to 3 inches.

100 C. Raineri (Perpenti, in bibli. italic. 1817. 5. p. 134. with a figure) stems erect, firm, branched: branches 1-flowered; leaves almost sessile, ovate, remotely serrated: lower ones the smallest, obovate; calyce lobes long-acuminate, erect, twice shorter than the corolla, which is funnel-shaped; capsule obovate. 2. H. Native of Italy, on the Alps in the province of Brixio, and on the mountains surrounding Lake Cosmo; on the Alps of Biondi and Tremare, above Mandello and Ressione, from the termination of the Beech Woods, even to the elevation of 6000 feet and upwards. C. Perpentia, Morett. in herb. D. C. Plant tufted. Caudex creeping. Leaves leafy, rather pilose. Leaves glabrous or downy. Flowers erect, blue.


*** Corollas large, campanulately rotate, somewhat 5-cleft, glabrous. Roots usually thick.

101 C. isophylla (Moretti, append. to Schouw, prospekt. fl. italic. p. 22. Rehbr. icon. pl. cent. 3. t. 292. f. 344.) stems erect, short leaves all about the same size, petiolate, roundish, crenately toothed; flowers corymbose; calyce lobes acuminate, broad, twice shorter than the corolla; style exserted; capsule ovoid. 2. H. Native of Liguria, at Cape Nauli and Caprazoppa. C. floribunda, Viv. fl. lyb. append. fl. italic. p. 67. Caudex woody. Plant glabrous or velvety. Flowers numerous, erect, disposed in a corymbose. Corollas blue, rotate.

Equal-leaved Bell-flower. Pl. ¼ to ½ foot.

102 C. praegillis (Cyril. pl. fasc. 1. p. 32. t. 11. f. 2.) stems ascending, diffuse, branched; radical leaves on long petioles, roundish-cordate, bluntly crenate-lobed: calyce leaves smaller, ovate and lanceolate; flowers panicled; calyce lobes linear-lanceolate, erect, about equal to the corolla; style exserted; capsule ovoid. 2. H. Native of the south of Italy, in the valley of Ananà; near Naples, in Goat’s Island, about Cava; on Mount Pollino and elsewhere in Calabria; and probably of Sicily. C. diffusa, Vahl, symb. p. 18. C. coehleriifolia, Vahl, symb. p. 18. C. crassifolia, Nees, synl. rathb. 1. p. 6. and amon. bot. fasc. 2. p. 9. t. 4.—Barrel. icon. rar. p. 54. t. 27. Root thick. Plant glabrous. Flowers numerous, racemose paniced, terminating the branchlets, erect, pedicellate. Corollas large, pale blue.


103 C. Barrelii (Persib. symb. bot. bo. t. 19. ex Lin. nov. 7. f. 7.) villous; stems diffuse, procumbent, very simple, 1-flowered; leaves roundish-cordate, crenated; flowers terminal; segments of the calyx lanceolate, acute, longer than the tube, which is glabrous. 2. H. Native of Naples, on rocks by the sea side. C. diffusa, var. Rom. et Schultes, syst. 5. p. 92. Corollas blue.

Barrelieri’s Bell-flower. Pl. procumbent.

104 C. versicolor (Sibth. et Smith, prod. fl. græc. 1. p. 138. fl. græc. t. 207.) glabrous; stem ascending; leaves serrated; radical leaves petiolate, ovate, acute, rather cordate: calyce leaves on short petioles, ovate-lanceolate, acuminate; flowers disposed in long spicate racemes; calyce segments acuminate, spreading, at length reflexed, twice shorter than the corolla, which is variegated; style exserted; capsule spheroidal. 2. H. Native of Greece. C. planifóra, Willd. enum. 1. p. 215. but not of Lam. C. Wildenowiana, Rome et Schultes, syst. 5. p. 107. Root tuberous, thick, white, subdivided at top. Stems erect. Corollas campanulately rotate, of a deep violaceous colour at bottom, pale in the middle, and the lobes pale violet. Flowers disposed in long spikes, like those of C. pyramidalis, of which this species has the habit.


Tenore’s Bell-flower. Pl. ½ to 1 foot.

233. Glabrous; leaves glabrously tomentose: lower ones petiolate, ovate-oblong, somewhat cordate; cauline leaves sessile, ovate-lanceolate; flowers numerous, pyramidally racemose; calyces lobes acuminate, spreading; capsule spheroid, deeply furrowed. 2. H. Native on rocks and on walls in Carinthia, Carniola; of Dalmatia, in the island of Viso; on the walls of Venice and Verona. The plant has been cultivated a long time in gardens, and consequently has become, as it were, indigenous in many parts of the south of Europe. Jaun St. Hil. pl. fr. t. 416. — Weimann. phyt. t. 289. f. b. — Moris. oxon. 2. p. 452. sect. 5. t. 1. f. 1. — Beal. hort. eyst. t. 7. f. 1. — Tabl. icon. 317. — Swert. floril. t. 16. f. 2. — Lob. hist. p. 177. icon. 327. — Dod. pempt. 166. with a figure. Root large, turpini-like, oblong, usually divided into fusiform branches. Stem nearly simple, but furnished with floriferous branchlets. Flowers very numerous, pedicellate, usually 3 altogether from the same bractea, the whole disposed in a large pyramidal raceme, which is loose at the base. Corolla pale blue, with a dark base. There is also a white variety of this species.

Variety. (Lin. spec. 233.) Plant monstrosus, 1-flowered, dwarf; leaves all petiolate; calyces segments changed into large leaves. 2. H. — Weimann. phyt. icon. t. 294.


§ 4. Capsule dehiscing laterally by the valves towards the apex, erect. Lobes of calyx usually denticulated. — Radical leaves usually ovate, on short petioles, but never coriaceate. Flowers pedicellate.

* Valves situated between the middle and upper part of the capsule. — Branches not dichotomous.

108 C. Scouleri (Alph. D. C. mon. p. 312.) stem simple, few-flowered; leaves ciliated, sharply serrated; lower leaves ovate, acute, petiolate; middle ones ovate-lanceolate, sessile: superior ones linear-lanceolate; flowers racemose; calyx glabrous, with capillary erect lobes, which are 3 times shorter than the 5-lobed, funnel-shaped corolla; style exerted; capsule ovoid. 2. H. Native of North-west America, about Fort Van Couver, on the banks of the Columbia river. Stems ascending at the base, glabrous or a little hairy, simple at the bottom, and furnished with floriferous peduncles at top. Flowers 4 to 10 on each stem, terminal and axillary, loosely racemose. Habitat of a species of Adenophora. Scouler's Bell-flower. Pl. ½ foot.

* * * Valves situated near the top of the capsule. Flowers usually on long peduncles, terminal or axillary. Brachies not dichotomous.


Var. (Lin. spec. 233.) Ait. hort. kew. 1. p. 220.) stem simple, petiolate; leaves ovate; calyces lobes acuminate at both ends, on short pedicels, serrulate; flowers almost sessile, in a raceme, crowded at the top; calyces segments linear-subulate, erect, entire, rather longer than the corolla, which is funnel-shaped; capsule ovoid, 10-nerved. 2. H. Native of Upper Nipai, on the more elevated mountains. Root simple, glabrous. Stems usually undivided, but sometimes furnished with a few simple branches, angular. Leaves hispid. Petioles pilose. Flowers small, blue, in fascicles, from the axils of the upper leaves, the whole forming an oblong terminal raceme.

Fulgent Bell-flower. Pl. 1 foot.

112 C. perierina (Lin. syst. p. 301.) plant hispid; stem simple, many-flowered, angular; leaves crenated: lower ones ovate: superior ones ovate, acute; flowers disposed in a spicate raceme; calyces lobes acuminate, nearly entire, rather shorter than the corolla, which is spreading; capsule ovoid. 2. H. Native of Mount Lebanon, and near Aleppo. Jacq. hort. schoenbr. 3. p. 337. Sims. bot. mag. t. 1257. Hoffm. and Link. fl. port. 2. p. 15. t. 83. C. lanuginosa, Lam. dict. 1. p. 584. but not of Willd. C. hissittissima, Guss. ined. Flowers sessile, solitary, disposed in a long dense spike. Corollas funnel-shaped, hardly one-half longer than the calyces lobes, of a violet color, at the base, of a less deep color in the middle, and paler towards the margins.


113 C. Primulefòlia (Brot. fl. lus. 1. p. 288. phyt. lus. 1. t. 20.) stem hispid, many-flowered, simple; leaves unequally and doubly crenated: radical ones lanceolate, bluntish; cauline
leaves ovate-oblong, acute; flowers disposed in a spicate raceme; calyceine lobes acuminate, broad at the base, denticulated; corolla campanulately rotate, twice longer than the calyceine segments; capsule long, obconical. 2. H. Native of Portugal, in shady, humid places of the Algarves and Beira, and near Coimbra; above Punheira, and about Monchica. C. Trachéillum, Broit. fl. lus. 1. p. 287. Root oblique, branched, thickened into tubers at top. Leaves hispid on the ribs and veins. Flowers erect. Corollas nearly glabrous, blue, rarely purple, with a whitish downy bottom.

Primrose-leaved Bell-flower. Pl. 1 to 2 feet. 114 C. ALATA (Desf. fl. atl. 1. p. 178, t. 50.) stem few-flowered, simple, glabrous; leaves irregularly toothed, glabrous; lower ones ovate, acute; calyceal leaves lanceolate; flowers few, disposed in racemose heads; calyx with a hispid tube, and liocar-lanceolate, acute, rather ciliated segments; corolla broadly campanulate, twice longer than the calyceine segments; capsule spherical. 2. H. Native of the north of Africa, near Mairal. Stem angular. Flowers sessile on the top of the stem. Corolla blue, size of that of C. pyramidalis.

Wingèd Bell-flower. Pl. 2 to 3 feet. 115 C. PFRNCEFOLIA (Lam. dict. 1. p. 579.) stems simple, many-flowered; radical leaves crowded, linear-lanceolate, serrated; flowers sessile, disposed in a loose spike; calyx with a spherical tube and triangular lobes, which are thrice shorter than the tubularly-campanulate corolla. 2. H. Native of Armenia. Desf. choix. cor. p. 55. t. 25. or in ann. mus. 11. p. 56. t. 6. Radical leaves rosalate. Plant glabrous. Flowers erect, violaceous.

Sneezewort-leaved Bell-flower. Pl. 1/2 to 1/2 foot. 116 C. CAPRANCA (Jacq. hort. vind. 1. p. 22. t. 57.) plant glabrous, branched; lower leaves on long petioles, ovate-roundish, cordate, toothed: superior ones on short petioles, ovate, acute; flowers disposed in loose panicles, on long peduncles; calyceine lobes eretic, triangular, acuminate, thrice shorter than the corolla, which is broadly campanulate; capsule ovoid-cylindrical. 2. H. Native of Transylvania, and at the sides and bottoms of the mountains of Liptovia, to the south of the Carpathian mountains; among calcareous alpine rocks. Curt. bot. mag. t. 117. Root fibrous. Stems leafy. Branches or peduncles elongated, naked, each terminated by an erect flower. Corollas blue, about the size of those of C. persicefólia.


119 C. PERSICEFOLIA (Lin. spec. ed. 1. p. 164.) stems nearly simple; leaves glabrous, still, crenulate: radical leaves lanceolate-obovate: calyceal leaves linear-lanceolate; flowers racemose; calyceal lobes acuminate, broad at the base, entire, twice shorter than the corolla, which is broadly campanulate; capsule ovoid, trilobate, dehiscing by broad pores. 2. H. Native of the south and temperate parts of Europe; from Spain, Italy, Greece, even to Scotland; south of Sweden; about Petersburg and Moscow, and throughout Siberia, especially towards the east, and the Altaian mountains; constantinople; tolerating in subalpine shady places, and woods; in Scotland, in woods near Cullen. Bull. herb. t. 367. Oed. fl. dan. t. 1677. Sibyth. et Smith, fl. geac. t. 205. C. decurrens, Lin. spec. ed. 2. p. 222. C. speciosa, Gilib. plth. p. 10. but not of Horn. C. amygdalifolia, Salisb. prod. p. 126.—Weinm. phyt. icon. t. 291. f. and b. and t. 290. f. et d.—Swert. florl. pt. 2. t. 16.—Besl. hort. syst. 1. t. 8. f. 2. and 3.—Tab. icon. t. 317.—Lob. icon. t. 327.—Moris. oxon. 2. p. 452. sect. 5. t. 1. f. 2. Plant glabrous. Flowers terminal and axillary, pedunculate, solitary, inclined, the whole forming a raceme. Corollas large, broad, campanulate, blue, and all the intermediate shades to white.


120 C. PYREXIA (Alph. D. C. mon. p. 324.) stems simple, 1-flowered, beset with soft hairs; leaves rather pilose: radi-
cal leaves roundish, a little crenated, on short petioles: cauline leaves sessile, lanceolate, nearly entire, acute at both ends; calyx glabrous: with subulate, spreading, entire lobes, which are rather shorter than the corolla. 2. H. Native of the Pyrenees, and of the Balearic Islands. Flowers terminal, erect. Corolla blue?

Pyrenean Bell-flower. Pl. 1 to 1 1/2 foot.

121 C. Rapiicolus (Lin. spec. p. 323.) stem almost simple; lower leaves ovate, on short petioles, nearly entire: cauline leaves sessile, linear-lanceolate, entire; flowers spicate race-mose, solitary; calycine lobes erect, long-subulate, very slender, rather shorter than the corolla, which is funnel-shaped; capsule obconical, trilaciate. 3. H. Native of Morocco and Barbary; as also of the south of Europe, and extending as far north as the county of Norfolk, in England; as well as of Transylvania and Caucasus. In Britain, on banks and at the borders of fields; not common. About old Buckingham Castle, Norfolk. In many parts of Kent and Surrey, as well as in other places on a gravelly soil; having formerly perhaps escaped from gardens. Smith, engl. bot. t. 283. Schrank, enc. no. 406. t. 39. Oed. fl. dan. t. 1326. Svenk, bot. t. 629. C. fastigiata, Gmel. reis. 1. p. 153. t. 33. but not of Dufour. C. coecatata, Gilib. pl. lth. p. 8. C. esculenta, Salisb. prod. p. 126. C. elatior, Link, et Hoffm. fl. port. 2. p. 11. t. 80. C. glandulosa, Banks, herb. Tourn. inst. 111. Morand. hist. p. 69. t. 39. f. 3.—Moris, oxon. sect. 5. t. 2 f. 20. and f. 1. Column. phyt. 192. with a figure. Lob. icon. t. 328. Root fusiform, thick, white. Stem simple, but sometimes furnished with a few branches towards the top, furrowed, glabrous, but pilose at the base. Leaves usually glabrous, but sometimes hairy. Flowers nearly sessile, or pedicellate, erect, forming a long raceme, which is branched at the base. Corollas blue or white. This plant varies in the stem being glabrous or pilose, in the length of the pedicels, in the tube of the calyx being glabrous or strigose, in the calycine teeth being entire or a little denticulated at the base. The root is milky, thick, and edible, and, with the leaves, is mixed in salads; and, therefore, it was formerly cultivated for that purpose. In France and Italy the roots are boiled and eaten hot with sauce, or cold with vinegar and pepper. The seed is sown in the spring on deep light soils, in drills, and the plants are ready for use in the autumn of the same year. It is called Rupuncule in Italy; Rapunzelo, in Portugal; Raiponce, petite Raiponce, in France; Rampion, and Small Rampion, in England; Rapunzel, Ruben, or Blau Bluhende Wurzel, Rapunzel, Purwitzlein, in Germany; Rzepka, in Bohemia; and Akla Rapunzel, in Sweden.


122 C. Lambertiana (Alph. D. C. mon. p. 327.) stem simple, many-flowered, pilose; calamine leaves sessile, oblong- acuminate, irregularly denticulated, rather pilose; flowers disposed in a spicate raceme; calyx glabrous, with acuminate, spreading, coarsely, and acutely-toothed lobes, rather shorter than the corolla, which is obconical. 3. H. Native of Persia, in the province of Ghilan. Flowers disposed in a spike-formed raceme, furnished with a few branches at its base, as in C. Rapiicolus. Corollas white?

Lambert’s Bell-flower. Pl. 1 1/2 to 2 feet.

123 C. virgata (Labill. pl. syr. dec. 2. p. 11. t. 6.) stem simple, many-flowered; radical leaves lanceolate, crenulated, petiolate: calamine ones sessile, linear-lanceolate; flowers spicate, usually twin or tern; calyx with a scabrous tube, and erect subulate lobes, which are twice or thrice shorter than the funnel-shaped corolla; capsules obconical. 3. H. Native of Mount Lebanon. Root thick. Stem hardly leafy, rather scabrous below, but smooth at top. Leaves scabrous. Flowers sessile, erect, 1-3 from each axil, forming a long interrupted spike. Corollas blue?

Twygge Bell-flower. Pl. 1 1/2 to 2 feet.

124 C. Herminii (Hoffm. et Link, fl. port. 2. p. 9. t. 79. Roem. et Schultes, syst. 5. p. 328.) glabrous; stem ascending, simple; leaves nearly entire: radical ones lanceolate: calamine ones linear-lanceolate; petioles ciliated at the base; calycine lobes long, capillary, reflexed, rather shorter than the corolla, which is funnel-shaped. 3. H. Native of Portugal, at the high mountains called Serra d’Estrella. Root rather thick, creeping. Stem panicked at the top, as in C. rhomboidealis. Pedicels 1-flowered. Corollas pale blue.


125 C. falata (Lin. spec. ed. 1. p. 163.) stem branched; branches diverging; radical leaves crowded, obovate, crenated; calamine leaves linear-lanceolate, sessile, nearly entire; calycine lobes long-acuminated, spreading, serrated at the base, twice shorter than the corolla, which is funnel-shaped; capsule ovate-cylindrical. 3. H. Native of the south and temperate parts of Europe; as of the Pyrenees, Spain, throughout Italy, the Morea, and also in the region of Tunis. Root, to the Carpathian Mountains, but not below them; Transylvania; about Petersburg and Moscow, but is never to be found in Europe beyond lat. 61. In England, in pastures, borders of fields and hedges; rare in several parts in Kent; in many places about Alcestor; in Worcestershire, and Staffordshire, &c. Oed. fl. dan. t. 573. Smith’s engl. bot. t. 42. Hook. fl. lond. t. 51. C. bellidifolia, Lapeyr. abr. p. 36. C. decurrens, Lin. spec. ed. 1. p. 164. Diffuse Bell-flower, Hill. veg. syst. 8. t. 1. —Weldr. phyt. Icon. t. 290. f. R. Dil. Hort. Eth. t. 58. f. 68. Resl. syst. ord. 1. 5. t. 8. Root small, slender, branched. Stems glabrous, or scabrous from pili on the angles. Branches divaricate, nearly naked. Leaves glabrous. Flowers panicked, terminal, and axillary, on long pedicels, large, erect. Corollas blue or white. This is a very polymorphous plant.


Var. γ. latifolia (Alph. D. C. l. c.) stem branched, glabrous, scabrous on the angles; calamine leaves lanceolate, broad, serrated; calycine segments very long, rather longer than the corolla.

Var. ε. paciflora (Alph. D. C. l. c.) stem humble, branched a little, almost naked; flowers terminal, and axillary, few, large; corolla campanulate, one half longer than the calycine segments. Column. ecphr. p. 24. with a figure. Tourn. inst. 111.

Var. ε. neglecta (Alph. D. C. l. c.) calyxine lobes reflexed, serrulated, toothed at the base, acuminated, a half or a third the length of the corolla. C. neglecta, Roem. et Schultes, syst. 5. p. 104.


126 C. erinoides (Lin. mant. p. 64.) Cav. ann. cienc. 3. p. 20.) stem humble, few-flowered, with scabrous angles; leaves small, linear-lanceolate, glabrous, crenulated: lower ones obtuse: superior ones acuminated; calycine lobes long, subulate,
entire, rather shorter than the corolla, which is funnel-shaped; capsule long-obconical, nearly terete.  


127 C. Matrænæsis (Alph. D. C. mon. p. 532.) stem humble, few-flowered; leaves linear-lanceolate, nearly entire: lower ones obtuse: superior ones acute; calycine lobes long-subulate, erect, entire, rather shorter than the corolla, which is narrowly funnel-shaped; capsule obconical, elongated, having the nerves rather prominent. . H. Native of Spain, about Madrid. Root slender, filiform. Stem simple, but furnished at top with 1-flowered peduncles, which diverge more or less. Flowers erect, blue.

Madrid Bell-flower. Pl. 1/2 to 1/4 foot.

128 C. ramosissima (Sibth. et Smith, fl. græc. t. 204.) stem branched, many-flowered, pilose; leaves ovate-lanceolate, created: lower ones obtuse: upper ones acute; calyx with a pilose tube, and acuminate entire lobes, which are pilose outside, and rather shorter than the spreading corolla; capsule obconical, pilose, having the nerves rather prominent. . H. Native of the province of Verona, near Valleggio, where it was first collected by Lory; and on Mount Baldero by Rainer. C. Loreiæna, Loreiæ, or Lorei, Poll. elem. bot. t. 2. p. 148. ultimate table, f. 1. Poll. fl. ver. 1. p. 271. t. 2. f. 4. Sims, bot. mag. t. 2581. C. Baldensia, Balb. cat. hort. taur. 1813. p. 20. C. ramosissima, Host, fl. austr. 1. p. 264. but not of Sibth. et Smith. Root slender, fibrous. Stem glabrous or hispid. Peduncles long, naked, glabrous, bearing each an erect flower at the apex; but the alabastrum is drooping before expansion. Corolla with a white base, middle part or base of the lobes pale blue, and the lobes bluish-violet.


Decumbent Bell-flower. Pl. decumbent.

131 C. Loefflingii (Brot. phyt. fasc. 1. no. 10. fl. lus. 1. p. 237.) stem much branched, many-flowered, rather scabrous on the angles; leaves crenulated: lower ones ovate-reiniform, or roundish-cordate: superior ones ovate, stem-clasping; calyx glabrous, with an obconical tube, and long-acuminated spreading lobes, which are rather shorter than the corolla; capsule obconical, with prominent nerves. . H. Native throughout Portugal, in sandy places; of Spain, about Madrid; and of the territory of Mogodor. Broth. phyt. lus. sel. p. 41. t. 18. Hoffm. et Link, fl. port. 2. p. 14. t. 82. C. Broussonetiæana, Lem. et Schultes, syst. 5. p. 104. Root slender, fibrous. Leaves glabrous. Flowers solitary, terminating the naked branchlets, loosely panicked, drooping. Corolla funnel-shaped, blue, or violaceous, with a deeper coloured zone beneath the middle, white at the base, both inside and outside. In one variety, the calyx is downy.


132 C. retrorsa (Labill. fl. syr. dec. 5. t. 3.) stem few-flowered, angular, scabrous from retrograde prickles or bristles on the angles; lower leaves roundish-obovate, petiolate, somewhat sinuated, glabrous: superior leaves ovate-lanceolate, entire, with scabrous edges; calycine lobes long-acuminated, spreading, scabrous from serrulations, longer than the corolla, which is funnel-shaped; capsule obconically elongated. . H. Native on Mount Lebanon. Root slender, fibrous. Branches elongated, naked, each terminated by an erect flower. Corolla drooping before expansion. Corolla mixed with white and violet.

Retrograde-bristled Bell-flower. Pl. 1/2 to 1/4 foot.

133 C. Zosyni (Wulf. in Jacq. coll. 2. p. 122.) plant tufted; stems erect, few-flowered; leaves entire: radical ones crowded, petiolate, ovately-obovate, obtuse; cauline leaves obovate-lanceolate, and linear; calycine lobes subulate; corolla long-cylindrically veiny; capsule ovoid-spherical. . H. Native of the Upper Alps of Styria, Carniola, Carinthia, &c. Jacq. icon. rar. 2. t. 334. Plant small, glabrous, tufted. Root creeping, throwing out many small stems, which bear from 1 to 3 flowers each. Leaves crowded at the base. Flowers pedicellate, drooping. Corolla cylindrical, elongated, pale blue, with 5 deeper coloured lines; rarely white.


134 C. Cenista (Lin. spec. suppl. p. 1669.) plant tufted; stems ascending, 1-flowered; leaves entire: radical ones obovate, obtuse, obtuse: cauline leaves ovate-oblong; calyx hairy, with linear-lanceolate lobes; corolla 5-cleft, hardly twice the length of the calycine lobes; capsule ovoid. . H. Native of the Higher Alps of Provence, Piedmont, Dauphiny, Savoy, Vallas; on Mount Cenis; and of Switzerland, on the mountains called Diablerets, &c. All. pedem. no. 295. t. 6. f. 2. Rehb. icon. bot. cent. 1. p. 85. All. rar. stirp. spec. 35. t. 5. f. 1. Root creeping, blackish. Stems numerous, glabrous, or slightly pilose. Flowers solitary, terminal, erect. Corolla deep blue, hardly one half longer than the calycine lobes.

Far. ß, angustifolia (Schrad. prim. salisb. p. 70.) leaves narrow. . H. Native of the Alps of Salzburg.


135 C. spatula (Sibth. et Smith, prod. fl. græc. 1. p. 137. fl. græc. t. 203.) stem ascending, 1-flowered, pilose; lower leaves petiolate, obovate, crenated: superior ones lanceolate; calyx with an obconical tube, and linear-acuminated toothed lobes; corolla subcampanulate, hardly longer than the calycine lobes; capsule spheroid. . H. Native on Mounts Olympus and Parmassus. Root slender, twisted. Stem solitary, angular. Leaves rather pilose, but becoming more smooth and entire as they ascend the stem. Flowers terminal, erect, blue.

136 C. A’lóid’a (Fisch. miss. ex Alph. D. C. mon. p. 338.)
plant humble; stems nearly naked, 1-flowered; radical leaves crowded, obovate-lanceolate, setaceaously denticate; tepaloles ciliate; calyx with a villous tube, and denticulated acuminate lobes; corolla campanulately funnel-shaped, twice longer than the calycine lobes; capsule somewhat cylindrical.  2. H. Native of Kamtschatka, Unalaska, Kotzebue’s Sound, Cadiak, and Sedge Island, as well as of the Rocky Mountains in America. C. lasiocarpa, Cham. in Linnæa. 4. p. 39. exclusive of the syn. Camp. Sayénensis, Fisch. Root slender, white. Stem glabrous, or slightly pilose. Flower terminal, erect. Corolla large for the size of the plant, blue.  

A'gigid Bell-flower. Pl.  ½ to 4 foot.  

137 C. uniflóra (Lin. spec. p. 251. but not of Vill.) stems 1-flowered; leaves nearly entire; lower ones obovate, petioloate; middle ones obovate-lanceolate; upper ones few, linear-flattened; calyx rather villous, with linear acuminate lobes, about equal in length to the corolla, which is funnel-shaped; capsule cylindrical.  2. H. Native of the polar region of America, as in the Island Unalaska; north side of the Rocky Mountains; between Point Lake and the Arctic Sea; Kotzebue’s Sound, Melville Island, Greenland; and of the north of Europe, as in Lapland, Sweden, Norway, &c. Svenk. bot. t. 526. Rothb. pl. greenl. in act. hafn. x. p. 522. t. 6. f. 19. Oed. fl. dan. t. 1512.  

—Lin. fl. lap. no. 85. t. 9. f. 5-6. Root simple, blackish. Stems simple, glabrous. Leaves glabrous. Flower drooping; deep azure blue.  


* * *  

Valves situated near the apex of the capsule. Flowers on short pedicels. Leaves opposite. Branches usually more or less dichotomous.  

138 C. fastigı’ata (Dufr. in herb. D. C. ex Alph. D. C. mon. p. 340. t. 12. f. B.) plant scabrous, humble; lower leaves obovate, nearly entire; middle ones obovate-lanceolate, coarsely 3-5-toothed; upper ones linear-lanceolate; corolla one half shorter than the calycine segments, which are linear-lanceolate; capsule obconical.  2. H. Native of Spain, in Arragon and about Aranjuez. Plant of a greyish colour. Stem branched, erect; branches diverging. Leaves rather small or glabrous. Flowers sessile, erect, terminal, rising from the axils or above the axils of the branches, always opposite the leaves, particularly terminating the stem and branches. The flowers situated in the lower axils expand before the rest. Corollas small, blue.  

Fastigate Bell-flower. Pl.  ½ foot.  

† Species not sufficiently known.  

139 C. ligula’ris (Lam. dict. 1. p. 585. ill. no. 5247.) leaves numerous, alternate, oblong, narrow, obtuse, entire, and ciliate; flower erect, terminal, middle-sized; calyx hispid, with nearly linear segments and covered sinuses; corolla tubularly campionate, bearded a little; stem leafy, nearly glabrous, 1-flowered.  

—Native of the Alps of Europe.  

Ligula’-leaved Bell-flower. Pl.  ½ foot.  

140 C. asper’a’ma (Zuccagni in Rœm. coll. p. 128.) leaves hastate, tomentose, spiny-toothed; flowers axillary; corolla tomentose and hispid outside.—Native country unknown. Stem solitary, erect, tomentose. Caluine leaves imbricate, hasteately cordate, reticulated and tomentose, especially beneath. Flowers axillary, sessile, solitary. Calyx spiny, shorter than the corolla. Corolla tubularly campionate, violaceous.  

Very rough Bell-flower. Pl.  ½ foot.  

141 C. decú’rerens (Zuccagni in Rœm. misc. p. 128.) stem winged; leaves decurrent, toothed, hispid; corolla tomentose and hispid on the outside.—Native country unknown. Stem flexuous, winged from the leaves being decurrent. Leaves spatulate, reticulated and tomentose, especially beneath. Flowers axillary, crowded, seated on a common peduncle. Bracteas cordate. Calyx hispid.  

Decurrent-leaved Bell-flower. Pl. 2 feet.  

142 C. aspera (Mœch. suppl. p. 188.) stem terete, straight, quite simple; leaves oblong, sessile, crenated; peduncles 3-flowered.  2. H. Native country unknown. Plant hispid from pili. Leaves obtuse, stiff; radical ones petioloate; caulescent ones sessile, remote. Racemes loose, terminal. Flowers axillary; intermediate one pedunculate, lateral 2 adnate to the common peduncle. Corolla blue. Stigma trifid. Capsule 3-celled.  

Rough Bell-flower. Pl. 3 feet.  

143 C. cymbalá’ria (Sibth. et Smith, prod. fl. græc. 1. p. 139.) leaves reniform, cut, quite glabrous, shining; stems diffus.  2. H. Native of Mount Olympus, in Bithynia. Camp. foliis cymbalariarum erat montis Olimpi Bithyni, Tour. cor. Perhaps this is either C. frigidia, or C. Bellardii.  

Cymbalária-leaved Bell-flower. Pl. diffus.  

144 C. Want’eri (Roch. pl. banat. var. t. 5. f. 12.) C. hetrophyllia, Baumg. fl. trans. suppl. ex Feruss. bull. sc. febr. 1829. Nothing is known of this species.  

Wanner’s Bell-flower. Pl.  

145 C. lanceolata (Presl. ex Wanderoth, beitr. zu. fl. Von Hessen. p. 37. but not of Lapeyr.) Nothing more is known of this plant.  

Lanceolate-leaved Bell-flower. Pl.  

146 C. monta’na (Delarb. fl. auvergn. p. 40.) Native of Auvergne. Nothing is known of this plant but the name.  

Mountain Bell-flower. Pl.  

147 C. rige’scens (Pall. ex Rœm. et Schultes, syst. 5. p. 102.) leaves lanceolate; radical ones attenuated into the petioles, crenated; caluline ones sessile; stem straight, simple, downy; flowers terminal, racemose; calyces ciliated. Native of Siberia, about Lake Baical, in frigid places. Corolla ½ inch long, twice the length of the calyx, with the segments a little. Style a little longer than the calyx. Stem a spain high, few-flowered.  


148 C. adsc’nedens (Vest, in Rœm. et Schultes, syst. 5. p. 90.) leaves scattered; lower ones on short petioles, ovate-toothed; superior ones oblong, quite entire, glabrous as well as the stem, which is ascendent; flowers solitary, drooping; calycine leaflets subulate, a little shorter than the corolla. Native of Siberia. C. rotundifolia, Pall. ex herb. Lamb. Very nearly allied to C. uniflóra.  

Ascending Bell-flower. Pl. ascending, ½ foot.  

149 C. hetero’doxá (Vest, in Rœm. et Schultes, syst. 5. p. 98.) leaves oblong, glabrous; flowers axillary, pedunculate, spreading; calyx short, with lanceolate-subulate segments, which are a little shorter than the corolla.  2. H. Native of Siberia. C. rotundifolia, Pall. herb. Peduncles axillary, capillary, 1-flowered, roughish, furnished with bracteoles.  

Heterodox Bell-flower. Pl.  ½ to 1 foot.  

150 C. lunár’éfóliá (Wild. rel. ex Rœm. et Schultes, syst. 5. p. 92.) leaves ovate, deeply cordate, petioloate, doubly serrated; flowers secund.  2. H. Native of Caucasus.  

Lunaria-leaved Bell-flower. Pl. 1 foot.  

151 C. kitaibelli’ana (Rœm. et Schultes, syst. 5. p. 90.) lower leaves obovate-cuneiform, crenated: superior one linear, quite entire; stem quite simple, 1-flowered.  2. H. Native of Austria. C. microphylla, Kit. in Schultes, fl. austr. 2. ed. no. 400.

153 C. e'legans (Rom. et Schultes, syst. 5. p. 105.) leaves linear-lanceolate, quite entire; lower ones the broadest, smooth, and tapering into the petioles; stem downy; flowers axillary, at length spicate; calyces segments saccate, divaricate, rather punkent, length of corolla. 2. H. Native of Siberia. C. speciosa, Willd. rel. ex Rom. et Schultes, l. c. Stem simple, terete, weak. Flowers terminal, and rising from the axille of the superior leaves, forming an interrupted spike, hardly pedunculate.


Kamtschatka Bell-flower. Pl. ½ foot?

Cult. All the species are elegant and handsome when in blossom, and are well adapted for decorating flower borders. They are general thrive well in common garden earth. The seeds of the biennial and annual kinds should be sown in the open border in spring. The perennial species may either be propagated by division or by seed. Some of the perennial and biennial species, natives of the warmer latitudes, require a little protection in winter, when the weather is severe. Some of the smaller perennial kinds answer well for decorating rockwork, or to be grown in pots, among other alpine plants.

XVI. SPECULARIA (so called from the ancient name of one of the species, Speculum Veneris, or Venus's Looking-glass).


Lin. syst. Pentámória, Monogénia. Calyx 5-lobed, with an elongated, prismatic, or long-obconical tube. Corolla rotate, 5-lobed. Stamens 5, free, one-half shorter than the corolla; anthers longer than the filaments, which are short, membranous, and pilose. Style inclosed, pilose: hairs secund, disposed in 10 rows; stigmas 3, filiform. Capsule long, prismatic, 3-celled, dehiscing by 3 valves at the apex, or a little above the middle part. Seeds ovoid or lenticular, rather compressed, shining. — Dwarf annual herbs, natives of the region of the Mediterranean, and the temperate parts of Europe; one species alone a native of America. Leaves alternate, equally scattered over the stem, small; lower ones unlike the rest. Flowers terminal and axillary, erect, always sessile. Corollas blue; rose-coloured, white, grey, or variegated, shining in the sun; hence the generic name.

* Tube of calyx very long, prismatic, and angular. Capsule dehiscing towards the top, near the lobes of the calyx. Seeds ovoid. Leaves ovate-oblong or lanceolate, nearly entire, not stem-clapping.

1 S. pentágonia (Alph. D. C. mon. p. 344.) stem branched, larger; flowers terminal, solitary; calyx beset with a few stiff hairs, having a long prismatic tube, and long linear-lanceolate, spreading lobes; corolla the length of the calyce lobes. 2. H. Native of the Levant, about Aleppo; in Caramania, Candia, Thrace, &c. Campánula pentágonia, Lin. spec. 1. p. 239. Desf. choix. cor. p. 44. t. 33. or ann. mus. 11. p. 143. t. 18. Ker. bot. reg. t. 56. Prisimato-carpus pentágonius, Lher. sert. angul. p. 2. Stem glabrous or pilose on the angles. Leaves glabrous, nearly entire or crenulated, with revolute edges; lower leaves obovate; middle cauline ones lanceolate-ovabote; upper cauline ones linear-lanceolate. The corolla before expansion is blunt and pentagonal, but when expanded large, white at the base, blue to the middle part, and violaceous at the extremity of the lobes.


2 S. falca'ta (Alph. D. C. mon. p. 345.) stem nearly simple; flowers disposed in long spikes, or approximate at the tops of the branches; calyx glabrous or scabrous on the margins, with a prismatic tube, and very long lanceolate acuminate lobes, which are reflexed at the apex, and are twice the length of the corolla. 2. H. Native of the region of the Mediterranean; as of the Island of Chalès or Euba; of Dalmatia; about Naples; and of Sicily, Corsica, and Sardinia; among corn, and on dry hills. Campánula falcata, Rom. et Schultes, syst. 5. p. 154. Guss. pl. rar. p. 96. Prisimato-carpus falcatus, Tenere, prod. p. 16. fl. neap. 1. p. 77. t. 20. Sebas et Maur. fl. rom. prod. 1. p. 102.—Buxh. cent. 4. p. 24. t. 35.—Cupan. panph. 2. t. 20. Stem glabrous or a little scabrous on the angles. Leaves glabrous, rarely pilose, with rather revolute edges, crenulated. Flowers sessile, solitary, axillary, the whole forming a leafy spike. Corolla rose-coloured. Lobes of calyx falcate.


3 S. spec'ulum (Alph. D. C. mon. p. 346.) stem branched; branches 3-flowered; calyx glabrous or downy, with a prismatic tube, which is narrow at the apex, and linear-lanceolate spreading lobes, which are at length reflexed; corolla length of the lobes of the calyx. 2. H. Native of the temperate parts of Europe, and throughout the region of the Mediterranean Sea, in corn-fields; in Germany, Transylvania, Pyrenees, Spain, Italy, Greece, Syria, Barbary, &c. Campánula speculum, Lin. spec. p. 238. Curr. bot. mag. t. 102. Smith, fl. gracc. t. 216. Lagozizia arvensis, Durand. fl. bourg. 1. p. 37. Prisma-carpus speculum, Lher. sert. angul. p. 2. Campánula pulchella, Salisb. prod. p. 137. Lagozizia Durandii, Delarb. fl. avuergni. p. 45. Campánula miróre de Venus, Jaume, pl. fr. t. 73. Camp. cordata, Visiani. strirp. dalm. spec. p. 5. t. 2.—Weim. phyt. t. 286. Besl. syst. 7. t. 1. f. 1.—Gesen. tab. phyt. 9. t. 76.—Lob. icon. 418.—Dodd. pempt. p. 168. t. 1.—Mor. oxon. 2. p. 457. sect. 5. t. 2. f. 21. Branches glabrous or scabrous on the angles. Leaves crenulated, glabrous or scabrous; lower ones obovate; middle ones ovate-acute; superior ones lanceolate, nearly entire. Flowers terminal and axillary, showy. Corolla greenish-white at bottom, deep violet towards the middle part, and the lobes less violaceous, paler on the outside. There is also a variety with white flowers.

**CAMPANULACEÆ. XVI. Speculatia.**

*Var. č Libánica* (Alph. D. C. mon. p. 347.) stem humble, simple, erect; leaves erect; flowers approximate at the apex.


4 S. *hybrida* (Alph. D. C. mon. p. 348.) stem nearly simple; flowers approximate at the top of the stem; calyx subriform, with a prismatic tube, which is narrower at the apex, and short erect ovate-lanceolate lobes; corolla one-half shorter than the calycine lobes. O. H. Native of the region of the Mediterranean, and the temperate parts of Europe, and of Cauca-
 cusus, in corn-fields; from Barbary, Spain, Sardinia, Italy, Sicily, and Morea, even to England, Germany, and Siberia; in Taunus, Georgia, and Transylvania. Campánuła híbrida, Lin. spec. 259. Smith, engl. bot. t. 375. Platycocarpus híbridos, Léer. ser. angl. p. 2. Ten fl. neap. 1. p. 77. Platycocarpus conjunctus, Moench, meth. p. 496. Leucozúa híbrida, Delarb. fl. auvergn. 47. Camp. spária, Wall. ind. Rœm. et Schultes, syst. 5. p. 154. Leucozúa parviflóra, Gray, nat. arrang. brit. fl. p. 410.—Cupani. panph. 1. t. 100. Raf. t. 100. f. 2.—Mor. oxon. 2. p. 457. sect. 5. t. 2. f. 22. Stem more or less scabrous from pli on the angles. Leaves ovate, more or less pilose; lower ones obovate; middle ones ovate, acutish; superior ones smaller and ovate-lanceolate. Flowers 3-6, crowded towards the top of the stem, sessile, rising from the axils of the upper leaves and top of the stem. Corollas rose-coloured, or of a bluish rose-colour.


5 S. *Cia* (Alph. D. C. mon. p. 350.) stem humble, nearly simple; flowers few, approximate towards the top of the stem; calyx downy, with prismatic tube, and erect lanceolate-sulcate lobes; corolla twice longer than the calycine lobes. O. H. Native of the Island of Cois, in the sand by the sea side. Campanula spéculum, var. D'UrTu enum. pl. arch. in mem. Lin. par. 1. p. 280. Platycocarpus híbridos? or a new species? D'UrTu in herb. D. C. Stem pilose, downy at top. Leaves pilose, greyish; lower ones obovate; middle ones sessile, ovate-acute; superior ones narrower and lanceolate. Flowers 3-6 towards the top of the stem, sessile, axillary, and terminal. Corolla blue or white.

Cois Venus's Looking-glass. Pl. ½ to ½ foot.

6 S. *Ghiłanënsis* (Alph. D. C. mon. p. 350.) stem simple or a little branched; leaves lanceolate, acuminate, serrated; flowers subracemos; segments of the calyx acuminate, serrated, longer than the corolla. O. H. Native of Persis, in the province of Ghiłan. Campanula Ghiłanënsis, Pall. ind. ex Rœm. et Schultes, syst. 5. p. 154. Very like S. spéculum, but differs in the stem being simple and much higher, in the calycine segments being serrated, and ending each in a long setaceous twisted mucrone.

**Ghiłan Venus's Looking-glass.** Pl. 1 foot.

* Tube of calyx long, obconical, smooth. Capsule dehiscing towards the middle part. Seeds rather lenticular. Leaves ovate- 
roundish, clasping the stem.


Cult. All the species are showy border annuals, and are therefore worth cultivating in every garden. The seeds only require to be sown in the open ground, where the plants are intended to remain. By sowing the seeds in the autumn, the plants will blossom early in summer, and by successive sowings in spring, at intervals of a fortnight or three weeks, a succession of blossoming plants may be kept up.


**Lin. syst. Pentándria, Monogynía.** Calyx 5-lobed at the apex, with a very long tube. Stamens 5, free; filaments very long, filiform, glabrous, much longer than the anthers. Style twice longer than the corolla, glabrous, pilose only at the apex about the stigmas; stigmas 2-3, small, obtuse. Capsule 2-3-celled, wholly inferior, spheroidal, dehiscent at the base by lateral pores. Seeds ovoid, small, bay-coloured, shining.—Herbs with erect, glabrous stems, alternate leaves, and corymbose erect small flowers.—Inhabitans of the north of Africa.

1 T. *coriælum* (Lin. hort. ups. 41. spec. 243.) leaves ovate, acute, cosseted serrated, on short petiolo; corolla violaceous, salver-shaped, with a very long narrow tube; stigma trifid. 24. H. Native of the region of the Mediterranean, among rocks; in Spain, Mogod, Sicily, Calabria, Italy, but not farther north than lat. 45°, as about Rome. Hill. veg. syst. 8. t. 16. Boissieu, fl. europ. t. 137. Ker. bot. reg. t. 72.—Barrel. Icon. 693.—Mor. oxon. sect. 5. t. 5. f. 12. Stem glabrous. Leaves glabrous or ciliated. Flowers very numerous on the tops of the stem and peduncles, forming a wide-spread corymb. Corollas violaceous.


**Narrow-leaved Throat-wort.** Pl. 1 foot.

Cult. The species are very showy when in blossom. They grow best in a light soil, against a south wall, or in front of a hot-house; and they may either be increased by seed or by cuttings, planted under a hand-glass in spring.


5 F
CAMPANULACEÆ.

Lin. syst. Pentandria, Monogynia. Calyx 5-cleft. Corolla campanulate or funnel-shaped, 5-lobed at the apex. Stamens 5, free; filaments erect, membranous, long, very much ciliated, convining so closely as to appear coherent. Nectary cylindrical, girding the base of the style. Style usually exerted, pilose while in the bud, the hairs disposed in 10 rows, but afterwards it becomes glabrous; stigmas 3. Capsule 3-celled, dehiscing laterally at the base by 3 valves. Seeds ovate, more or less flat. —Perennial, rarely biennial herbs, with usually edible roots (ex Fisch.). Stems erect. Leaves alternate, very rarely subverticillate; radical ones roundish, petioled; cauline ones usually sessile, becoming narrower and shorter to the top of the stem. Flowers racemose or panicled, terminal and axillary, pedicellate, drooping; clavate while in bud.—Natives of Siberia, China, and Japan, and one of the east of Europe.

* Leaves broader, ovate-lanceolate, more or less coarsely serrated.

1 A. Sinsénis (Alph. D. C. mon. p. 354.) leaves alternate, ovate-lanceolate, glabrous, acutely serrated; flowers disposed in spicate racemes; calyce lobes linear-lanceolate, entire, glabrous; corolla funnel-shaped; style a little exerted. ² H. Native of China. Stem branched, glabrous or velvety. Leaves glabrous, deep green above. Flowers disposed in a loose few-flowered raceme, which is furnished with branchlets at the base. Corolla blue, glabrous.


Var. β, pilosa (Alph. D. C. l. c.) tube of calyx hairy.

China Adenophora. Pl. 1 foot.


† A species hardly known.

XIX. SYMPHYANDRA (from συμφύος, symphyo, to combine, and ἄροι, aner, a male; in reference to the anthers being combined into a tube). At D. C. mon. p. 365.—Campânula species, Bieb. fl. taur. 1. p. 153. ex Roth.

LIN. syst. Monadophylla, Pentanöria. Calyx 5-cleft. Corolla 5-lobed at the apex, usually velvety, and cream-coloured. Stamens 5; filaments free, membranous, ciliated; anthers combined into a long tube, which is 5-lobed at top. Style cylindrical, pilose; stigma 3, filiform. Capsule 3-celled, dehiscing by 3 valves at the base. Seeds ovate, more or less flattened, shining.—Herbaceous perennial or woody plants. Leaves alternate, petiole, coriace; lower ones larger and on longer petioles. Flowers terminal and axillary, pedicellate, usually racemose, rather large.—Three of the species inhabit the region of Caucasus, and one the Island of Candia.

SECT. I. Sinuses of calyx not covered by the appendages.

1 S. CRETA'CA (Alph. D. C. mon. p. 366. t. 8.) quite glabrous; stems erect, herbaceous; leaves ovate, acute, irregularly serrated; flowers drooping, racemose; calyces lobes long-acuminate; corolla campanulate-funnel-shaped. 2. H. Native of Candia, on the Spaceotic Mountains near Araden. Campânula martiana, Sieb. herb. cret. but not of Lam. Leaves disposed in a loose raceme at the top of the stem. Peduncles thick, 1-3-flowered. Corollas 15 lines long, white? Creten Sympyandra. Pl. 1 1/2 foot.

SECT. II. Sinuses of calyx covered by the appendages.

Camp. Vandessii, G. Don, in Loud. hort. brit. p. 77. Roots rather creeping, throwing out many stems. Flowers drooping, showy, cream-coloured, disposed in a loose panicle, intermixed with the leaves; peduncles 1-3-flowered.


4 S. ? OSSET'ICA (Alph. D. C. mon. p. 368.) stem humble, simple; leaves petiolar, cordate, doubly serrated; calyces glabrous, with the segments long and denticulate, much shorter than the sinuses, which are reflexed; corolla somewhat 5-cleft, having the segments pilose inside. 2 H. Native of Iberia, in Ossetia, on Mount Kaishaur. Campanula Ossetica, Beib. fl. taar. suppl. p. 145. Habit of S. pendula, but is destitute of branches, and is wholly glabrous. Flowers solitary, axillary, erect, disposed in a crowded raceme from the middle of the stem to its top. Corollas blue.

Ossetian Symphyandra. Pl. $ to 1 foot.

Cult. These plants have much the habit of the large bell-flowered species of Campanula, as C. punctata and C. medium. They are of easy culture, and are increased by dividing at the root, or by seed; and being showy, are worth cultivating as border-flowers.


Lin. syst. Pentandría, Monogy'nia. Calyx 5-cleft. Corolla deeply 5-cleft, of a golden yellow colour. Stamens 5, cuspidate at the apex, free; filaments broadest at the base, glabrous. Stigma 5. Capsule 5-celled, 10-nerved, dehiscing by numerous transverse lateral fissures between the nerves; cells alternating with the calypic lobes and stamens. Seeds numerous, small, ovoid, shining.—A small glabrous shrub, native of Madeira and Teneriffe, altogether different in habit to any other campanuleaceous plant. Stem thick. Leaves alternate, large, serrated. Flowers numerous, pyramidal racemose, yellow.


Verr. \( \beta \), angustifolia (Alph. D. C. mon. p. 369.) leaves very narrow. \( \frac{1}{3} \) G. Native along the coast of Madeira, on rocks. Campánula áurea, Jacq. hort. schoenbr. 4. t. 472. Golden-flowered Musschia. Fl. July, Sept. Ct. 1777. Shrub 1 to 2 feet.

Cult. This remarkable shrub thrives very well in a mixture of loam and peat; but is only to be increased by seed, of which abundance is produced in the gardens.

† A genus not sufficiently known, and it is not quite certain whether it belongs to Campanulacea.


Lin. syst. Pentandría, Monogy'nia. Calyx 5-cleft, with an ovoid tube. Corolla 5-lobed, caducous, with a very narrow tube. Stamens 5, free; filaments very slender at the base, much longer than the anthers. Style filiform, usually exserted, glabrous; stigmas 2, very short. Ovarium inferior, 1-celled, probably always. Ovula usually 4, placed in the bottom of the ovarium. Capsule indehiscent.—Small Cape shrubs, with the habit of Roëlla. Stems erect, branched; leaves very leafy, downy, rather woody, reddish. Leaves sessile, alternate, crowded, linear-subulate, more or less ciliate, stiff, and very similar to those of Roëlla. Flowers sessile, solitary, spicate, always axillary. Inflorescence centripetal. Calyx with a very hispid tube, and lanceolate acute smooth segments. Corolla like that of Trachelium, long, tubular, and narrow. The character of the capsule still remains unknown; this is, however, without doubt inferior, and probably 1-celled, and contains 4 ovula in the bottom. The capsule is without any indication of dehiscence in the specimen examined by Alph. D. C.

1 M. TENIFÍÓLIA (Alph. D. C. mon. p. 370. t. 5.) leaves much ciliatus; corolla blue, longer than the leaves, 5-lobed at the very apex; lobes lanceolate, spreading, pilose on the back; style a little exserted. \( \frac{1}{3} \) G. Native of the Cape of Good Hope. Trachelium tenifolium, Thunb. prod. fl. cap. p. 38. Lin. suppl. p. 143. Roëlla compacta, R. pinifolia, and Trachelium tenifolium, Thunb. in herb. Banks. Habit of Roëlla ciliata. Stem erect, branched. Flowers very numerous, always lateral, solitary and sessile in the axis of the leaves.

Fine-leaved Merciera. Shrub 1 foot.

2 M. BREVI-FÓLIA (Alph. D. C. p. 371.) leaves ciliatus; corolla white, length of leaves, 5-lobed at the apex; lobes lanceolate, spreading, glabrous; style doubly longer than the corolla. \( \frac{1}{3} \) G. Native of the Cape of Good Hope. Roëlla lateriflora, Banks, herb. Very like the preceding. Flowers numerous, lateral, solitary, in the axis of the leaves.

Short-leaved Merciera. Shrub 1 foot.

3 M. LEPTÔLÓBA (Alph. D. C. mon. p. 371.) leaves ciliatus; corolla rather shorter than the leaves, white, 5-cleft; lobes linear, erectish, glabrous; style length of corolla. \( \frac{1}{3} \) G. Native of the Cape of Good Hope. Habit of the preceding species. Flowers sessile, solitary, among the leaves.

Slender-lobed-flowered Merciera. Shrub 1 foot.

Cult. A mixture of peat and sand is a good soil for the species of Merciera; and they may be increased either by cuttings under a hand-glass, or by seed.

† Plants referred to the genus Campánula, but it is doubtful to what genera they belong.

1 CAMPÁ'NULA STELLÁTA (Thunb. phyto. bl. p. 20. mem. acad. petersb. 4. p. 373. with a figure) leaves 3 in a whorl, linear, entire; flowers axillary, pedunculate; stem frutescent, terete, glabrous, branched, erectish, a hand high; branches alternate, simple, a little curved; leaves sessile, acute, imbricated, unguicular; flowers solitary, at the tops of the branches; peduncles
capillary, flexuous, an inch long. H. G. Native of the Cape of Good Hope. This is certainly not a species of Campánula, but it may be a species of Lightfoiüa, Roëlla, or Prismatocarpus.

**Stellate Bell-flower.** Shrub ½ to 1 foot.

2 **Campanula lancinata** (Roxb. fl. ind. 2. p. 96.) branched, glabrous; leaves alternate or nearly opposite, on short petioles, lanceolate, serrated, acuminate; flowers terminal; calyce segments lanceolate and jagged; capsule obovate, 5-celled. O. H. Native of Chittagong, in humid valleys. Plant delicate, ½ to 1½ foot high, simple or branched at the top, sending out 2 or 3 1-flowered peduncles. Flowers inclined, size and form of C. rotundifolia. Radical leaves not seen. Perhaps this plant is allied to Platycodon.

**Lanceolate-leaved Bell-flower.** Pl. 1 to 1½ foot.

3 **Campanula phrymente** (Zuccagni, cent. 1. obs. bot. in Rem. et Schultes, syst. 1. p. 84.) plant small; radical leaves numerous, lanceolate, obtuse, running down the petioles, undulated; cauline leaves few, remote, sessile, stem-clasping, mucronate; flowers sessile, crowded into a short spike or in a head; calyx with a tetragonal base, and erect, lanceolate, smooth segments; corolla campanulate, violaceous, larger than the calyx; style elevated, exserted; capsule tetragonal.—Native of Mount Olympus, in Bithynia. Perhaps a species of *Phyteuma*.

**Phyteuma-like Bell-flower.** Pl. small.

4 **Campanula glauca** (Thunb. fl. jap. p. 88.) leaves sessile, ovate, serrated, glaucous beneath; stem angular, panicked; peduncle 1-flowered.—Native of Japan, near Nagasaki; also cultivated. Kekko Kämpf. amoen. v. p. 822. Stem suffruticosus, angular, glabrous, paniculately branched at top. Leaves green above, with rather reflexed edges. Flowers axillary, and on the tops of the branches solitary. Peduncles bracteate. Corollas large, blue. The roots are esculent, like those of *Rampion*. It is, perhaps, a species of *Campanula*, but more probably of *Platy- codon* or *Adénophora*.

**Glaucus Bell-flower.** Pl. 2 feet.

5 **Campanula montevideensis** (Spreng. syst. 1. p. 788.) stem erect, downy, branched; leaves opposite, entire; lower ones spatulate; superior ones cordate, stem-clasping; flowers solitary, sessile; calyce segments ovate, cuspitate.—Native of Monte Video, where it was collected by Sello.

**Monte-Video Bell-flower.** Pl. erect.

6 **Campanula cornosa** (Wall. in Roxb. fl. ind. 2. p. 102.) plant smooth, fleshy, procumbent; leaves ovate, cuspidately serrated, petiolate; flowers axillary, on capillary peduncles, which are about equal in length to the leaves; filaments linear, not dilated at the base. 4. H. Native of Nipaul on Mount Sheopore, towards the middle, on rocks near rivulets. Stems creeping, obscurely 3-cornered. Flowers very small, of a pale blue. Calyce segments entire, erect. Corolla funnel-shaped, more than twice the length of the calyx, with a quinquefid sub-bilabiate limb; segments oblong, acute, equal; the two uppermost ones more parallel and erect; the rest spreading. Stamens distinct, a little shorter than the corolla; filaments flat, not valvate at the base, inserted together with the corolla on the disc of the ovariwm; anthers erect, linear. Ovarium oblong, obscurely triangular, 3-celled, many-seeded; its vertex not elongated, as is usual in the genus, but covered by a fleshy yellowish disc. Style filiform; stigma 3, linear. Capsule club-shaped, prismatic, bursting towards the base by 3 round valves. This is certainly not a species of *Campanula*, but from the characters given, it appears to be a new genus, connecting *Campanulaceae* with *Lobeliaceae*.

**Fleshy Bell-flower.** Pl. creeping.

**Order CXXXVIII. Epacridae.** (This order contains plants agreeing with *Epacris* in important characters.) R. Br. prod. p. 535.

Calyx 5-parted, (rarely 4-parted), usually coloured, permanent. Corolla hypogynous, monopetalous, with the tube sometimes divisible into 5 parts; limb 5-cleft, rarely 4-cleft, equal, and sometimes bursting transversely from the segments, cohering, valvate or imbricate in astivation, deciduous or marcescent. Stamens equal in number to the segments of the corolla, and alternating with them, rarely fewer; filaments epipetalous or hypogynous; anthers simple, with a single polliniferous receptacle, constituting a complete, rarely a marginate dissepiment, undivided, dehiscing longitudinally. Pollen subglobose, rather angular, or composed of 3 combined globules. Ovarium sessile, usually girded by 5 distinct or combined scales, many-celled, rarely 1-celled. Seeds solitary or indefinite. Style 1; stigma 1, sometimes toothed. Fruit drupaceous, baccate, or capsular. Seeds albuminous. Embryo straight, slender, longer than the half of the albumen.—Shrubs or small trees. Leaves alternate, very rarely opposite, entire, rarely serrated, usually petiolate, or with a simple base; having the bases broader, imbricated, cucullate, and sheathing a little. Flower spicate or racemose, terminal: or solitary and axillary. Calyces or pedicels furnished with 2 or more bracteas, which are of the same texture as the calyx. Flowers white or purple, rarely blue. This order is chiefly distinguished from *Ericaceae* in the anthers being awnless and 1-celled. The shrubs are all elegant, of a dry prickly habit, with tubular or campanulate flowers.

**Synopsis of the genera.**

**Tribe I.**

**Styphyleae.** Cells of ovary 1-seeded. Pericarps closed, rarely capsular.

1 **Styphylea.** Calyx with 4 or more bracteas. Corolla long, tubular; tube furnished on the inside near the base with 5 fascicles of villi: segments of the limb revolute, bearded. Filaments exerted.

2 **Astroloma.** Calyx imbricated by 4 or more bracteas. Corolla with a ventricose tube (f. 132. b.), furnished with 5 fascicles of villi near the base, inside; limb short, spreading, bearded (f. 132. c.). Filaments inclosed.

3 **Stenanthëa.** Calyx many-bracteate. Corolla tubular, ventricose, without any fascicles of hairs inside; limb short, spreading, bearded a little. Filaments inclosed.

4 **Melichirus.** Calyx many-bracteate. Corolla rotate or urnecolate, furnished with 5 fascicles of glands near the base inside; segments half bearded.

5 **Cathodes.** Calyx many-bracteate. Corolla funnel-shaped, without any fascicles of villi or glands inside; limb spreading, a little bearded. Filaments inclosed. Drupe bacate.

6 **Lissaëthe.** Calyx bibracteate or bractless. Corolla funnel-shaped: limb beardless. Drupe bacate.
Placentas

Placentas g. Leucopogon. truncate Clt. branchlets tube stems segments.


15 Epacris. Calyx coloured, many-bibracteate (f. 133. a.); bracteae texture of calyx. Corolla tubular (f. 133. c.), with a beardless limb. Stamens epipetalous (f. 133. b.). Anthers peltate above the middle. Hypogynous scales 5. Placentas adnate to the central column.

16 Lysiméa. Calyx coloured, many-bibracteate; bracteae texture of the calyx. Corolla salver-shaped: with the tube sometimes divided into 5 parts to the base; segments of the limb beardless, bent to the right. Stamens hypogynous. Anthers peltate above the middle. Hypogynous scales 5. Placentas adnate to the central column.

17 Priaosotes. Calyx bibracteate. Corolla tubular, with an open throat, and a beardless limb. Stamens hypogynous; filaments half adhering to the tube. Anthers with a complete dissepiment. Hypogynous scales 5.


19 Andersónia. Calyx coloured, imbricated by 2 or more foliaceous bracteae. Corolla length of calyx; segments of the limb bearded at the base. Stamens hypogynous. Anthers fixed beneath their middle. Hypogynous scales 5. Placentas adnate to the central column.

20 Poncelet'ia. Calyx foliaceous. Corolla short, campanulate, 5-cleft, beardless. Stamens hypogynous; anthers peltate beneath the middle, with a marginate dissepiment. Hypogynous scales wanting. Placentas adnate to the central column.


24 Dracophyllum. Calyx bibracteate, with a rather ventricose tube, and a 5-parted spreading acutish beardless limb. Stamens hypogynous. Hypogynous scales 5. Placentas hanging from the top of the central column.

25 Spénótea. Calyx bibracteate. Corolla salver-shaped, with a slender tube, a coarctate throat, and a blunt beardless limb. Stamens epipetalous. Hypogynous scales 5. Placentas hanging from the top of the central column.

Tribe I.

STYPHELIEÆ. Cells of ovary 1-seeded. Pericarp closed, rarely capsular.

1 S. Longífolia. Calyx bibracteate, with the tube sometimes divided into 5 parts to the base; segments of the limb beardless, bent to the right. Stamens hypogynous. Anthers peltate above the middle. Hypogynous scales 5. Placentas adnate to the central column.

2 S. Latifolía. Calyx bibracteate, with the tube sometimes divided into 5 parts to the base; segments of the limb beardless, bent to the right. Stamens hypogynous. Anthers peltate above the middle. Hypogynous scales 5. Placentas adnate to the central column.

3 S. Ascédens. Calyx bibracteate, with the tube sometimes divided into 5 parts to the base; segments of the limb beardless, bent to the right. Stamens hypogynous. Anthers peltate above the middle. Hypogynous scales 5. Placentas adnate to the central column.

4 S. Viridisflóra. Calyx bibracteate, with the tube sometimes divided into 5 parts to the base; segments of the limb beardless, bent to the right. Stamens hypogynous. Anthers peltate above the middle. Hypogynous scales 5. Placentas adnate to the central column.

5 S. Viridisflóra. Calyx bibracteate, with the tube sometimes divided into 5 parts to the base; segments of the limb beardless, bent to the right. Stamens hypogynous. Anthers peltate above the middle. Hypogynous scales 5. Placentas adnate to the central column.
oblong, obtuse, mucronulate, flat, smooth above, with the margins rather scabrous, and are, as well as the flowers, divaricate. 

Fl. May, Aug. Ch. 1796. Shrub 3 to 4 feet.

5 S. triplóória (Andr. bot. rep. 72.) leaves elliptic or oblong-lanceolate, flat, mucronate, rather scabrous above, with revolute edges; flowers drooping. ꞏ G. Native of New South Wales, about Port Jackson. R. Br. prod. p. 537. Sims, bot. mag. 1297. Flowers pink, with a cream-coloured limb.


6 S. tubifóória (Smith, new hol. 45. t. 14.) leaves linear, obvate, mucronate, rather scabrous above, with revolute edges; flowers drooping. ꞏ G. Native of New South Wales, about Port Jackson. R. Br. prod. p. 537. Lodde, bot. cab. 1298. Flowers scarlet.


7 S. glaucéscens (Sieb. pl. nov. hol. ex Spreng. syst. add. p. 67.) leaves lanceolate, mucronate, quite entire, smooth, finely striated, glaucous; peduncles short, I-flowered. ꞏ G. Native of New South Wales.

Glaucous Stenanthera. Shrub.

Cult. This is a very handsome genus of shrubs. A mixture of one-third sandy loam, and two-thirds sandy peat, answers the species best; and young cuttings, planted in sand under a bell-glass, will strike root.

II. ASTROLOMA (ἀστρον, astron, a star, and λαμία, loma, a fringe; in reference to the beard of the corolla. R. Br. prod. 538.). Ventenátia species, Cav. Stéphylía, Spreng. syst. 1. pp. 657, 658.

Lin. syst. Pentándria, Monogy'nia. Calyx imbricated by 4 or more bracteas (f. 132. a). Corolla with a ventricose tube (f. 132. b.), which is doubly longer than the calyx, and furnished with 5 fascicles of hairs near the base inside; limb short, spreading, bearded (f. 132. c.). Filaments linear, inclosed. Ovarium 5-celled. Drupe nearly dry; containing a solid bony putamen.—Humle, usually diffuse shrubs. Leaves scattered, usually ciliated. Flowers axillary, erect. Hypogynous disk cup-shaped, almost entire.


4 A. pa'lídum (R. Br. l. c.) shrub diffuse; branches ascending; leaves lanceolate, sessile, ciliated, imbricated, rather concave above. ꞏ G. Native of New South Wales, about Port Jackson. R. Br. prod. p. 537. Sims, bot. mag. 1297. Flowers pink, with a cream-coloured limb.

Pale Astroloma. Shrub diffuse.

5 A. compa'ctum (R. Br. l. c.) shrub diffuse; branches ascending, very short; leaves obvate-lanceolate, ciliated, tapering into the petioles, rather concave above. ꞏ G. Native of New South Wales, on the north coast. Flowers pale red. ꞏ G. Native of New South Wales, on the north coast.

Compact Astroloma. Shrub diffuse.

6 A. te'te'mum (R. Br. l. c.) erect, a little branched; leaves obvate-lanceolate, flat, imbricated, with scabrous edges; denticulations very short, obtuse. ꞏ G. Native of New Holland, on the south coast.

Cult. This genus contains dwarf glaucous shrubs, bearing large scarlet or red flowers. They are, therefore, desirable plants for all collections. They thrive best in an equal mixture of sand, loam, and peat; and cuttings from young wood root readily, if planted in a pot of sand under a bell-glass.

III. STENANTHERA (στενός, stenos, narrow; and ἀνθέρα, anthera, an anther; the filaments are broader than the anthers, which makes them appear narrow). R. Br. prod. p. 538.


Cult. This is a beautiful shrub when in blossom. A soil composed of one-third very sandy loam, and two-thirds sandy peat, suits it best. The pot in which it is grown should be well drained with shers, or the mould is apt to get soddened from too much wet. It should not be too much exposed to the sun in summer. Cuttings from the young shoots root readily in sand, under a bell-glass.

IV. MELICHIRUS (from μέλις, melichros, honey-coloured; in reference to the colour of the glands of the flowers). R. Br. prod. p. 539.

Lin. syst. Pentándria, Monogy'nia. Calyx with many bracteas. Corolla rotate or urceolate, furnished near the base with 5 fascicles or glands; segments bearded. Ovarium 5-celled. Drupe nearly dry, containing a solid bony putamen.—Procumbent or erect shrubs. Leaves lanceolate. Flowers erect. Hypogynous disk cup-shaped, nearly entire.

1 M. rota'tus (R. Br. prod. p. 539.) corollas rotate; calyx villous; leaves lanceolate-linear, pilose on both sides and on the margins. ꞏ G. Native of New South Wales, and of tropical New Holland. Ventenátia procumbens. Cav. icon. 4. p. 28. t. 349. f. 1. Flowers scarlet.
2 M. ureolatus (R. Br. l. c.) corollas ureolatae: calyces glabrous; leaves lanceolate, attenuated at the apex, with shortly dentilicate edges. ½. G. Native of New South Wales. Flowers scarlet.
Ureolata-flowered Melichrus. Shrub erect.
3 M. meadii (Cunningh. in Fields, New South Wales, p. 314.) erect; corolla ureolata; calyces ploose; leaves lanceolate, attenuated, very acute, mucronate, concave, many-nerved, with membranous dentilicate edges. ½. G. Native of New South Wales, on the plains of Bathurst. Intermediate between the two preceding species.

V. CYATHODES (from κυάθoς, kyathos, a cup; and δόχος, odous, a tooth; in reference to the disk, which is cup-shaped and 5-toothed). R. Br. prod. p. 539.—Cyathodes species, Labill.—Styphelia species, Labill. Solander, and Spreng.
LIN. SYST. Pentándia Monogyña. Calyx with many bracts. Corolla funnel-shaped; tube hardly exceeding the calyx, without any fascicles of villi or glands; limb spreading, with or without any beard. Filaments inclosed. Ovarium 5-10-celled. Drupes baccate.—Erect branched shrubs, with the habit of small trees. Leaves striated on the under sides. Flowers axillary, erect, or drooping a little, small. Hypogynous disk cup-shaped, 5-toothed.

§ 1. Segments of the corolla bearded; axis usually inside.
1 C. glauca (Labill. nov. holl. 1. p. 57, t. 81.) drupe 8-10-celled; leaves crowded at intervals, somewhat verticillate, spreading or divaricate, linear-lanceolate. ½. G. Native of Van Diemen's Land. R. Br. prod. p. 539. Trochocarpá glauca, Spreng. syst. 1. p. 660.
2 C. stellánea (R. Br. prod. p. 539.) drupe 5-celled; leaves crowded at intervals, somewhat verticillate, oval, obtuse, awnless, spreading, many-nerved beneath; stem erect. ½. G. Native of Van Diemen's Land.
Starrv Cyathodes. Shrub.
3 C. dealbáta (R. Br. prod. p. 539.) drupe 2-5-celled; leaves linear, erectly spreading, margined with very short cilia, 5-nerved beneath: nerves all simple. ½. G. Native of Van Diemen's Land.
Whitened Cyathodes. Shrub procumbent.
4 C. Tanetálae (Cham. et Schlecht. in Linnaea, 1. p. 539.) drupe 5-8-celled; leaves narrow, cuneate-ovooblate, petiolate, mucronate, many-nerved beneath. ½. G. Native of the Sandwich Islands. Habit of Leucopogón obovátus, Labill. Cy. Banksii, Gaud. in Freyc. voy. pt. bot. p. 365. is perhaps the same as this. Dr. R. Brown speaks of 2 other species from the Sandwich Islands, having the segments of the corolla naked, while this is bearded.
Tane miałae Cyathodes. Shrub or small tree.

5 C. farívóllá (R. Br. prod. p. 540.) leaves linear-lanceolate, not half an inch long, spreading, margined with very short cilia, 5-nerved beneath: nerves all simple. ½. G. Native of Van Diemen's land.
Small-leaved Cyathodes. Shrub or small tree.

6 C. oxyče'drus (R. Br. l. c.) leaves linear, more than half an inch long, spreading, with naked margins, 3-5-nerved beneath: nerves all simple. ½. G. Native of Van Diemen's land. Styphélia Oxycedrus, Labill. nov. holl. 1. p. 49. t. 69. Flowers white?
7 C. abietína (R. Br. l. c.) leaves linear-lanceolate, flat, much crowded, imbricated. ½. G. Native of Van Diemen's land. Styphélía abietina, Labill. nov. holl. 1. p. 48. t. 68.
Fir-like Cyathodes. Shrub or small tree.

VI. LISSA'NTHE (from λισσός, lissos, smooth, and ἀνθός, anthos, a flower). R. Br. prod. p. 540.

§ 1. Calyx bracteless. Racemes axillary, few-flowered; pedicels bibracteate at the base. Tube of corolla villous inside.
1 L. să'pida (R. Br. prod. p. 540.) racemes 2-3-flowered, recurved; leaves oblong-linear, mucronate, with revolute margins, whitened and striated beneath. ½. G. Native of New South Wales. Lindl. bot. reg. 1275. Hook. bot. mag. t. 3147. Flowers white, tipped with green. The berries are red and acid, and are made into tarts in New South Wales, under the name of cranberries.
2 L. subula'ta (R. Br. l. c.) racemes 4-5-flowered, erect; leaves linear-subulate, half an inch long; branchlets glabrous; drupe 10-striped. ½. G. Native of New South Wales.

§ 2. Calyx bibracteate. Corolla urceolate, having the tube and throat naked. Spikes axillary, few-flowered.
4 L. montá'na (R. Br. l. c.) leaves oblong-linear, obtuse, mucic, glaucous beneath. ½. G. Native of Van Diemen's Land.
Mountian Lissanthe. Shrub.

§ 3. Calyx bibracteate. Corolla funnel-shaped, having the throat closed by deflexed villi. Flowers axillary, solitary.


1 L. lanceolatus (R. Br. prod. p. 541.) spikes nodding, aggregate; ovaries 2-celled; drupes oval; leaves lanceolate, flat, 3-nerved; branchlets glabrous. ș. G. Native of New South Wales, on mountains. Sweet, fl. austral. t. 47. Styphélia lanceolata, Smith, new holl. p. 49. exclusive of the synonyms. Styphélia parviflora, Andr. bot. rep. 287. Flowers white.


2 L. malayanus (Jack, mal. misc. vol. 1. Wall. in Roxb. fl. ind. 2. p. 301.) spikes axillary, many-flowered, erect, short; drupes globular, 5-celled; leaves lanceolate, mucronate, nearly veinless, glaucous beneath. ș. S. Native of the plains of Singapore, abundant; where it is called by the Malays Mentada. A small, branching, dry shrub, exhibiting the peculiar habit of the family. Corollas funnel-shaped, downy, having the segments bearded above beyond the base. The discovery of this species is remarkable as forming an exception to the general geographical distribution of the order Epacrideae, a family almost exclusively confined to Australia, or at least to the southern hemisphere. Singapore, situated at the extremity of the Malay peninsula, and forming as it were the connecting link between continental or Western India and the plains of the great Eastern Archipelago, partsake of this character in its Flora, which exhibits many remarkable points of coincidence with the Flora of both regions. A resemblance has been observed between its productions and those of the northern frontier of Bengal, on the one hand, and of the Moluccas on the other, while the present plant connects it with the still more distant range of New Holland.

Malayan Leucopegon. Shrubs 3 feet.

3 L. australis (R. Br. l. c.) spikes erect; drupes depressed, globose, 5-celled; leaves linear-lanceolate, more than an inch long, 3-5-nerved, with recurved smooth margins. ș. G. Native of the south coast of New Holland and Van Diemen's Land. Flowers white.

Southern Leucopegon. Shrubs.

4 L. richeri (R. Br. l. c.) spikes erect, many-flowered, a little shorter than the leaves; drupes ovate, 5-celled; leaves glabrous, oblong-lanceolate, hardly an inch long, broadest beyond the middle, 3-5-nerved, convex above, with subrecurved margins. ș. G. Native of New South Wales, the south coast of New Holland, and Van Diemen's Land. L. polystachys, Lodd. fl. cab. t. 1436. L. apiiculatus, Smith in Rees, cycly. L. parviflorus, Lindl. bot. reg. 1560. Styphélia Richeri, Labill. nov. holl. 1. p. 44. t. 60. Styphélia parviflora, Andr. bot. rep. 287. Styphélia Gnidium Vent. malm. t. 23. Flowers white.


5 L. affinis (R. Br. l. c.) spikes erect; drupes oval, 2-3-celled; leaves long-lanceolate, more than an inch long, flat. ș. G. Native of Van Diemen's Land. Flowers white.

Allied Leucopegon. Shrubs.


Boat-leaved Leucopegon. Shrubs 1 to 2 feet.

8 L. verticillatus (R. Br. l. c.) spikes nearly terminal, aggregate, nodding while bearing the fruit; drupes 5-celled; putamen pentagonal; leaves oblong-lanceolate, attenuated at the apex, disposed in interrupted whorles, 2 to 4 inches long. ș. G. Native of the south coast of New Holland. Flowers white.

Whorled-leaved Leucopegon. Shrubs.

§ 2. Spikes axillary, but sometimes terminal. Flowers three or more together. Calyx and bracteae coloured. Drupe nearly dry. Leaves never cordate.

9 L. apiiculatus (R. Br. prod. p. 542.) spikes terminal, rather aggregate, 5-7-flowered; bracteae lanceolate; leaves lanceolate-oblong, erect, rather concave, with smooth margins, ending each in a callous point; drupe ciliate, crowded, depressedly turbinate, shorter than the calyx. ș. G. Native of the south coast of New Holland. Flowers white.

Var. a, branchlets and leaves glabrous.

Var. b, branchlets and leaves pubescent. Perhaps a distinct species.

Apiculate-leaved Leucopegon. Shrubs.

10 L. polystachys (R. Br. l. c.) spikes axillary or terminal, aggregate, 7-10-flowered; leaves linear-lanceolate, mutic, convexly concave; branchlets glabrous, twiggy; drupes dry, oval, depressed at the apex. ș. G. Native of the south coast of New Holland. Flowers white.


11 L. multiflorus (R. Br. l. c.) spikes axillary, shorter than the leaves; leaves lanceolate, a little acuminate, mucronate, imbricated, rather convex beneath, with smooth edges; calyx and bracteae with woolly margins. ș. G. Native of the south coast of New Holland. Flowers white.

Many-flowered Leucopegon. Shrubs.

12 L. rubricaulis (R. Br. l. c.) spikes nearly terminal, aggregate, 4-5-flowered; calyxes and bracteae smoothish; leaves linear-oblong, obuse, mutic, smooth, rather convex above, with somewhat recurved denticulated edges; branchlets glabrous; drupes oblong. ș. G. Native of the south coast of New Holland. Flowers white.

Red-stemmed Leucopegon. Shrubs.
13. *L. villòsus* (R. Br. l. c.) spikes nearly terminal, aggregate; leaves linear-oblung, bluish, mucric, erectly spreading, villous on both surfaces as well as on the branches, with denticulated subrecurred margins. \( \gamma \). G. Native of the south coast of New Holland. Flowers white. Very nearly allied to *L. rubricalea*.

Villosus Leucopogon. Shrub.

14. *L. obovátus* (R. Br. l. c.) spikes terminal, nearly simple; leaves obovate-oblung, obtuse, mucronulate, with subrecurred margins; drupes nearly globose, 5-celled. \( \gamma \). G. Native of New Holland, on the south coast. Stylòphila obovata, Labill. nov. holl. 1. p. 48. t. 67. Flowers white.


15. *L. revolutus* (R. Br. l. c.) spikes nearly terminal, aggregate, 4-5-flowered; calyces and bracteas clothed with fine down; leaves moderately spreading, linear-oblung, obtuse, mucric, tips of a callous obtuse point, convex and scabrous above, lined and glabrous beneath, with recurved naked margins; branchlets clothed with minute down; drupes dry, 5-celled, obovate. \( \gamma \). G. Native of the south coast of New Holland. Flowers white. Reculved-leaved Leucopogon. Shrub.

16. *L. margaródes* (R. Br. l. c.) spikes axillary, usually 3-flowered; leaves moderately spreading, linear-oblung, obtuse, mucric, with recurved smooth margins; drupes 2-celled, dry and compressed above. \( \gamma \). G. Native of New Holland, within the tropic. Flowers white. Pearl-toothed Leucopogon. Shrub.

17. *L. muticus* (R. Br. prod. p. 543.) spikes axillary, erect, 3-6-flowered; leaves linear-oblung, obtuse, rather mucric, erectly spreading, with smooth rather recurved margins; drupes 5-celled, angular, glabrous. \( \gamma \). G. Native of New South Wales, in rocky situations. Flowers white. Very nearly allied to the following. AWNLESS-leaved Leucopogon. Shrub.

18. *L. trichocárpus* (R. Br. l. c.) spikes axillary, nodding a little, 3-flowered; leaves linear-oblung, obtuse, mucronulate; drupes 5-celled, angular, pilose. \( \gamma \). G. Native of Van Diemen's Land. Stylòphila trichocárpa, Labill. nov. holl. 1. p. 47. t. 66. Flowers white. Hair-fruited Leucopogon. Shrub 3 feet.


20. *L. froníquus* (R. Br. l. c.) spikes axillary, usually 3-flowered, pedunculate; leaves lanceolata-linear, setaceous mucronate, smooth above, with revolute margins, which are denticulated from without; bracteas cuspitate. \( \gamma \). G. Native of the south coast of New Holland Allied Leucopogon. Shrub.

21. *L. attenuátes* (Cunningh. in Field's New South Wales, p. 341.) peduncles very short, erect, usually 1-flowered; leaves ovate-lanceolate, moderately spreading, rather convex, striated, setaceous mucronate, when young imbricate and ciliately denticulated. \( \gamma \). G. Native of New South Wales, on hills at Cox's River. Attenuated-leaved Leucopogon. Shrub.

22. *L. vibóatás* (R. Br. l. c.) spikes terminal and axillary, almost aggregate, few-flowered; calyces and bracteas rather membranous; leaves linear-lanceolate, attenuated at the apex, very acute, convexly concave, imbricate and spreading, with ciliated margins; branchlets glabrous. \( \gamma \). G. Native of New South Wales, south coast of New Holland, and Van Diemen's Land. Stylòphila virgata, Labill. nov. holl. 1. p. 46. t. 64. Flowers white. Twiggy Leucopogon. Fl. May, July. Ct. 1824. Shrub 2 feet.

23. *L. collinus* (R. Br. l. c.) spikes terminating the short lateral branches; lower bracteas sheathed a little, foliaceous, equalling the calyx in length; leaves oblong-linear, acute, mucric, erect, smooth and rather convex above, with recurved denticulated edges. \( \gamma \). G. Native of Van Diemen's Land. Stylòphila collina, Labill. nov. holl. 1. p. 47. t. 65. Flowers white. Hill Leucopogon. Fl. May, June. Ct. 1824. Shrub 1 foot.


§ 3. SPIKES AXILLARY AND TERMINAL. Leaves cordate. Calyces and bracteas membranous and foliaceous.

25. *L. amplexícaulis* (R. Br. l. c.) spikes axillary and terminal, spreading, pedunculate, exceeding the leaves; leaves cordate, stem-clasping, mucric, clothed with minute down beneath; with recurved margins, which are as well as the branches villous; drupes lenticular, 2-celled. \( \gamma \). G. Native of New South Wales. Stylòphila amplexícaulis, Rudge, in Lin. trans. 8. p. 292. t. 8. good. Flowers white. Stem-clasping-leaved Leucopogon. Ct. 1815. Shrub.

26. *L. alternífolius* (R. Br. l. c.) spikes axillary and terminal, few-flowered; leaves alternate, reniform, stem-clasping, acute, mucric, a line and a half long, and are as well as the branchlets glabrous; drupes crustaceous, lenticular, 2-celled. \( \gamma \). G. Native of the south coast of New Holland. Flowers white. Alternate-leaved Leucopogon. Shrub.

27. *L. distans* (R. Br. prod. p. 544.) spikes terminal, aggregate, flexuous; flowers distant; leaves ovate, subcordate, divaricate, mucric, one line long, convex above and downy beneath; drupes crustaceous, 5-celled, obovate, depressed. \( \gamma \). G. Native of the south coast of New Holland. Flowers white. Distant-flowered Leucopogon. Shrub.

28. *L. reflexus* (R. Br. prod. p. 544.) spikes terminal, crowded, few-flowered; flowers imbricate; leaves ovate, almost cordate, divaricate, mucric, a line long, convex above, and concave beneath, pilose, lined; drupes crustaceous, 5-celled. \( \gamma \). G. Native of the south coast of New Holland. Flowers white. Reflexed-leaveded Leucopogon. Shrub.

29. *L. glabéllus* (R. Br. prod. p. 544.) spikes terminal, almost solitary; bracteas foliaceous, and are as well as the calyces glabrous; leaves alternate, broadly cordate, acute, mucric, divaricate, flatish, and are, as well as the branchlets, glabrous. \( \gamma \). G. Native of the south coast of New Holland. Flowers white. Smooth Leucopogon. Shrub.

§ 4. SPIKES TERMINAL. Calyx and bracteas somewhat foliaceous. Drupes dry. Leaves not cordate.—Orojóa, Cav.

30. *L. micróphyllus* (R. Br. l. c.) spikes crowded, few-flowered; leaflets of calyx acuminate, semi-foliaceous; bracteas foliaceous, nestled; leaves ovate, obtuse, mucric, flat, of the same colour on both surfaces; drupes crustaceous, 1-2-celled.
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EPACRIDEÆ. VII. LEUCOPOGON.

§ 1. Pedunciles axillary, 2-flowered, or 1-flowered wherever from abortion: when this is the case, the calyx is many-bracteate. Drupe dry.

39. L. pendulus (R. Br. prod. p. 545.) pedunciles usually 2-flowered, recurved; tube of corolla exceeding the calyx; leaves oblong-linear, erectly spreading, ending in an innocuous point, with recurved smooth margins; drupes elavate, ventricose, smooth, glabrous. § 5. G. Native of the south coast of New Holland. Flowers white.

Pendulous-flowered Leucopogon. Shrub.

40. L. biflorus (R. Br. l. c.) peduncles 2-flowered, recurved; tube of corolla equal in length to the calyx; leaves spreading, linear-lanceolate, flat, 3 lines long, each ending in a pungent point, with smooth margins. § 5. G. Native of New South Wales. Flowers white.


31. L. tamariscinus (R. Br. l. c.) spikes aggregate or solitary, many-flowered; calyxes and bracteas foliaceous, glabrous; leaves imbricated, adpressed, ovate, mutic, concave-convex, lined beneath, and are as well as the branchlets glabrous. § 5. G. Native of the south coast of New Holland. Flowers white.

Tamarisk-like Leucopogon. Shrub.

32. L. graciosus (R. Br. l. c.) spikes crowded, 4-6-flowered; calyxes and bracteas subfoliaceous, glabrous; leaves lanceolate-linear, erect, concave-convex, mutic, nerved and 3-lined beneath; branchlets glabrous, filiform. § 5. G. Native of the south coast of New Holland. Flowers white.

33. L. denudatus (Sieb. pl. nov. holl. ex Spreng. syst. add. p. 67.) leaves linear acute, erect, glabrous, quite entire; flowers terminal, aggregate. § 5. G. Native of New Holland. Styphelia denudata, Spreng. l. c.

Naked Leucopogon. Shrub.

34. L. striatus (R. Br. l. c.) spikes aggregate; bracteas and calyxes subfoliaceous, with naked margins; leaves elliptic, mutic, erect, rather convex beneath and nerved, and somewhat concave above; branchlets glabrous; drupes crustaceous, 2-celled. § 5. G. Native of the south coast of New Holland. Flowers white.

35. L. nervosus (R. Br. l. c.) spikes crowded, few-flowered; bracteas and calyxes foliaceous and quite glabrous; leaves elliptic, imbricated, on short petioles, mutic, flat above, and rather convex beneath, with elevated nerves; branchlets downy. § 5. G. Native of the south coast of New Holland. Flowers white. Nearly allied to the preceding.

Nerved-leaved Leucopogon. Shrub.

36. L. carinatus (R. Br. prod. p. 545.) spikes solitary or aggregate; bracteas and calyxes foliaceous, quite glabrous; leaves lanceolate, mutic, imbricated, flat above, and keeled beneath, with the lateral nerves obsolete, and the margins denticulated; branchlets downy. § 5. G. Native of the south coast of New Holland. Flowers white.

37. L. assimilis (R. Br. prod. p. 545.) spikes aggregate; leaves lanceolate-linear, imbricated, adpressed, mutic, convex and striated beneath, of the same colour on both surfaces, with denticulated margins; ovary 5-celled. § 5. G. Native of New Holland, on the south coast. Flowers white.

Similar Leucopogon. Shrub.

38. L. cucullatus (R. Br. l. c.) spikes aggregate, 4-6-flowered; bracteas foliaceous; leaves ovate, obtuse, mutic, cucullate, imbricated, sessile, lined, with naked margins; drupes 5-celled. § 5. G. Native of the south coast of New Holland. Flowers white.

Cucullate-leaved Leucopogon. Shrub.

41. L. setigerus (R. Br. l. c.) peduncles 2-flowered, recurved, longer than the calyx; leaves spreading, lanceolate-linear, acuminated, half an inch long, ending in a seateous pungent mucrone, with recurved obsolely denticulated margins. § 5. G. Native of New South Wales. Flowers white.


42. L. acuminateus (R. Br. l. c.) peduncles very short, erect, usually 2-flowered; leaves erectish, linear-lanceolate, very acute, flat, ending in a seateous mucrone, with scabrous denticulated margins. § 5. G. Native of New Holland, within the tropic. Flowers white.

Acuminated-leaved Leucopogon. Shrub.

43. L. cuspidatus (R. Br. l. c.) peduncles very short, erect, 1-2-flowered; leaves moderately spreading, ovobato-oblong, acute, cuspidate, flat, with scabrous denticulated edges. § 5. G. Native of New Holland, within the tropic.

Cuspidate-leaved Leucopogon. Shrub.

44. L. imbricatus (R. Br. l. c.) peduncles very short, erect, 1-2-flowered; leaves imbricate, oval, obtuse, cuspidate, rather concave, with smooth toothless edges. § 5. G. Native of New Holland, within the tropic. Flowers white.

Imbricated-leaved Leucopogon. Shrub.

45. L. ruscirolius (R. Br. l. c.) peduncles very short, erect, usually 2-flowered; leaves erectly spreading, ovobato-elliptic, acutish, rather concave, mucronate, with smooth obsolescent denticulated edges. § 5. G. Native of New Holland, within the tropic. Flowers white.


46. L. lepto sperma (R. Br. prod. p. 546.) peduncles very short, erect, usually 2-flowered; leaves narrow-lanceolate, moderately spreading, flat, ending each in a very short callous mucrone, with smooth margins; stem arborescent. § 5. G. Native of New Holland, within the tropic. Flowers white.

Few-flowered Leucopogon. Shrub.

47. L. leptospermoides (R. Br. prod. p. 546.) peduncles very short, erect, usually 2-flowered; leaves linear-lanceolate, moderately spreading, flat, very acute, with minutely denticulated scabrous edges, ending each in a stiff mucrone. § 5. G. Native of New Holland, within the tropic. Flowers white.

Leptospermum-like Leucopogon. Shrub.

48. L. rotundifolius (R. Br. l. c.) peduncles very short, erect, 1-2-flowered; leaves roundish or ovobavel, petiolate, spreading moderately, flat, mucronate, with pellucid finely ciliate stigmas. § 5. G. Native of the south coast of New Holland. Flowers white.

Round-leaved Leucopogon. Shrub.

49. L. adiposus (R. Br. l. c.) peduncles very short, erect, 1-3-flowered; leaves imbricated, adpressed, lanceolate, sub-acuminated, mucronate, concave, with denticulated margins. § 5. G. Native of New South Wales. Flowers white.


50. L. fastigiatus (Sieb. l. c.) leaves lanceolate, cuspidate, serrulatus at the apex, striated; calyx glabrous; flowers axillary, almost solitary. § 5. G. Native of New Holland. Styphelia fastigiata, Spreng. l. c.

Fastigiate Leucopogon. Shrub.

§ 5. 2
51 L. juniperinus (R. Br. l. c.) flowers almost sessile, solitary or twin; leaves divaricate, lanceolate-linear, ending in a setaceous mucrone, with recurved slightly denticulated margins; bracteas 3-5, and are as well as the calyxes mucronate. ʃ. G. Native of New South Wales. Lodd. bot. cab. 447. Flowers white.


52 L. deformis (R. Br. l. c.) flowers almost sessile, solitary, many-bracteate; leaves erectly spreading, lanceolate-linear, rather concave, mucronate, with oblately denticulated edges; ovarium 3-celled. ʃ. G. Native of New South Wales. Flowers white.

Deformed Leucopogon. Shrub.

53 L. esquamat us (R. Br. l. c.) peduncles very short, erect, 1-2-flowered; leaves scattered, erectly spreading, lanceolate, subacuminate, mucronate, flat, turned, with scabrous margins; ovarium 2-celled; hypogynous disk wanting. ʃ. G. Native of New South Wales. Flowers white.

Scaleless-flowered Leucopogon. Shrub.

54 L. flexifolius (R. Br. l. c.) flowers almost sessile, solitary; leaves much crowded, imbricated, linear, mucronate, twisted, with scabrous denticulated edges; ovarium 5-celled. ʃ. G. Native of New Holland, within the tropic.

Bent-leaved Leucopogon. Shrub.

55 L. forsteri; arboreous; leaves scattered, linear, cuspidate, serrululate; flowers sessile, solitary, terminal. ʃ. G. Native of New Zealand. Epacris juniperina, Forst. char. gen. 10. no. 2. ins. austral. p. 13.

Forster’s Leucopogon.

Cult. The species of this genus are very pretty when in blossom; they grow best in an equal mixture of sandy loam and peat; and the tops of the very young shoots taken off and planted in sand, with a bell-glass over them, strike root readily.

VIII. MONOTOC A (from μόνος, monos, alone, and τοκός, tokos, a birth; in reference to the fruit being one-seeded). R. Br. prod. p. 546.


1 M. elliptica (R. Br. prod. p. 546.) spikes erect, nearly terminal and aggregate, or axillary and solitary; leaves elliptic-oblong, 4 times longer than broad. ʃ. G. Native of New South Wales. Styphealia elliptica, Smith, new holl. 49.


2 M. aleens (R. Br. prod. p. 547.) spikes erect, solitary, terminal and axillary; leaves oblong-linear, acute, mucronate, white beneath, 5 times longer than broad. ʃ. G. Native of New South Wales.


3 M. lineata (R. Br. l. c.) spikes axillary, few-flowered, nodding, pedunculate; leaves oblong, and often obovate, acute, flat-tish, mucronate. ʃ. G. Native of Van Diemen’s Land. Styphealia glauca, Labill. nov. holl. 1. p. 45. t. 61, where the plant is represented as having erect spikes, and a 5-celled ovarium.

VIII. MONOTOC A. IX. ACROTIRICHE.


§ 2. Bracteas extending, permanent. Shrubs with hermaproditic flowers.

4 M. scoparia (R. Br. l. c.) spikes axillary, nearly sessile, nodding; leaves oblong-linear, with revolute edges; stem erect. ʃ. G. Native of New South Wales. Styphealia scoparia, Smith, new holl. p. 48.


5 M. empetrifolia (R. Br. l. c.) spikes axillary, nodding, 2-3-flowered; leaves oblong-oval, mucronate, divaricate, convex above, white and striated beneath; stem prostrate. ʃ. G. Native of Van Diemen’s Land.

Empetrum-leaved Monotoca. Shrub.

Cult. For culture and propagation see Leucopogon, above. The pots in which the species are grown require to be well drained with shers.

IX. ACROTIRICHE (from ἀκρός, akros, the uttermost, and τίχος, tychos, a hair; the tips of the corolla segments are bearded). R. Br. prod. p. 547. Styphealia species. Spreng.


1 A. divaricata (R. Br. prod. p. 547.) leaves lanceolate, mucronate, divaricate, flat, green on both surfaces; spikes axillary. ʃ. G. Native of New South Wales.

Divaricate-leaved Acrotiriche. Fl. May, Clt. 1824. Shrub ½ to 1 foot.

2 A. aggregata (R. Br. l. c.) leaves oblong-lanceolate, rather concave, glaucous beneath, with smooth margins. ʃ. G. Native of New Holland, within the tropic.

Aggregate Acrotiriche. Shrub 1 foot.

3 A. ramiflora (R. Br. l. c.) leaves linear-lanceolate, mucronate, divaricate, of a different colour beneath, nerved, with recurved margins; spikes on the branches. ʃ. G. Native of New Holland, on the south coast.

Branch-flowered Acrotiriche. Shrub 1 foot.

4 A. serrulata (R. Br. l. c.) leaves linear-lanceolate, cuspidate, spreading, pilose or smoothish, with serrulately ciliated edges; spikes axillary. ʃ. G. Native of the south coast of New Holland, and Van Diemen’s Land.

Serrulata-leaved Acrotiriche. Shrub 1 foot.

5 A. patula (R. Br. l. c.) leaves ovate-lanceolate, acuminate, mucronate, flatish, and are as well as the branches divaricate: spikes axillary. ʃ. G. Native of New Holland, on the south coast.

Spread Acrotiriche. Shrub.


7 A. cordata (R. Br. l. c.) leaves coriaceous, flat, striated below; flowers axillary, twin or solitary. ʃ. G. Native of New Holland, on the south coast. Styphealia cordata, Labill. nov. holl. 1. p. 46. t. 63. Perhaps belonging to a different genus.
8 A. defressa (R. Br. l. c.) leaves ovate, rather cordate, mucronate, divergate, convex above, and veiny beneath; stem depressed; spikes on the branches. ą G. Native of New Holland, on the south coast.
Depressed Acrotriche. Shrub depressed.
 Cult. For culture and propagation see Leucopogon, p. 780.

X. TROCHOCARPA (from τροχός, trochos, a wheel, and κάρπος, karpos, a fruit; in reference to the putamen of the fruit, which is wheel-shaped and 10-lobed). R. Br. prod. p. 548.
Lin. syst. Pentandria, Monogynia. Calyx bibracteate. Corolla funnel-shaped; limb spreading, bearded. Ovarium 10-celled. Drupe baccate, containing a wheel-shaped, 10-lobed putamen, which is at length divisible into as many parts.—A small glabrous tree, with very hard wood. Leaves scattered, petiolate, nerved, very like those of a species of Laurus. Spikes slender, terminal and axillary, solitary or aggregate. Flowers small, white. Hypogynous disk cup-shaped, 5-lobed. Drupe depressedly globose, smaller than a pea. The genus approaches Decaspora in character and habit.
 Cult. See Leucopogon, p. 780. For culture and propagation.

XI. DECASPORA (from εἶκα, deca, ten, and σπόρα, spora, a seed; the fruit contains 10 pyrenæ or seeds). R. Br. prod. p. 548.
1 D. distichæ (R. Br. prod. p. 548.) leaves lanceolate, very acute, flat, nervèd beneath, 8 times longer than the petals; branchlets glabrous. ą G. Native of Van Diemen's Land. Cyathodes distichæ, Labill. nov. hell. 1. p. 58. t. 82.
Distich-leaved Decaspora. Shrub 4 to 6 feet.
2 D. thyrsifolia (R. Br. prod. p. 548.) leaves ovate, acutish, matic, hardly 4 times longer than the petals, obliquely 5-nerved beneath; branchlets downy. ą G. Native of Van Diemen's Land.
Thyme-leaved Decaspora. Shrub.
 Cult. For culture and propagation see Leucopogon, p. 780.

XII. PENTACHONDRA (from πέντε, pente, five, and χιλιοπος, chondros, a grain; in reference to the berry containing 5 pyrenæ or seeds). R. Br. prod. p. 549.
1 P. involucrata (R. Br. prod. p. 549.) filaments exerted; calyxes ciliated, furnished with 8 bractæae; leaves elliptic-lanceolate, flattish, many-nerved; branchlets downy; stem erect.
Involucrated-flowered Pentachondra. Shrub.
2 P. fumila (R. Br. l. c.) stamens inclosed; calyx furnished with 4 bractæae; leaves nearly elliptic, 3-nerved, with naked margins; branchlets glabrous; stem prostrate, much branched. ą G. Native of Van Diemen's Land. Epacris fumila, Forst. prod. no. 70. Styrphëa fumila, Spreng. syst. 1. p. 656.
Dwarf Pentachondra. Shrub prostrate.
 Cult. For culture and propagation see Leucopogon, p. 780.

1 N. fumila (R. Br. l. c.) ą G. Native of New Holland, on the south coast. Monotoca fumila, Spreng. syst. 1. p. 654.
Dwarf Needhamia. Shrub.
 Cult. For culture and propagation see Astroloma, p. 775.

XIV. OLIGARRHENA (from ὀλιγος, oligos, few, and αὕρρην, arrhen, a male; in reference to the few stamens). R. Br. prod. p. 549.
Lin. syst. Diandria, Monogynia. Calyx 4-parted, bibracteate. Corolla 4-cleft, permanent, valvate in aestivation. Stamens 2, inclosed. Ovarium 2-celled. Capsule 2-celled.—An erect much-branched shrub. Leaves scattered, imbricate, small. Spikes terminal, erect. Flowers small, white. Hypogynous scales 4. This is a very paradoxical genus; it agrees in the artificial character with the order Olénæ, but the habit is wholly distinct.
1 O. micranthæ (R. Br. prod. p. 549.) ą G. Native of New Holland, on the south coast.
Small-flowered Oligarrhena. Shrub.
 Cult. See Astroloma, p. 775. for culture and propagation.

Tribe II.

EPACRIDEÆ (the genera contained in this tribe agree with Epacris in many particulars). Cells of ovary many-seeded. Fruit capsular.

Lin. syst. Pentandria, Monogynia. Calyx coloured, many-bracteate; bractæae of the same texture as the calyx. Corolla tubular; limb beardless. Stamens epipetalous. Anthers petalate above the middle. Hypogynous scales 5. Capsule having the placenta adnate to the central column.—Small branched, usually glabrous shrubs. Leaves scattered, petiolate or simple at the base. Flowers axillary, white or purplish, usually disposed in leafy spikes.
Leaves cordate.

1 E. purpurascens (R. Br. prod. p. 550.) segments of calyx acuminated, about equal in length to the tube of the corolla; leaves cuculate, nearly sessile, ending each in a recurved mucrone, which exceeds the base of the leaf; floral leaves equaling the corollas in length. ♂ G. Native of New South Wales. E. pungens, Sims, bot. mag. t. 844. E'pacris attenuatum, Link. Lodd. bot. cab. t. 38. Corollas purplish.

Var. β, rubra (Lodd. bot. cab. 876.) flowers red.


2 E. pulchella (Cav. icon. 4. p. 26. t. 345. Sims, bot. mag. t. 1170. R. Br. prod. p. 550.) segments of the calyx acuminated, equaling the tube of the corolla; leaves rather concave, ending each in a spreading point, which is not so long as the base of the leaf; floral leaves shorter than the corollas. ♂ G. Native of New South Wales. Lodd. bot. cab. 154. Flowers pale red or pink.

Neat E'pacris. Fl. April, June. Clt. 1804. Shrub 1 to 3 feet.

3 E. microphylla (R. Br. prod. p. 550.) segments of calyx bluntish, equaling the tube of the corolla; leaves cuculate, acute, spreading; spike terminal. ♂ G. Native of New South Wales. Flowers almost white.

Small-leaved E'pacris. Fl. April, June. Clt. 1822. Shrub 1 to 2 feet.

4 E. riparia (R. Br. l. c.) segments of calyx setaceous acuminated, about equal in length to the tube of the corolla; leaves flat, acuminated, spreading. ♂ G. Native of New South Wales.

River-side E'pacris. Shrub.


6 E. campanulata (Lodd. bot. cab. 1925.) leaves ovate, reflexed; flowers axillary, the whole forming a spike; corolla twice or thrice longer than the calyx, campanulate. ♂ G. Native of Van Diemen's Land. Corollas red.

Var. β, alba (Lodd. bot. cab. 1931). Flowers white.


7 E. apiculata (Cunningh. in Field's New South Wales, p. 340.) calycine segments lanceolate, acuminated, about equal in length to the tube of the corolla; leaves cuculate, hairy, sessile, auricled at the base; superior leaves imbricated, ending each in a callous obtuse point; branchlets downy. ♂ G. Native of New South Wales, on boggy moist declivities, in the ravines of King's Table Land.


* Leaves simple at the base, not cordate.

8 E. russifolia (R. Br. prod. p. 550.) flowers scattered, pendulous; leaves elliptic-lanceolate, petiolate, acuminated; corollas cylindrical, having the tube twice longer than the calyx. ♂ G. Native of Van Diemen's Land.


9 E. rivularis (Sieb. pl. nov. hol. ex Spreng. syst. add. p. 64.) leaves almost sessile, ovate, acuminated, reflexedly spreading; calyces acute, about equal in length to the corolla. ♂ G. Native of New Holland.

Rivellet E'pacris. Shrub.

10 E. impressa (Labill. nov. holl. 1. p. 43. t. 58.) flowers pendulous, spicate, leaning all one way; leaves lanceolate, nearly sessile, attenuated at the apex, mucronate, with sebaceous edges; peduncles 3 times shorter than the calyx; corollas cylindrical; tube of corolla prismatic, twice longer than the acute ciliate calyx. ♂ G. Native of the south coast of New Holland, and Van Diemen's Land. R. Br. prod. p. 551. Sweet, fl. austr. t. 4. Lodd. bot. cab. 1691. Flowers beautiful crimson.

Impressed E'pacris. Fl. April, July. Clt. 1824. Shrub 1 to 3 feet.

11 E. variabilis (Lodd. bot. cab. 1818.) leaves ovate, sessile, tapering to the apex; corolla tubular, 3 or 4 times longer than the calyx. ♂ G. Native of Van Diemen's Land. Flowers drooping, pale red or blush, spicate. Like E. impressa.


12 E. nivalis (Lodd. bot. cab. 1821. Lindl. bot. reg. 1531. Graham, in bot. mag. 3253.) leaves ovate-lanceolate, spreading much, nakedish, nerve beneath, attenuated at the apex, mucronate, with sebaceous margins; flowers axillary, solitary, secund, disposed in a leafy raceme or spike; tube of corolla campanulate, much longer than the segments of the calyx, which are ciliated, as well as the bracteas. ♂ G. Native of New Holland. Flowers white.

Snowy E'pacris. Fl. April, May. Clt. 1829. Shrub 2 to 3 feet.

13 E. cerefolia (Graham, in bot. mag. t. 3243.) leaves lanceolate, spreading much, nakedish, attenuately mucronate at the apex, with sebaceous edges; flowers spreading, axillary, solitary, secund; tube of corolla ovate, exceeding the acute ciliated segments of the calyx. ♂ G. Native of Van Diemen's Land. Flowers white, collected near the extremities of the branches, much shorter than those of E. nivalis.

Wax-leaved E'pacris. Fl. April, May. Clt. 1831. Shrub 1 to 3 feet.

14 E. sparsa (R. Br. prod. p. 551.) flowers unknown; peduncles scattered, about equal in length to the acute calyx; leaves oblong-lanceolate, petiolate, mucronate, veinless. ♂ G. Native of New South Wales. Flowers white.

Scattered-flowered E'pacris. Shrub.

15 E. nigida (Sieb. l. c.) leaves ovate-oblong, bluntish, nearly sessile, carilaginous, spreading, keeled; calyces obtuse, about equal in length to the tube of the corolla. ♂ G. Native of New Holland.

Stiff E'pacris. Shrub.

16 E. obtusifolia (Smith, exot. bot. p. 77. t. 40.) flowers nodding; leaves lanceolate, erect, a little imbricated, ending in a bluntish callous point; segments of the calyx obtuse, length of the tube of the corolla; stamens incolesced. ♂ G. Native of New South Wales, south coast of New Holland, and Van Diemen's Land. R. Br. prod. p. 551. Lodd. bot. cab. 295. Flowers white.

Blunt-leaved E'pacris. Fl. April, June. Clt. 1804. Shrub 2 to 3 feet.

17 E. heteroneura (Labill. nov. holl. 1. p. 42. t. 56.) leaves elliptic-lanceolate, acuminated, rather concave, striated beneath; segments of calyx very acute, naked, length of tube of the
corolla; stamens inclosed; style glabrous; branches hairy: 

18. E. petalota (R. Br.  prod. p. 551.) leaves narrow-lanceolate, acuminate, flat, striated beneath with sebaceous margins; calyccine segments very acute, naked, length of tube of the corolla; stamens inclosed; style glabrous. 

19. E. lanuginosa (Labill. nov. holl. 1. p. 42. t. 57.) leaves lanceolate, acuminate, with sebaceous margins; calyccine segments very acute, length of tube of the corolla, with the margins woolly; stamens inclosed; style hairy. 

20. E. sesquipediflora (Cunningh. in Field's New South Wales, p. 340.) leaves elliptic-lanceolate, acuminate, cuneately lanceolate, 6- or 7-nerved, mucronate, petiolate, with ciliated margins: branches hoary; calyccine segments cylindrical, ventricose, with the tube exceeding the calyx, which is very acute. 

21. E. myrtifolia (Labill. nov. holl. 1. p. 41. t. 55.) leaves ovate, acute, mucronate, flat, thick: floral ones about equal in length to the corolla; calyccine segments acutish, naked, length of tube of the corolla; bracteoles bluntish; stamens inclosed. 

22. E. exserta (R. Br. prod. p. 551.) leaves lanceolate, acute, erect, flat above, and rather convex beneath; calyccine segments bluntish, equalling the tube in length; anthers clearly exerted. 

23. E. mucronulata (R. Br. prod. p. 552.) leaves lanceolate, very acute, erectly spreading, ending each in a pungent pullicated mucron; calyccine segments acute, with naked margins. 

24. E. crassifolia (R. Br. l. c.) leaves oval or ovobovate, obtuse, munit, flat, cartilaginous, acute at the base; calyccine pendent, with woolly margins; stem procumbent, with ascending branches. 

25. E. mucronulata (R. Br. prod. p. 552.) leaves lanceolate, very acute, erectly spreading, ending each in a pungent pullicated mucron; calyccine segments acute, with naked margins. 

26. E. crassifolia (R. Br. l. c.) leaves oval or ovobovate, obtuse, munit, flat, cartilaginous, acute at the base; calyccine pendent, with woolly margins; stem procumbent, with ascending branches.
minutely bracteate at the base, and naked above. Flowers showy, pendulous. The placenta of the capsule are loose and pendulous, and the leaves sheathing, according to Labillardiere.


Cerithie-like Prionotes. Shrub 4 to 5 feet.

Cult. This is an elegant and delicate shrub, bearing showy pendulous flowers. For culture and propagation, see *E. pacis*, p. 783.

**XVIII. COSMELIA (from κοσμεω, kosmeo, to adorn; beauty of flowers.) R. Br. prod. p. 561.**

**Lin. syst. Pentandria, Monogynia.** Calyx foliaceous. Corolla tubular. Stamens epipetalous. Anthers adnate to the filaments, which are ciliated at top. Hypogynous scales 5. Placentae of capsule adnate to the central column.—An erect much branched shrub, but the branches when naked are not marked by cetrices. Bases of leaves ciliate, half sheathing. Flowers solitary, drooping, terminating the short lateral branches. Calyx imbricated by smaller leaves. Corollas deep red. Stamens inclosed. Anthers lessened at the base. Placentas free at both extremities.


Cult. See *E. pacis*, p. 783. for culture and propagation.

**XIX. ANDERSONIA (named in memory of William Anderson, a surgeon of the Royal Navy, who accompanied Captain Cook; he paid great attention to botany. Descriptions of the genera of Van Diemen’s Land plants, written by him, are still in the Banksian Library. The genus is also intended to commemorate the late Alexander Anderson, formerly Director of the Botanic Garden at St. Vincent; and William Anderson, the present Curator of the Apothecaries’ Botanic Garden at Chelsea.) R. Br. prod. p. 558.**

**Lin. syst. Pentandria, Monogynia.** Calyx coloured, imbricated by 2 or more foliaceous bracteae. Corolla length of calyx; segments of the limb bearded at the base. Stamens hypogynous; anthers fixed beneath the middle. Hypogynous scales 5, sometimes connate. Capsule with the placenta adnate to the central column.—Small squarrose shrubs, having the branches not annulated while naked. Bases of leaves ciliate, half sheathing. Flowers terminal, spicate, or solitary, erect. Placentas short, rising from the bottom of the capsule. Seeds few when mature, erect.

* Flowers bracteate, spicate.


2 A. farifolia (R. Br. l. c.) leaves adpressed, ending in a triquetrous joint each. ½ G. Native of the south coast of New Holland.

Small-leaved Andersonia. Shrub.

* * Flowers many-bracteate; terminating the short branchlets.

3 A. cerulea (R. Br. l. c.) leaves moderately spreading; young leaves and outside of calyces downy. ½ G. Native of New Holland, on the south coast. Flowers blue.

**Blue-flowered Andersonia. Shrub.

4 A. squarrosa (R. Br. prod. p. 554.) leaves squarrose, divaricate or recurved, glabrous, with naked margins; calyces and styles glabrous; stem erect. ½ G. Native of New Holland, on the south coast.

Squarrose-leaved Andersonia. Shrub.

5 A. depressa (R. Br. l. c.) leaves squarrose, divaricate or recurved, downy, with ciliated margins; calyces glabrous; style pilose in the middle; stem depressed. ½ G. Native of New Holland, on the south coast.

Depressed Andersonia. Shrub depressed.

6 A. microantha (R. Br. l. c.) leaves adpressed; style downy beneath the middle. ½ G. Native of New South Wales. Flowers perennating, see, p. 783.

**XX. PONECELEIA (to the memory of Mr. Ponecleat, author of treatise on Triticum or Wheat.) R. Br. prod. p. 554.**

**Lin. syst. Pentandria, Monogynia.** Calyx foliaceous. Corolla short, campanulate, 4-cleft, beardless. Stamens hypogynous. Anthers peltate beneath the middle, with a marginate dissepiment. Hypogynous scales wanting. Capsule having the placenta adnate to the central column.—A small, erect, twigg marsh shrub, having the branches not annulated while naked: floriferous branches brittle. Bases of leaves ciliate, half sheathing. Flowers solitary, erect, terminating the branchlets. Calyx imbricated by smaller leaves. Anthers free, beardless.

1 P. sprengeloides (R. Br. prod. p. 554.). ½ G. Native of New South Wales. A suffruticoso dense habited plant, adhering to rocks perpetually damp.


Cult. For culture and propagation, see *E. pacis*, p. 783.


**Lin. syst. Pentandria, Monogynia.** Calyx coloured a little. Corolla 3-parted, rotate, beardless. Stamens hypogynous. Anthers connate or free, with an inmarginate dissepiment. Hypogynous scales wanting. Capsule having the placenta adnate to the central column.—Small, erect, branched shrubs; branches hardly annulated while naked. Bases of leaves ciliate, half sheathing. Flowers terminating the short lateral branchlets. Corolla purplish, length of calyx: with the tube very short, and at length cleft into 5 to the base.


* Flesh-colour-flowered Sprengelia. Fl. April, June. Cht. 1793. Shrub 1 to 2 feet.

2 S. montana (R. Br. l. c.) anthers free, beardless; calyx half coloured; leaves short-acuminate. ½ G. Native of Van Diemen’s Land. Flowers purplish.
Mountain Sprengelia. Shrub 1 foot.

Cult. These are elegant and delicate shrubs, with much the habit of *Andersonia*, which see, p. 784, for culture and propagation.

XXII. CYSTANTHE (from κυστόν, kiste, a box or coffer, and αἰθός, anthos, a flower; in reference to the closed hood-formed flowers.) R. Br. prod. p. 555.

**Lin. syst.** Pentändria, Monogynia. Calyx foliaceous. Corolla closed, calyptraeform, dehiscing transversely; with a truncate permanent base. Stamens hypogynous, permanent. Hypogynous scales wanting. Capsule having the placenta loose, and hanging from the top of the central column.—A shrub with the habit of *Sprengelia*, *Cosmélia*, and *Poncèlia*; unless the branches are branched while naked.


Var. α, leaves elongated, spreadingly recurved. Growing on the shady sides of mountains.

*Sprengelia-like* Cystanthe. Shrub 1 to 2 feet.

**Cult.** For culture and propagation, see *Andersonia*, p. 784. It is an elegant and delicate shrub.

XXIII. RICHEA (named in memory of M. Riche, one of the naturalists who accompanied the expedition in search of La Perouse). R. Br. prod. p. 555, but not of Labill.

**Lin. syst.** Pentändria, Monogynia. Calyx membranous, bractless. Corolla closed, calyptraeform, dehiscing transversely; with a truncate permanent base. Stamens hypogynous, permanent. Hypogynous scales 5. Capsule having the placenta loose and hanging from the top of the central column.—A shrub with the habit almost of *Dracophyllum montanum*, Labill., but differing in the singular economy of the flower. It comes nearest to *Cystanthe*, in the corolla being calyptraeform; but that genus differs in the inflorescence, foliaceous calyx, and want of hypogynous scales. Richea of Labill. vol. 1. p. 187. t. 16. in Craspédia, Forst. prod. no. 306. and Wild. spec. 3. p. 2393.

1 R. DRACOFLYLLA (R. Br. prod. p. 555.). H. G. Native of Van Diemen’s Land. This shrub differs much in stature according to stations of its natural growth; for on the tops of mountains it is an humble shrub, 1½ foot high; but on the sides of the mountains it grows to 10 feet high.

**Cult.** For culture and propagation, see *Andersonia*, p. 784.

XXIV. DRACOFLYLLUM (from ὁδρακόν, drakon, a dragon; and φύλλον, phyllon, a leaf; so named because the leaves have some resemblance to those of *Dracaena Dráco*, or Dragon’s Blood Tree.) Labill. in itin. 2. t. 40. R. Br. prod. p. 555. Rechb. hort. 2. t. 108.

**Lin. syst.** Pentändria, Monogynia. Calyx bracteal. Corolla tubularly funnel-shaped; with a 5-parted acutish spreading beardless limb, a somewhat ventricose tube, and a hardly contracted throat. Stamens 5, hypogynous. Hypogynous scales 5. Capsule having the placenta loose, and hanging from the top of the central column.—Shrubs or small trees having the branches annulated while naked. Leaves imbricate, cuculate, at the base, and half sheathing. Spikes or racemes terminal, simple, or compound. Bracteas subtending the pedicels, caducous.


**Secund-flowered Dracophyllum.** Fl. April, Aug. Clt. 1823. Shrub 1 to 2 feet.


**Long-leaved Dracophyllum.** Shrub.


**Rosemary-leaved Dracophyllum.** Shrub.

**Cult.** See *Andersonia*, p. 784. for culture and propagation.}

**XXV. SPHENOTOMA** (from σφιννω, sphenoo, to cleave, and τος, tome, a section; in reference to the deep divided limb of the corolla). Sweet. fl. austr. t. 44. Dracophyllum, sect. Sphenotoma. R. Br. prod. p. 555.

**Lin. syst.** Pentändria, Monogynia. Corolla salver-shaped, with a slender tube, a coarctate throat, and an obtuse beardless limb (f. 134. c.) Stamens epipetalous. Hypogynous scales 5. Capsule having the placenta loose, and hanging from the top of the central column.—Shrubs having the branches annulated when naked. Leaves imbricate, cuculate and half sheathing at the base. spikes simple, terminal. Bracteas stretched out, permanent.

1 S. SQVÁRRÓSA; floriforous branches hardly the length of the spikes; leaves squarrose, ensiform, lanceolate. h. G. Native of New Holland, on the south coast. Dracophyllum squarrosum, R. Br. prod. p. 556.

**Squarrose Sphenotoma.** Shrub.

2 S. CAPITÁTA; floriforous branches much longer than the spikes, which are ovate; cauleine leaves lanceolate-ensiform, erectish, of the branches adpressed. h. G. Native of New Holland, on the south coast. Dracophyllum capitatum, R. Br. prod. p. 556.

**Capitate-flowered Sphenotoma.** Shrub.

3 S. GRÁCILIS (Sweet. fl. austr. t. 44.) floriforous branches much longer than the spikes, which are ovate; cauline leaves lanceolate-subsulate, spreading, or recurved; of the branches adpressed. h. G. Native of New Holland, on the south coast. Dracophyllum gracilis, R. Br. prod. p. 556. Flowers white. Leaves fringed with long hairs. (f. 134.).

**Slender Sphenotoma.** Fl. April, May. Clt. 1823. Shrub 1 to 2 feet.

**Cult.** For culture and propagation, see *E’pacris*, p. 783. or *Andersonia*, p. 784.

**FIG. 134.**


**Flowers hermaphrodite, subsymmetrical, regular. Calyx 4-5-cleft. Corolla 4-parted, rarely 5-parted. Stamens 4-5-8-10, 5 H**
alternating with the segments of the corolla; their insertion various. Style and stigma undivided. Capsule free, or adhering to the fleshy calyx, therefore baccate; cells for the most part many-seeded. Albumen fleshy. Embryo erect, slender. Shrubs variable in habit, scattered over the surface of the earth in every direction.

Among the numerous families which compose the vegetable kingdom, few surpass the Ericaceae in the diversity of their forms, beauty of their flowers, or in the extent of their geographical distribution, which verges upon the ultimate limits of vegetation in both hemispheres. The direction of mountain chains, more especially of particular strata, such, for example, as siliceous and micaceous deposits, appears to exercise an equally important influence on the distribution of this family, with the circumstances of latitude and elevation. Species of the groups of Andromedeae and Vaccinieae traverse the Andes from one extremity to the other; and in Asia they extend from the Frozen Ocean to within the tropics, colonies of them being found in almost every branch of the Indian Alps. The similarity of the vegetation of North America and Central Asia is strikingly exemplified in the groups of this family, which are peculiar to both regions, such as Rhododendron, Monotropa, Pyrola, Vaccinieae, and the aberrant Ericaceae. Some species are common to both continents, such as Pjro/a picta, Monotropa Morisoniana, Bryanthus Stellari, Cassiope tetragona, and Andromeda polifolia: the two last forming likewise part of the European Flora. Europe and Africa alone contain the normal Ericaceae, well characterized by their permanent corolla, the maximum of which is at the Cape of Good Hope, a spot where so many families of plants are found huddled together in strange confusion, as if nature had at length deprived herself of sufficient space for their equal distribution. The most easterly point to which this last group extends is the Mauritius, where the various species of Salalix are found. The maximum of Rhododendron, Vaccinieae, Pyrola, and Monotropa, and the aberrant Ericaceae, is found in North America; these tribes are also common to Asia. Van Diemen's Land may be regarded as comprehending the majority of the Epacridaceae. Of all the genera of Ericaceae, that of Gaultheria is, however, the most extensively diffused, being met with in almost every region of America, in New Zealand, Van Diemen's Land, and other places of the South Pacific, and in the East Indies. The greater development of the calyx in this genus, and its more or less adherence to the ovary, considerably lessens the importance of the discriminating character of the Vaccinieae, and most satisfactorily shows that they constitute but a group of Ericaceae, rather than a distinct order. As happens in other very natural families, the characters of the general groups of Ericaceae are not so strongly marked as in those that are less so; but we are not on that account to give up the idea of dividing them, and to retain four or five hundred species in one genus, as has been done in the case of Ericaceae, which we have here attempted to subdivide into a number of minor groups; and, whatever opinion may be formed of their title to rank as separate genera, the arrangement of the species will we trust be found more natural than any hitherto proposed.

Synopsis of the genera.

Tribe I.


1 Erice. Calyx 4-parted, naked at the base. Corolla globose or urceolate, with a 4-lobed limb. Stamens inclosed; with capillary filaments and bifid anthers; cells of anthers short, opening by an oblong hole, awned or crested at the base, rarely mutic. Stigma peltate. — Leaves acerose. Pedicels scaly.

2 Gypsacalis. Calyx 4-parted, glumaceous, naked at the base. Corolla campanulate, or short-tubular, with a dilated 4-lobed mouth. Stamens exerted, with flattened filaments and bipartite anthers; cells of anthers mutic at the base, distinct, subinclosed, opening by an oblique hole. Stigma simple. — Leaves acerose.

3 Bleeria. Calyx 4-parted. Corolla short, tubular, with a 4-cleft limb. Stamens 4-6, with linear flattened glabrous filaments, and bipartite anthers; cells of anthers attenuated at the base, mutic, dehiscing by an oblong foramen at the apex. Stigma obtuse. — Leaves whorled. Flowers terminal, glomerate.


5 Pachysa. Calyx deeply 4-parted, coriaceous. Corolla nearly globose, coriaceous, with a contracted 4-lobed mouth. Stamens inclosed, with dilated filaments, and bifid anthers; cells of anthers short, crested at the base, opening by an oblique foramen. Stigma obtuse. — Leaves loosely imbricated, compressed. Pedicels bracteolate.

6 Ceramia. Calyx 4-parted, glumaceous. Corolla urceolate, with a 4-lobed limb. Stamens inclosed, with dilated flat filaments and bifid anthers; cells of anthers short, horned at the base. Stigma capitate. — Leaves scattered, bluntish, flat.

7 Desmia. Calyx 4-lobed. Corolla globose, with a contracted 4-toothed mouth. Stamens exerted, with flat filaments; cells of anthers short, opening by an oblong hole, simple at the base, and confluent in the filament. Stigma capitate. — Leaves scattered, subulate.

8 Euryleighpis. Calyx 4-parted, coriaceous, bibracteolate at the base. Corolla tubular, coriaceous, ventricose at the base, with an erect 4-parted limb. Stamens inclosed, with dilated channelled filaments, and bipartite anthers; cells of anthers coriaceous, opening by an oblong hole, auricled at the base. Stigma clavate. — Leaves scattered. Flowers terminal, solitary.

9 Eurystepgia. Calyx 4-parted, large, glumaceous. Corolla
urceolate, with a contracted 4-toothed mouth. Stamens inclosed, with dilated flat filaments and bipartite anthers; cells of anthers opening by an oblong foramen, biappendiculate at the base; appendages flat, crested, cremated. Stigma capitata.—Leaves subulate. Flowers suberect, pendulous.

10 Lopha'ndra. Calyx 4-parted, furnished with 4 bracteas at the base: segments scarious, rounded, ventricose outside. Corolla campanulate, 4-lobed. Stamens inclosed, with dilated flat filaments and bifid anthers; cells of anthers beaked at the apex, winged, crested, and crenulated at the sides, dehiscing by an oblong hole in the middle. Stigma truncate.—Leaves short, obtuse, glaucous. Flowers terminal.

11 Lampró'tis. Calyx 4-parted, large, glumaceous, colourless, bibracteate at the base. Corolla urceolate, with a small 4-lobed limb. Stamens inclosed, with capillary filaments; cells of anthers short, dehiscing lengthwise, mutic, or crested at the base. Stigma capitata.—Leaves adpressed, opposite, or 3 in a whorl. Flowers terminal.

12 Callis'ta. Calyx 4-parted, foliaceous. Corolla salver-shaped, with a cylindrical or ventricose tube, and a dilated, spreading, 4-cleft limb. Stamens inclosed, with capillary filaments; cells of anthers short, dehiscing lengthwise, mutic at the base. Stigma capitata.—Leaves acerose. Flowers terminal.

13 Euynló'ma. Calyx 4-parted, foliaceous. Corolla salver-shaped, with an elongated, filiform or ventricose tube, and a 4-parted dilated limb. Stamens inclosed, with dilated, membranous, channelled filaments, and bipartite anthers; cells of anthers membranous, dehiscing lengthwise, drawn out at the base into a short tumid spur. Stigma with an elevated 4-lobed disk.—Leaves adpressed, denticulate. Flowers terminal.

14 Chö'na. Calyx 4-parted, foliaceous. Corolla funnel-shaped, with a revolute 4-lobed limb. Stamens exerted, with capillary filaments, and truncate anthers; cells of anthers elongated, parallel, awned at the base. Stigma simple, obtuse.—Leaves 3 in a whorl, linear, awned. Flowers terminal.

15 Syrín'góde'a. Calyx 4-leaved, glumaceous. Corolla long-tubular, with a short 4-lobed limb. Stamens usually inclosed, with capillary filaments, and bipartite anthers; cells of anthers short, obtuse, mutic or awned at the base, dehiscing by an oblong foramen. Stigma simple or capitata, in some annulated by an elevated disk.—Leaves loose, acerose. Flowers crowded at the tops of the branches.

16 Dayá'sthîes. Calyx 4-parted, bibracteate at the base. Corolla tubular, hispid, with a 4-lobed erect limb. Stamens inclosed, with capillary filaments, and bipartite anthers; cells of anthers mutic at the base, dehiscing lengthwise. Stigma large, peltate.—Leaves loosely imbricatid, hispid. Flowers in terminal fascicles.

17 Ec'tâ'mis. Calyx 4-leaved, glumaceous. Corolla tubular, a little ventricose at the base, with a 4-toothed limb. Stamens much exerted, with dilated filaments and bipartite anthers; cells of anthers elongated, tubular, dehiscing by a longitudinal fissure, having the base continuous in the filament, and mutic. Stigma clavate, truncate.—Leaves loosely imbricatid. Flowers terminal or lateral.

18 Eríôđe'mia. Calyx large, 4-parted, bibracteate at the base. Corolla campanulate, with a 4-lobed revolute limb. Stamens exerted, with dilated filaments, and bifid obtuse scabrous anthers; cells of anthers dehiscing by an oblong pore, continuous in the filament at the base.—Leaves 3 in a whorl, obtuse, hairy. Flowers terminal.

19 Octoe'ra. Calyx 4-parted, reflexed, naked at the base. Corolla globose, with a contracted bluntly 4-lobed mouth. Stamens inclosed, with flattened filaments; cells of anthers very short, dehiscing by an ample hole, and furnished at the base by a solitary lanceolate acuminate appendage.—A downy procumbent shrub. Leaves verticillate. Flowers terminal, subumbellate. Pedicels scaly.

20 Eë'mia. Calyx 4-parted, with imbricate bracteas at the base; segments orbicular, coriaceous, ciliolate. Corolla urceolate, with a small 4-lobed limb. Stamens inclosed, with capillary filaments, and bipartite anthers; cells short, mutic at the base, dehiscing by an oblong hole. Stigma capitata. Cells of capsule 1-seeded.—Leaves spreading, bristly. Flowers globose.

21 Salá'xis. Calyx 4-leaved, irregular. Corolla campanulate, 4-cleft. Stigma peltate. Capsule drupaceous, 3-celled, 3-seeded.—Leaves 3-6 in a whorl. Flowers subracemose at the tops of the branches.

22 Callû'nâ. Calyx 4-parted, membranous, colourless, furnished with 4 bracteas at the base. Corolla shorter than the calyx, campanulate, 4-lobed. Stamens inclosed, with dilated filaments, and bipartite anthers, which are biappendiculate at the base; cells mucronulate, dehiscing lengthwise. Stigma capitata.—Leaves short, imbricate, in 4 rows. Flowers terminal, spicately racemose.

Subtribe II. Androméd'eae. Corolla deciduous.

23 Andrómë'da. Calyx 5-cleft; segments acute, simple at the base. Corolla globose, with a contracted 5-toothed mouth. Stamens 10, inclosed, with bearded filaments; cells of anthers short, one-awned. Stigma truncate. Capsule with a loculicidal dehiscence; placenta 5-lobed.

24 Cassió'pe. Calyx 5-leaved; segments imbricate at the base. Corolla campanulate, 5-cleft. Stamens 10, inclosed, with glabrous filaments; cells of anthers short, tumid, one-awned. Style dilated at the base; stigma obtuse. Capsule with a loculicidal dehiscence; valves bifid at the apex; placenta 5-lobed.

25 Cassã'ndra. Calyx 5-leaved, bibracteate at the base; segments imbricate at the base. Corolla oblong, with a contracted 5-toothed mouth. Stamens 10, inclosed, with glabrous filaments; cells of anthers elongated at the apex, tubular, mutic. Stigma annulated. Capsule with a loculicidal dehiscence; placenta 5-lobed.
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26 Zenòbia. Calyx 5-toothed. Corolla campanulate, with a revolute 5-lobed limb. Stamens 10, with very short glabrous filaments; cells of anthers elongated, tubular, biairiate at the apex. Stigma truncate. Capsule with a loculicidal dehiscence; placenta 5-lobed.

27 Lyònia. Calyx 5-parted. Corolla ovate or tubular, with a contracted 5-toothed mouth. Stamens inclosed, with short, flattened, downy filaments; cells of anthers membranous, dehiscing lengthwise, mutic. Style pentagonal; stigma obtuse. Capsule pentagonal, with a loculicidal dehiscence.


29 Pê'ria. Calyx 5-parted. Corolla tubular or ovate, with a contracted, 5-toothed, revolute mouth. Stamens 10, inclosed, with dilated filaments, which are bisetose at the apex; cells of anthers short, incumbent, dehiscing lengthwise. Style pentagonal; stigma truncate. Capsule with a loculicidal dehiscence.


31 Bria'nthus. Calyx 5-leaved, imbricated. Corolla deeply 5-parted, spreading. Stamens 10, shorter than the corolla, with flattened glabrous filaments; cells of anthers short, mutic, or awned behind, dehiscing by a terminal faramen. Stigma obtuse. Capsule with a septicidal dehiscence.

32 Dâ'cia. Calyx 4-parted. Corolla oval, ventricose, with a 4-toothed mouth. Stamens 8, inclosed, with dilated glabrous filaments, and linear anthers, which are sagittate at the base; cells of anthers parallel, loosened at the apex, dehiscing lengthwise. Stigma truncate. Capsule 4-celled, with a septical dehiscence.

33 Enki'nthus. Calyx small, 5-parted. Corolla campanulate, with a 5-parted limb, and 5 nectarial pits at the base. Stamens inclosed; anthers 2-horned. Berry 5-celled, many-seeded.

34 A'rbutus. Calyx small, 5-parted. Corolla globose or ovate, with a small, contracted, 5-cleft, reflexed border. Stamens 10, inclosed, with flattened filaments; anthers compressed at the sides, dehiscing at the apex by 2 pores, fixed by the back beneath the apex, and there furnished with 2 reflexed awns. Stigma obtuse. Berry globose, granular.

35 Arcosta'phiyllos. All as in Arbutus, except that the fruit is 5-celled, and the cells 1-seeded, and not granular on the outside.

36 Perne'ttya. Calyx 5-parted. Corolla globose, with a contracted 5-parted revolute limb. Stamens 10, inclosed, having the filaments thickened at the base; anthers 2-celled, 2-lobed at the apex; lobes bifid. Hypogynous scales 10, 3-lobed, surrounding the ovary. Stigma convex. Berries globose, 5-celled, many-seeded.

37 Aga'kista. Calyx 5-lobed. Corolla ovate, with a contracted 5-toothed mouth. Stamens 10, inclosed, with flattened villous filaments, and biairiate anthers; cells of anthers short, mutic at the base, diverging at the apex, and dehiscing by a terminal pore. Capsule globose, 5-celled, with a loculicidal dehiscence; placenta thick, oblong.

38 Dyplecosia. Calyx girded by a calyculus, which is composed of 2 combined bracteas, 5-cleft. Corolla campanulate, with a 5-cleft reflexed limb. Stamens 10, inclosed, inserted in the disk of the calyx. Anthers bifid at the apex. Stigma truncate. Capsule nearly globose, depressed, inclosed in the baccate calyx, 5-celled, many-seeded.

39 Gaulthe'ria. Calyx 5-cleft or 5-toothed, bibracteate at the base. Corolla ovate, ventricose, with a 5-cleft revolute border, diaphanous at the base. Stamens 10, inclosed, with flat filaments; anthers bifid at the apex; lobes biairiate. Hypogynous scales 10, usually united at the base. Ovarium half inferior. Capsule 5-celled, with a loculicidal dehiscence.

40 Epig'e'a. Calyx large, 5-parted, furnished with 3 bracteas at the base. Corolla salver-shaped, with a 5-parted spreading border, and with the tube villous inside. Stamens 10. Capsule 5-celled; placenta 5-parted.


42 Cle'thra. Calyx 5-parted. Corolla so deeply 5-parted as to appear 5-petalled. Stamens 10, with membranous filaments; anthers at length inflexedly pendulous, obverse, and cordinate at the base, and mucronate at the apex, but mutic. Stigma trifid. Capsule 3-celled, many-seeded, with a loculicidal dehiscence.

Tribe II.


44 Vire'ya. Calyx obsoletly 5-toothed. Corolla subcampanulate, or funnel-shaped, regularly 5-lobed, adnate to the disk of the calyx. Stamens 10, inserted in the calyctic disk; anthers dehiscing by terminal pores, mutic. Stigma capitade, 5-furrowed. Capsule sillage-formed, 5-angled, 5-celled, 5-valved. Placenta 5-lobed. Seeds numerous, expanded at both ends into a bristle-formed awn.


46 Hymena'nthes. Calyx small, obscurely denticulated.
Corolla subcampanulate, with a short compressed tube, and a 7-parted limb. Stamens 14, hypogynous; anthers mutic, opening by two terminal pores. Stigma obtuse, with 7 crenatures. Capsule oblong, 7-valved, 7-celled, many-seeded.

47 Kāl'mia. Calyx 5-parted. Corolla salver-shaped; border producing 10 protuberances on the under side, and a corresponding number of cavities on the upper side, in which the anthers are concealed. Capsule 5-celled; disseminations marginal.


50 Leiophyllum. Calyx deeply 5-parted, permanent. Corolla 5-petalled. Stamens 10, exserted; anthers lateral, dehiscing lengthwise inside. Capsule roundish, 5-celled, 5-valved, dehiscing at the apex.

51 Lē'dum. Calyx minute, 4-toothed. Corolla 5-petalled, spreading. Stamens 5-10, exserted; anthers opening by 2 pores at the apex. Capsule subovate, 5-celled, 5-valved, pedicellate, dehiscing at the base. Seeds ending in a wing at both ends.

TRIBE III.


52 Vaccinium. Limb of calyx 4-5-toothed. Corolla urceolate or campanulate, 4-5-cleft. Stamens 8-10, hypogynous. Berry globose, 4-5-celled, many-seeded.

53 Oxye'cucus. Calyx 4-cleft. Corolla 4-petalled, with the segments somewhat linear and revolute. Stamens 8; filaments connivent; anthers tubular, bipartite. Berry 4-celled, many-seeded.

54 Gyaluss'cia. Limb of calyx 5-cleft. Corolla tubular, with a ventricose base and a 5-cleft limb. Stamens 10, inserted in the limb of the calyx; anthers mutic, drawn out into 2 little tubes from the top. Stigma capitate. Berry nearly globose, 10-celled; cells 1-seeded.

55 Thiba'udia. Calyx urceolar, 5-lobed. Corolla tubular, with a contracted 5-toothed mouth. Stamens 10, inserted in the calyx, inclosed; anthers elongated, mutic, drawn out into 2 little tubes at the apex. Berry 5-celled, many-seeded.

56 Agapet'es. Limb of calyx 5-cleft. Corolla tubular, with a 5-cleft limb. Stamens 10, with very short flattened filaments; anthers mutic, very long, auricled at the base, exserted, narrow, emarginate at the apex, with the cells confluent. Stigma clavate. Berry 5-celled, many-seeded.

57 Ceratost'emma. Limb of calyx large, 5-parted, foliaceous. Corolla tubular, contracted and 5-lobed at the apex. Stamens 12, with very short, flattened, hairy filaments; anthers bluntly spurred at the base, having the cells elongated at the apex and filiform, dehiscing by a terminal pore. Stigma simple. Berry 5-celled, many-seeded.

TRIBE IV.


58 Py'ro'la. Calyx 5-cleft or 5-parted. Petals 5. Stamens 10, slightly united at the base. Style exserted. Stigma 5-lobed. Capsule 5-celled, dehiscing at the angles near the base, having the margins of the valves connected by intricateomentum.


TRIBE V.


62 Hyp'ó'tys. Calyx 3-5-parted. Corolla 4-5-petalled; petals or segments each with a cucullate nectariferous base. Anthers small, horizontal, at length opening flat. Stigma orbicular, with a bearded margin. Capsule 5-celled, 5-valved, many-seeded.

63 Monōtros'pa. Calyx none. Corolla 5-petalled; petals or segments each with a cucullate nectariferous base; anthers reniform, horizontal. Stigma orbicular, naked. Capsule 5-celled, 5-valved, many-seeded.

64 Pterog'spora. Calyx 5-parted. Corolla ovate, with a reflexed 5-toothed border. Anthers peltate, adnate to the filaments by the margin, bisetose. Capsule 5-celled; placenta 5-lobed. Seeds terminated each by a wing.

I. ERICA (Erica of Pliny is altered from ἐρικα of Theophrastus, which is derived from ἐρικός, erikos, erike, eriko, to break; from the supposed quality of some species in breaking the stone in the bladder). D. Don. in edinb. phil. journ. 17. p. 152.—Erica species of Lin. and other authors.

Lin. syst. Oećandria, Monogynia. Calyx 4-parted, with a naked base. Corolla globose or urceolate, with a 4-lobed limb. Stamens inclosed; filaments capillary; anthers bident; cells of anthers opening by an oblong hole, awned or crested at the base, or mutic. Stigma peltate. Capsule 4-celled, many-seeded.—Shrubs, natives of Europe and Africa. Leaves scattered or verticillate, acerate. Flowers terminal, fascièd or racemose. Pedicels scaly.

§ 1. Anthers awned at the base. Normal species.

* Leaves 3 in a whorl. Corollas campanulate.

1 E. laevis (Andr. heath. 3. t. 6.) leaves glabrous, 3–4 in a whorl, spreading; branches slender; flowers terminal by threes, drooping; corollas small, bell-shaped; awns of anthers falcate. G. Native of the Cape of Good Hope. Lodd. bot. cab. 1893. E. electricus, Sal. in Lin. trans. 6. p. 376. Flowers white. Plant glabrous. Anthers black. Perhaps only a variety of E. persicata.


2 E. callitosa (Wendl. eric. ex Spreng. syst. 2. p. 194.) leaves 3 in a whorl, linear-oblong, with revolute edges, spreading, white beneath; flowers terminal, usually by threes, erectish; calyx colored, viscid; corollas campanulate; awns of anthers short. G. Native of the Cape of Good Hope. E. canaliculata minor, Andr. heath. 3. t. 39. Corollas red.


3 E. depressa (Thumb. diss. no. 50. with a figure); leaves glabrous, 3 in a whorl, linear, revolute; flowers terminal; corolla bell-shaped; spurs of anthers long, subulate and hairy; anthers remote from the calyx. G. Native of the Cape of Good Hope. E. rupestris, Andr. heath. 2. t. 9. E. hübmillis, Salisb. in Lin. trans. 6. p. 329. Branches decumbent. Flowers small, white.


4 E. nobile (Bedl. eric. wob. p. 16. but not of Sal.) leaves 3 in a whorl, slightly hispid; flowers subaxillary; anthers remote from the calyx; corollas campanulate, with deep segments; anthers awned. G. Native of the Cape of Good Hope. Erica glomerata, Hort. Flowers white.


5 E. sicetiosa (Sal. in Lin. trans. 6. p. 329.) leaves 3 in a whorl, mucronate; corolla 1½ lines long, hairy outside, with a cup-shaped tube; flowers terminal; spurs of anthers linear; fruit glabrous. G. Native of the Cape of Good Hope.


6 E. montana (Bedl. eric. wob. p. 15.) leaves 3 in a whorl, flowers axillary, by threes; flowers terminal, subaxillary, approximating the calyx, loose, angular; corolla bell-shaped; anthers awned; style inclosed. G. Native of the Cape of Good Hope. E. confertifolia, Wendl. Flowers purplish-red.


7 E. villosuscula (Lodd. bot. cab. 1844.) hairy; leaves acicular, ciliated with long hairs; flowers disposed in racemose terminal fascièd; corollas campanulate. G. Native of the Cape of Good Hope. Flowers small, pale red. Anthers unknown.

Rather-villous Heath. Fl.? Clt.? Shrub.

8 E. amena (Sal. in Lin. trans. 6. p. 329.) leaves lanceo- late, 3 in a whorl; flowers terminal; corolla bell-shaped; anthers remote from the calyx; anthers awned, glabrous. G. Native of the Cape of Good Hope. E. incarnata, Thunb. diss. 84. Flowers small, reddish-purple. Corolla 4-5 lines long.


10 Deflansa (Bedl. hort. eric. wob. p. 8.) leaves 3 in a whorl, rough; flowers terminal, umbellate; corolla deflexed, open bell-shaped; anthers minute, remote from the calyx; anthers awned. G. Native of the Cape of Good Hope. Flowers white. Style exserted.


11 E. obtusa (Lodd. bot. cab. 1027.) glabrous; leaves 3 in a whorl; flowers terminal, by threes; corollas campanulate; anthers remote. G. Native of the Cape of Good Hope. Flowers white. Style exserted.


12 E. glomerata (Lodd. ex Bedl. eric. wob. p. 11.) leaves 3 in a whorl; flowers terminal, capitulate; corolla small, bell-shaped; anthers approximating the calyx; anthers awned. G. Native of the Cape of Good Hope. Flowers small, purplish-red. Style exserted.


13 E. vera (Lodd. bot. cab. 1608.) glabrous; leaves 3 in a whorl; flowers terminal; corollas campanulate; style exserted. G. Native of the Cape of Good Hope. Flowers purplish-red. Anthers unknown.


14 E. parviflora (Bedl. hort. eric. wob. p. 17.) leaves 3 in a whorl; flowers terminal, almost sessile; corolla campanulate; anthers remote from the calyx; anthers awned. G. Native of the Cape of Good Hope. Flowers small, reddish-purple. Style inclosed.


16 E. scholliana (Lodd. bot. cab. 538.) leaves alternate, scattered; flowers subterminal and axillary; corolla campanulate; anthers remote from the calyx; corolla bell-shaped; anthers awned; style inclosed. G. Native of the Cape of Good Hope. Flowers purple, drooping, and are as well as the calyxes coloured. Style inclosed.


17 E. actea (Bedl. hort. eric. wob. p. 1.) leaves 3 in a whorl, glabrous; flowers terminal; anthers remote from the calyx; corolla oblong-bell-shaped; anthers awned. G. Native of the Cape of Good Hope. Erica Léchmèa, Hort. but not of Andr. Corollas white. Style exserted.

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ERICACEÆ.  I. ERICA.

* * Leaves 3 in a whorl.  Corollas urceolate.


28 E. adesophora (Spreng. syst. 2. p. 188.) leaves 3 in a whorl, glandularly hispid, spreading, remotes; flowers terminal, aggregate, glabrous; calyx viscid, coloured, adpressed.  ἑ.  G. Native of the Cape of Good Hope.  Anthers awned.  Corollas urceolate.  Gland-bearing Heath.  Fl.


34 E. Purilia (Bedr. l.c.) leaves 3 in a whorl; flowers terminal; corolla globose; anthers awned, a little exserted.  ἑ.  H.
Native of the Cape of Good Hope. Flowers reddish-purple, small. Style exerted.


33 E. regemíminans (Linn. syst. 364. Thum. 35. no. 54.) leaves linear, recurved, 3 in a whorl; flowers pedicellate, drooping, semi-lateral; bracteas remote; corollas ovate-globular; anthers awned. G. Native of the Cape of Good Hope. Lodd. bot. cab. 1729. Erica uncifólia, Sal. in Lin. trans. 6. p. 369. Flowers small, pale red. Spurs of anthers very long.


30 E. rubeílla (Lodd. bot. cab. 658. Sims. bot. mag. 2165.) leaves 5 in a whorl; flowers terminal, capitulate; corolla ovate, ventricose, length of calyx; bracteas approximating the calyx. G. Native of the Cape of Good Hope. Flowers small, purplish-red. Style inclosed.


37 E. scabíscéllula (Link. enum. 1. p. 372. Lodd. bot. cab. t. 517.) leaves 3-4 in a whorl, oblong, beset with glandular hairs; flowers terminal; corolla ovate; bracteas approximate to the calyx; anthers awned. G. Native of the Cape of Good Hope. Flowers small, silky white or red, sessile. Style inclosed.


** * * * Leaves 4 in a whorl. Corollas campanulate.**


Var. γ, spicáta (Hort.) flowers spicate, white.

**Accomplished Heath.** Fl. April, May. Clt. 1774. Shrub 1 foot.

39 E. strígosa (Sol. in Ait. hort. kew. 2. p. 404.) leaves 4 in a whorl, linear, bluntish, downy, ciliated; branches villose; flowers axillary, aggregate; calycine segments villous, adpressed; corolla campanulate; spurs of anthers subulate, hairy. G. Native of the Cape of Good Hope. E. axílaria, Sal. in Lin. trans. 6. p. 325. E. arbórea, Thumb. diss. no. 65. Bracteas 2, minute. Corolla 1 1/2 lines long, smooth. There are white and purple flowered varieties of this species. Corolla campanulate. Style exserted.

**Strigose Heath.** Fl. March, April. Clt. 1775. Shrub 1 to 2 feet.


**Neglected Heath.** Fl. year. Clt. 1794. Shrub 1 foot.

41 E. lasophyílla (Spreng. syst. 2. p. 195.) leaves 4 in a whorl, linear, scabrous, glandularly ciliated, spreading, aristate at the apex; flowers racemose, drooping; corolla adpressed; corolla campanulate; anthers awned. G. Native of the Cape of Good Hope. Flowers reddish-purple. Style inclosed.


42 E. floribu'nda (Lodd. bot. cab. 176.) glabrous; leaves 4 in a whorl; flowers terminal; corolla bell-shaped, open; anthers awned. G. Native of the Cape of Good Hope. Flowers small, axillary and terminal, pale red. Style exerted.

**Bundle-flowered Heath.** Fl. April, May. Shrub.

43 E. pellitíforis (Sal. in Lin. trans. 6. p. 576.) leaves 4 in a whorl; flowers terminal; pedicels hardly pubescent; corolla 1 1/2 line long, with a bowl-formed tube, and with the interstices of the limb oval at the base; spurs of anthers saccate. G. Native of the Cape of Good Hope. Erica persolúta, Thumb. diss. no. 62. Corp. bot. mag. no. 342. E. viridipúpura, Lin. diss. no. 9, with a flower. E. Mauritíánica, Lin. syst. nat. ed. 10. p. 1002. There are varieties of this with either white or purple flowers.


44 E. quadríflóra (Sal. in Lin. trans. 6. p. 375.) stem glabrous; leaves 4 in a whorl; flowers terminal, by fours; corolla 1 1/2 line long, with a cup-shaped tube, and an erect limb; spurs of anthers lanceolate-cuneate. G. Native of the Cape of Good Hope. E. quadrangularis, Sal. prod. p. 297.


45 E. leuca'ntia (Leaf) leaves 4 in a whorl; flowers terminal, umbellate; bracteas remote from the calyx; corolla bell-shaped; anthers awned. G. Native of the Cape of Good Hope. E. regemíminans, Andr. heath. vol. 4, but not of Lin. Flowers small, white. Style a little exerted.


** * * * Leaves 4 in a whorl. Corollas urceolate.**


Var. β, álba (Bedf. hort. eric. wob. p. 25.) flowers white. Ait. hort. kew. 2. p. 393.

**Besom Heath.** Fl. July, Sept. Britain. Shrub 1 1/2 to 1 foot.

47 E. Blanfordia'na (Ait. hort. kew. 2. p. 392.) leaves linear, 4 in a whorl, spreading; flowers terminal, almost solitary; corolla ovate-globose, or urceolate; anthers awned. G. Native of the Cape of Good Hope. Curt. bot. mag. 1793. Lodd. bot. cab. 115. E. Blanfordio, Andr. heath. 3. t. 8. Corollas yellow, small. In the botanic eric. wob. the anthers are said to be mutic; this must be wrong.


48 E. hirtíflóra (Sims. bot. mag. 481. Lodd. bot. cab. 1812.) leaves linear, hairy, 4 in a whorl; flowers terminal, umbellate, downy; corolla ovate-globose, with an erect limb; anthers awned; fruit glabrous. G. Native of the Cape of Good Hope. E. mitrefórmis, Salisb. in Lin. trans. 6. p. 375. E. pubéscens, Andr. leath. 1. t. 5. E. pubéscens, var. hispida, Thumb. eric. no. 61. Corollas purple, small.


49 E. tárdisflóra (Sal. in Lin. trans. 6. p. 375.) leaves 4 in

Late-flowered Heath. Fl. year. Clt. 1800. Shrub 1 to 2 feet.


51 E. fusilla (Salisb. in Lin. trans. 6. p. 374.) downy; leaves 4 in a whorl; calyces adpressed, broad, ovate-cuneated; corollas very small, downy, with a cup-shaped tube, and the limb the length of the tube; anthers awned; fruit glabrous. ½ G. Native of the Cape of Good Hope, in Baay Fals. Flowers terminal.

Least Heath. Shrub.

52 E. conica (Lodd. bot. cab. 1179.) leaves 4 in a whorl, linear, glabrous; flowers axillary, racemose; genitils inclosed. ½ G. Native of the Cape of Good Hope. Flowers purplish-red.


53 E. pubigerata (Sal. in Lin. trans. 6. p. 372.) downy; leaves 4 in a whorl; flowers terminal; calyces spreading, ovate-acuminate; corolla 1½ line long, downy, with a long recurved obtuse limb; anthers awned; fruit hairy. ½ G. Native of the Cape of Good Hope, on Mount Taffelberg.

Down-bearing Heath. Shrub.

54 E. catervsflora (Sal. l. c.) hairy; leaves 4 in a whorl; stem angular; flowers terminal; corolla 2 lines long, downy, with a narrow ovulate tube; anthers awned, dehiscing by long holes. ½ G. Native of the Cape of Good Hope, on the summit of Mount Taffelberg. E. pubescens villosa, Thumb. Thumbs. no. 61.

Company-flowered Heath. Shrub.

55 E. tuberosaflora (Sal. in Lin. trans. 6. p. 377.) stem glabrous; leaves 4 in a whorl; flowers terminal; corolla 1½ line long, smooth, with a tubinate 8-angled tube, and an incurved limb; spurs of anthers glabrous. ½ G. Native of the Cape of Good Hope. Flowers pale purple.


56 E. thlagnifera (Sal. in Lin. trans. 6. p. 374.) leaves 4 in a whorl; flowers terminal; calyx imbricate; corolla 2½ lines long, with an urceolar tube, and a recurved limb: anthers hairy, broadly foraminose; spurs hairy. ½ G. Native of the Cape of Good Hope.


57 E. plumosa (Andr. heath. 2. t. 6.) leaves 4 in a whorl, linear, hairy, erect, imbricated; flowers disposed in axillary whorls; corolla ovate-globose; calyxes hairy; anthers awned. ½ G. Native of the Cape of Good Hope. Erica amoena, Wendl. eric. 17. p. 73. Corollas purplish-red. Branches erect. Style exserted.


58 E. tendissima (Wendl. eric. fasc. 6. p. 9, with a figure) leaves 4 in a whorl, linear-filiform, glabrous, erect, somewhat imbricated; flowers terminal, aggregate; calyx short, naked; corolla urceolate, with an erect limb; anthers appendiculate. ½ G. Native of the Cape of Good Hope. Flowers red.


Cupped-beaked Heath. Shrub.

60 E. piluliformis (Lin. spec. ed. 2. p. 507.) leaves 4 in a whorl, linear, glabrous, ciliated; flowers terminal; corolla globose, 2½ lines long, having the tube length of the calyx; calyce segments ovate, acuminate, deeper coloured at the apex; spurs of anthers linear-attenuated; fruit glabrous. ½ G. Native of the Cape of Good Hope. E. nudiflora, Berg. pl. cap. p. 119. E. piluliformis, Sal. in Lin. trans. 6. p. 370. Flowers red. Style exserted.


61 E. imbrexella (Hort. Loud. Hort. brit. no. 9716. p. 150.) leaves 4 in a whorl; bracteas remote from the calyx; calyx minute; flowers terminal; corolla with an oval tube and a recurved limb; spurs of anthers linear-attenuated, hairy. ½ G. Native of the Cape of Good Hope. E. gracilis, Salisb. in Lin. trans. 6. p. 375. Flowers small, red or purple.


62 E. intervallaris (Sal. in Lin. trans. 6. p. 375.) stem slender; leaves 4 in a whorl, remote; flowers terminal; corolla 1½ to 2 lines long, with an ovate-cylindrical tube, and a broad mouth; anthers awned; pericarp hairy. ½ G. Native of the Cape of Good Hope. Erica elongata, Roxb. mss. Flowers small, red, drooping.—A very pretty species.


63 E. mucosa (Andr. heath. 1. t. 6.) leaves 4 in a whorl, glabrous; flowers terminal; corolla globose, viscid, having the interstices of the limb rather tumid; calyce segments ovate, obtuse, coloured, tipped with green; anthers awned. ½ G. Native of the Cape of Good Hope. Lodd. bot. cab. 35. Icon. pl. kew. t. 15. Flowers pale purplish-red. Corolla with the tube more or less obvate. Style inclosed.


64 E. mucosissima (Bedd. eric. wob. p. 15.) leaves short, 4 in a whorl; flowers terminal; corolla globose; calyce segments coloured, tipped with green; anthers awned. ½ G. Native of the Cape of Good Hope. Lodd. bot. cab. 1202. Flowers small, purplish red. Style inclosed.


65 E. lateralis (Willd. spec. 2. p. 380. but not of Andr.) leaves 4 in a whorl, linear-attenuated, glabrous; flowers terminal; bracteas remote from the calyx; calyce segments ciliated; corolla conical, having the segments anointed with drops of waxy matter at top; crests of anthers downy. ½ G. Native of the Cape of Good Hope. E. gullaeoflora, Sal. in Lin. trans. 6. p. 374. Corollas small, red. Style exserted.

Var. a; stem fastigate; corolla 1 or 1½ line long, with a hemispherical tube; stigma much exserted. ½ G. E. lateralis, Willd. l. c.

Var. b; stem low; corolla 2 lines long, with an ovate tube; stigma hardly exserted. ½ G. E. incarnata, Andr. heath. 1. t. 19. Lodd. bot. cab. 1655.

Var. g; stem dwarf; corolla 2½ lines long, with an ovate tube; stigma a little exserted. ½ G. E. rubens hümilis, Wendl. eric. fasc. 3. p. 13. with a figure.


66 E. festa (Sal. in Lin. trans. 6. p. 371.) leaves 4 in a
whorl; stem angular; flowers axillary at the tops of the branches; corolla viscid, 2½ lines long, with a narrow urceolate tube; filaments mutic; anthers appendiculate. 'G. Native of New Holland. Flowers fulvous.


67 E. canthareforrhis (Lodd. bot. cab. 1961.) leaves ovate, flowers terminal; pedicels about 3 together; calyx reflexed; corolla ovate, ventricose. 'G. Native of the Cape of Good Hope. Flowers white. Anthers unknown. Nearly allied to E. reflexa.

**Tanked-formated flowered Heath.** Fl. May, June. Clt.?

Shrub 1 to 2 feet.

68 E. bonplandia'na (Sims, bot. mag. t. 2126.) leaves 4 in a whorl, imbricate, acerose; flowers terminal, the small branches, solitary or by threes, sessile; anthers close to the calyx; corolla large, with an urceolate tube, and an acute spreading limb; genitils inclosed. 'G. Native of the Cape of Good Hope. Flowers white. Perhaps a species of *Callista*.

**Var. fuscus; flowers buff-coloured.**

**Var. gr. aurantia; corolla orange-coloured, with an ovate-globose tube; anthers a little exerted. 'G. Erica Bonplandia.**


69 E. cupressina (Hort. Bedf. hor. eric. wob. p. 6. pl. 3. f. 10.) leaves 4 in a whorl, slightly ciliated; flowers terminal; corolla ovate-globose; anthers remote from the calyx; calyx recurved; anthers awned. 'G. Native of the Cape of Good Hope. Flowers small, purplish-red. Style inclosed.

**Variatia.**

**Modest Heath.** Fl. April, May. Shrub.

70 E. sullis (Bedf. eric. wob. p. 15.) downy; leaves 4 in a whorl, linear, linear-ovate, glabrous; flowers terminal; corolla ovate-globose; anthers remote from the calyx; corolla globose; anthers wided. 'G. Native of the Cape of Good Hope. Flowers purplish-red. Style inclosed.

**Soft Heath.** Fl. May. Clt. 1790. Shrub 1 to 2 feet.

71 E. salicaria (And. heath. vol. 4.) leaves 4 in a whorl, sessile, crowded, linear, glabrous, flowers terminal, umbellate; corolla ovate-globose; anthers wided. 'G. Native of the Cape of Good Hope. Flowers red-purple. Style inclosed.

**Pipkin-flowered Heath.** Fl. Autumn. Clt. 1802. Shrub 2 feet.

72 E. subula'ta (Wendl. eric. ex Spreng. syst. 2. p. 190.) leaves 4 in a whorl, linear-subulate, a little incurved, elongated; branches rather hairy; flowers terminal, crowded; corolla urceolate; calyxes subulate, adpressed; anthers wided. 'G. Native of the Cape of Good Hope. Flowers purple. Style exerted.


73 E. rufoida (Thumb. diss. 64. t. 6.) leaves 4 in a whorl, linear, pilose; flowers terminal, umbellate, glabrous; calyxes villous, reflexed; corollas 2 lines long, urceolate; anthers lanceolate. 'G. Native of the Cape of Good Hope. Flowers red, with a globular tube, and the segments imbricate at the base. Anthers very minute. Style inclosed.


74 E. smithiana (Lodd. bot. cab. 1614. Bedf. eric. wob. p. 794) leaves 4 in a whorl; flowers subterminal, axillary, drooping; corolla globose, bell-shaped; anthers remote from the calyx; anthers awned. 'G. Native of the Cape of Good Hope. Flowers purplish-red.

**Smith's Heath.** Fl. April, May. Clt. 1791. Shrub 1 to 2 feet.

75 E. coriifolia (Bedf. hor. eric. wob. p. 29. but not of Ait. hor. kew.) leaves 4 in a whorl; flowers terminal; corolla ovate; anthers remote from the calyx; anthers inclosed. 'G. Native of the Cape of Good Hope. Flowers white. Style inclosed.

**Cory-laned Heath.** Fl. Autumn. Clt.? Shrub.

76 E. pectinifolia (Sal. in Lin. trans. 6. p. 367.) leaves 4 in a whorl, narrow, ovate-cuneated, pectinated; flowers terminal; calyx, incurved; corolla 5-7 lines long, woolly inside; anthers inclosed, appendiculate. 'G. Native of the Cape of Good Hope. Flowers white. Style inclosed.


§ 2. Anthers crestet.

* Leaves 3 in a whorl. **Corollas campanulate.**

78 E. nivea (Bedf. hor. eric. wob. p. 16.) leaves 3 in a whorl, glabrous; flowers terminal; corolla bell-shaped; anthers remote from and approximating the calyx, large, loose; calyx large; anthers crested. 'G. Native of the Cape of Good Hope. Flowers white. Style subexcised.

**Snowy-flowered Heath.** Fl. Summer. Clt. 1816. Shrub 1 to 2 feet.

79 E. lecanthes (Lin. suppl. p. 223. Andr. heath. 3 t. 15.) glabrous; leaves 3 in a whorl, erect; branches cymose; flowers terminal, drooping; peduncles glabrous; anthers remote from and approximating the calyx; corolla oblong bell-shaped, having the limb as long as the tube; anthers crested. 'G. Native of the Cape of Good Hope. Anthers crested. 'G. Native of the Cape of Good Hope. Flowers white, purple. Style inclosed.


**Var. fuscus; style very long.**

**Var. gr. squarrosa (Hort.) leaves squarrose.**

**Var. gr. miniata (Hortol.) plants small.**


81 E. polytrichifolia (Sal. in Lin. trans. 6. p. 329.) leaves 3-5 in a whorl; stem pendulous; flowers terminal; anthers remote from the calyx; calyxes gradually narrowed at the base; corolla 1-2 lines long; spurs of anthers cuneate. 'G. Native of Portugal, about Lisbon. Fruit pear-shaped. Perhaps only a variety of E. arborea.

**Polytrichum-leaved Heath.** Shrub.

82 E. leucotricha (And. heaths. 2. t. 16.) leaves 3 in a whorl, filiform; branches spreading; flowers terminal, by threes; co-
**Leaves 3 in a whorl.** Corollas urceolate.

83. E. *nītida* (Andr. heath. 3. t. 18.) leaves 3 in a whorl, scabrous, spreading; flowers terminal, drooping; pedicels downy; bracteas sessile, close to the calyx; corollas urceolately globose; anthers crested. **G.** Native of the Cape of Good Hope. Lodd. bot. bot. cab. 1131. E. *reflexa* rubra, Hort. Flowers white, tinged with red. Style exserted.


84. E. *pedunculāris* (Sal. in Lin. trans. 6. p. 329.) leaves 3 in a whorl, linear, hispid; flowers terminal; corolla 3 lines long, with a globose tube; anthers woolly, dehiscing by long chinks, crested. **G.** Native of the Cape of Good Hope. E. rābens, Thunb. diss. no. 88. but not of Andr. Pedicels an inch long. Flowers purplish red.

*Peduncular-flowerd* Heath. Shrub.

85. E. *fauśta* (Sal. in Lin. trans. 6. p. 326.) leaves 3 in a whorl, bristle flowers terminal; corolla 3½ lines long, downy outside, with an urceolate tube; spars of anthers serrated, attenuated, crested. **G.** Native of the Cape of Good Hope. Very like *E. hirta*, Thunb. Flowers pale purple.


86. E. *incāna* (Wendl. eric. fasc. 18. p. 89. with a figure.) leaves 3 in a whorl, linear-oblong, obtuse, hairy, white beneath; bracteas remote from the calyx; flowers terminal, downy; corolla urceolate; anthers awned. **G.** Native of the Cape of Good Hope. Flowers white. There is also a red-flowered variety of this species. Style exserted.


87. E. *ovāta* (Lodd. bot. cab. 417.) downy; leaves 3 in a whorl; flowers terminal; bracteas remote from the calyx; corollas ovate; awns of anthers crested a little. **G.** Native of the Cape of Good Hope. Flowers purplish red. Style inclosed.


88. E. *reflexā* (Link, enum. 1 p. 371. Lodd. bot. cab. 1787.) leaves 3 in a whorl, glabrous, lanceolate, obtuse; flowers terminal, usually 3 in a fascicle; calyx, bracteas, and pedicels coloured; corolla ovate, venticose at the base, clammy, crests of anthers plumose. **G.** Native of the Cape of Good Hope. Calyx spreading. Corollas white, waxy, middle sized. Anthers black. Very nearly allied to *E. nītida*, and probably only a variety of it. The young leaves are said by Link to be glandularly ciliated. Style inclosed.


Var, *β*, _atropurpurea* (Lodd. bot. cab. 1400.) plant dwarf; flowers deeper purple.

Var, *γ*, _alba* (Bedd. l. c.) flowers white.

Var, *δ*, _pālīdā* (Lodd. bot. cab. 1507.) flowers pale purple.


90. E. *vernīcella* (Sal. in Lin. trans. 6. p. 335.) leaves 3 in a whorl, viscid; corolla 2½ lines long, with a recurved limb; flowers terminal; spars of anthers ear-formed and cuneated, hairy; fruit smooth. **G.** Native of the Cape of Good Hope. E. glūtīnōsa, Roxb. mas. The leaves are bluntly acuminate, densely clothed with glands in the reduplicate part; hence they appear shining and clammy.


**Leaves 4 in a whorl.** Corollas campanulate.


93. E. *declīnāta* (Bedd. hort. eric. wob. p. 7.) leaves 4 in a whorl; flowers axillar, subspicate; corolla bell-shaped; bracteas remote from the calyx; anthers crested. **G.** Native of the Cape of Good Hope. Lodd. bot. cab. 1662. Flowers white, tinged with red. Style a little exserted.


**Leaves 4 in a whorl.** Corollas urceolate.


95. E. *lachnaeōides*. This species is very distinct from *Erica lachnaeōa*, Andr.; but we have not means of giving any description of it. Anthers crested. **G.** Native of the Cape of Good Hope. E. lachnaeōa purpūreā, Andr. heaths. 3. t. 3. Flowers red.

*Lachnaeōa-like* Heath. Fl. May, July. Clt. 1793. Shrub 96. E. *racemīfera* (Andr. heaths. 3. t. 12.) leaves 4 in a whorl, and are as well as the calyces glabrous; flowers axillary, verticillate; corolla ovate-globose; anthers crested. **G.** Native of the Cape of Good Hope. Flowers small, red. Style inclosed.


97. E. *sōlānīdrī* (Andr. heath. 2. t. 17. Ait. hort. kew. 2. p. 399.) leaves 4 in a whorl, hispid; branches decumbent; flowers terminal, capitate, or umbellate; bracteas sessile, linear, ciliated, near the calyx; corolla globosely bell-shaped; anthers crested.

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ERI.  G. Native of the Cape of Good Hope. Flowers reddish-purple. Style inclosed.


98 E. acvta (Andr. heath. 2. t. 19. Ait. hort. kew. 2. p. 399.) leaves 4 in a whorl, stiff, glabrous, spreading; flowers terminal, usually by threes, drooping; bracteas approximating the calyx; corolla ovate-globose; anthers crested. ER. G. Native of the Cape of Good Hope. Flowers small, deep purplish-red. Calyx ciliated. Style inclosed.


99 E. rubens (Andr. heath. 2. p. 21.) leaves 4 in a whorl, hispid, spreading; flowers terminal; bracteas remote from and approximating the calyx; anthers crested or awned; corolla ovate-globose. ER. G. Native of the Cape of Good Hope. Flowers small, purplish-red. Style incised.


101 E. barba'ta (Andr. heath. 2. t. 23.) leaves 4 in a whorl, ciliated; flowers terminal, umbellate, drooping; corolla short, urceolate; bracteas remote from the calyx; calycine segments spatulate, ciliated; anthers crested. ER. G. Native of the Cape of Good Hope. Lodd. bot. cab. 124. Erica barbata major, Andr. heath. 2. t. 23. Flowers pale yellow, with brown anthers. Style incised.

Var. β. minor (Andr. heath. 2. t. 24.) flowers white, with black anthers; but according to the hort. eric. wob. they are red, flowering Feb. Aug.


103 E. cernua (Lin. suppl. p. 222.) leaves 4 in a whorl, hoary, villous or ciliated, aristate: those of the branches ovate; flowers terminal, drooping, umbellate; bracteas decurrent; calyx much fringed; corolla ovate-globose; anthers crested. ER. G. Native of the Cape of Good Hope. Montin, in act. ups. 2. p. 291. t. 9. f. 3. Flowers purplish-red or pink. Corolla ½ lines long.


104 E. velece'nuda (Sal. in Lin. trans. 6. p. 379.) leaves 4 in a whorl, linear, incurvedly spreading, glabrous; branches hairy; spikes coarctate; flowers drooping; bracteas and calyces fringed; corolla 2½ lines long, with an amphoteri-formed tube, and crenulated limb; anthers hairy; spurs cuneated, hairy. ER. G. Native of the Cape of Good Hope. Erica cernua, Andr. heath. 1. t. 20. Lodd. bot. cab. 822. but not of Lin. Flowers flesh-coloured. Style inclosed.


105 E. pendula (Wendl. eric. 10. p. 13. with a figure) leaves 4 in a whorl, glabrous; flowers terminal, drooping; bracteas remote from the calyx; calycine segments lanceolate, adpressed; corolla ovate, angular; anthers crested. ER. G. Native of the Cape of Good Hope. Ait. hort. kew. 2. p. 400. E. arbuscula, Lodd. bot. cab. 843. Flowers purple: in hort. kew. there are said to be 3 bracteas on each pedicle; 2 near the calyx, and the third remote from it. Style inclosed.


106 E. nutans; leaves 4 in a whorl; flowers terminal, drooping; bracteas remote from the flower; calyx ribbed, green; corolla ovate-globose; anthers crested. ER. G. Native of the Cape of Good Hope. E. pendula, Hort. Bedd. eric. wob. p. 18. but not of Wendl. Flowers reddish-purple. Style a little exserted.


107 E. fibula (Link. enum. 1. p. 368.) leaves 4 in a whorl, finely ciliated; flowers terminal; bracteas remote from the calyx; corolla oblong-globose; anthers crested. ER. G. Native of the Cape of Good Hope. E. lactiflorum, Roll. cat. E. tricolor, Spreng. syst. 2. p. 193. Limb of corolla connivent and drawn out. Flowers white. Style inclosed.


108 E. lactiflora (Lodd. bot. cab. t. 901.) leaves 4 in a whorl, and are as well as the branches scabrous; flowers terminal, erectish; corolla ovate; bracteas remote from the calyx; anthers crested. ER. G. Native of the Cape of Good Hope. E. lactiflorum, Rol. cat. E. tricolor, Spreng. syst. 2. p. 193. Limb of corolla connivent and drawn out. Flowers white. Style inclosed.


109 E. unica (Spreng. syst. 2. p. 183.) leaves 4 in a whorl, crowded, ciliated, erect; flowers terminal, umbellate, drooping; bracteas remote from the calyx; calyx minute, coloured, ciliated; corolla urceolate or globosely bell-shaped; anthers crested. ER. G. Native of the Cape of Good Hope. E. pedunculata, Andr. heath. 4. icon. but not of Wendl. E. ciliata, Hort. Flowers purplish-red. Style inclosed.


* * * * * Leaves 5-6 or more in a whorl. Corollas campanulate.

111 E. empetrifolia (Lin. mant. p. 375.) leaves 6-7 in a whorl, oblong-linear, ciliated, erect; flowers disposed in globose racemose whorls; bracteas and calyces lanceolate; corolla 2 lines long, hairy, with an urceolar tube, and a recurvedly spreading limb; anthers awned or crested; stigma exserted. ER. G. Native of the Cape of Good Hope. Lin. diss. no. 15. with a figure. Thunb. diss. no. 70. Curt. bot. mag. 447. Lodd. bot. cab. 1875. Calyx 4-lobed. Style exserted Flowers purplish-red.
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_Bell-flowered_ Heath. Shrub.

**• • • • ** Leaves 5-6 in a whorl. Corollas urceolate.

113 E. empénotidès (Andr. heath. 2. t. 25. Ait. hort. kew. 2. p. 299.) leaves 6 in a whorl, glaucous, ciliated, spreading, soft; flowers terminal, subsicope, close; bracteas hairy, approximating the calyx; corollas ovate; calyx green, rough, large; auricles of anthers broad. ō G. Native of the Cape of Good Hope. Lodd. bot. cab. 1758. E. pyxidifólia, Sal. in Lin. trans. 6. p. 371. E. empetrifòlia glauca, Wendl. eric. 11. p. 11, with a figure. Flowers pale purplish-red. Calyx 4-cleft. Corolla smooth, 2 lines long, with an obovate tube, and an incurvally spreading limb. Pericarp globose, glabrous. Style exserted.


114 E. málleolâris (Sal. in Lin. trans. 6. p. 370.) leaves 6 in a whorl; flowers axillary at the tops of the branches; calyx quadrifid; corolla 1 1/2 line long, smooth, with an urceolar tube, and a recurvedly spreading limb; pericarp glabrous. ō G. Native of the Cape of Good Hope. Erica empetrifòlia, Schnev. pl. no. 17, with a figure. Houtt. pl. syst. 4. p. 517. t. 23. f. 2. Berg. pl. cap. p. 120.


115 E. glutinósa (Berg. fl. cap. p. 98. Thumb. diss. no. 48.) leaves alternate or opposite, beset with glandular hairs; spikes of flowers coarctate; flowers drooping; bracteas remote from the calyx; corollas viscid, with an ovate pyramidal tube and a spreading limb; anthers crusted. ō G. Native of the Cape of Good Hope. Icon. pl. kew. t. 17. E. drosseròides, Andr. heath. 1. t. 13. Lodd. bot. cab. 1685. Andrómeda drosseròides, Lin. mant. 239. Corollas deep red, form of those of a species of Callist. 3 to 5 lines long.


116 E. pálax (Sal. in Lin. trans. 6. p. 371.) leaves 6 in a whorl; flowers axillary at the tops of the branches; corolla 2 lines long, viscid, with the tube urceolar and a little ribbed; filaments length of tube, spurred; pericarp viscid. ō G. Native of the Cape of Good Hope. Anthers bipartite.


117 E. páillos (Sal. in Lin. trans. 6. p. 371.) leaves 6 in a whorl; flowers axillary at the tops of the branches; corolla 3 lines long, viscid, with an urceolar, rather ribbed tube; filaments hardly the length of the tube, minutely spurred. ō G. Native of the Cape of Good Hope.


118 E. carduifólia (Sal. in Lin. trans. 6. p. 330.) leaves 6 in a whorl, bristy; flowers terminal; pedicels long; corolla 2 1/2 lines long, smooth, with a glabrous tube; filaments very short; anthers awned. ō G. Native of the Cape of Good Hope. Stigma narrow. Corollas purple.


119 E. cinérascens (Willd. endem. suppl. p. 21.) branches and calyces tomentose, and beset with long hairs; leaves 5 in a whorl, ciliated with long hairs; bracteas foliaceous, close to the calyx; style subexserted; anthers awned. ō G. Native of the Cape of Good Hope. Flowers purple. Nearly allied to _E. cinerà._


120 E. phýsòsèdes (Lin. spec. ed. 2. 566. diss. no. 32, with a figure) leaves 4-6 in a whorl, spreading, viscid, slender; flowers terminal, 4-6 in a fascicle; bracteas remote from the calyx; calycine segments ovate, ciliated; corolla ovate-globose, clammy, having the interspaces of the limb ending in a tumid hook; anthers crested. ō G. Native of the Cape of Good Hope. Lodd. bot. cab. 223. E. sèquax, Sal. in Lin. trans. 6. p. 378. Corolla 3-4 lines long, white. Style inclosed.


§ 3. Anthers mutic, that is, without awns or crests.

* Leaves 3 in a whorl. Corollas campanulate.

121 E. canaliculâtà (Andr. heath. 3. t. 38.) leaves 3 in a whorl, subulate, glabrous, spreading; pedicels terminal, by threes, bracteate, downy; calyces coloured; corolla campanulate; stamens a little exserted. ō G. Native of the Cape of Good Hope. Lodd. bot. cab. 184. Corollas pale red, spreading.


123 E. fæâva (Andr. heath. 2. t. 38. Ait. hort. kew. 2. p. 292.) leaves 3 in a whorl, short, glabrous, erect; flowers terminal, crowded; pedicels bracteate; corolla campanulate. ō G. Native of the Cape of Good Hope. Lodd. bot. cab. 882. Flowers yellow. Style exserted.


124 E. coarçatâ (Wendl. eric. fass. 19. no. 1.) leaves 3 in a whorl, linear, a little ciliated, erectly spreading; flowers twin, axillary, erect, on pedicels, which are equal in length to the leaves; calyx small, foliaceous; stigma peltate; anthers mutic. ō G. Native of the Cape of Good Hope. Corolla campanulate, purple, dilated at top. Style much exserted. Bracteas remote from the calyx.


125 E. approximâtâ (Schlecht. ex Spreng. syst. 2. p. 196.) leaves 3 in a whorl, nearl tetricate, petiolate, short, glabrous, remote, spreading; branches twiggy, rather hairy; flowers subracemose, glabrous; calyx coloured, adpressed. ō G. Native of the Cape of Good Hope. Corolla campanulate. Anthers mutic.


126 E. spiculifólia (Sal. in Lin. trans. 6. p. 324. Smith, fl. græc. t. 333.) leaves 3 in a whorl, mucronulate, ciliated; flowers disposed in terminal racemes, drooping; pedicels bracteless, rather downy; style much exserted. ō H. Native on the top of Mount Olympus. E. Ólympica, Sibth. ms. Corollas 1 line long, smooth, red. Calyx coloured.

_Spike-flowered Heath._ Shrub decumbent.

127 E. scopâria (Linn. mant. 375. Diss. eric. no. 13, with a figure of the flower) leaves 3 in a whorl, linear, glabrous; flowers axillary, disposed in second racemes; corolla smooth, campa-
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*Leaves 3 in a whorl. Corollas urceolate.

133 E. eriocéphala (Andr. heath. 2. t. 37.) leaves 3 in a whorl, and are as well as the calyxes and corollas woolly; bracteas remote and approximating the calyx; anthers a little exserted; flowers terminal, umbellate; corolla urceolate; G. Native of the Cape of Good Hope. Lodd. bot. cab. 1270. E. canescens, Ait. hort. kew. 2. p. 407. E. graphiloides, Hort. Flowers with a purplish-red calyx, and a white corolla. Style exserted.


134 E. tuberculâris (Sal. in Lin. trans. 6. p. 330.) leaves 3 in a whorl; flowers terminal; corolla 1½ line long, rough from tubercles, with a globose tube; filaments mutic; pericarp on a long stipe. G. Native of the Cape of Good Hope. Erica inclyta, Sal. ms. Anthers minute, smooth. Flowers purple.


136 E. absinthoides (Lin. mant. p. 66.) leaves 3-4 in a whorl, linear, scabrous, more or less ovate, rather remote; flowers twice, terminal on axillary branches, drooping; calyx and corollas glabrous; bracteas remote from the calyx, leaf-like; corolla globose, viscid; stamens exserted. G. Native of the Cape of Good Hope. E. virgulâris a, Salib. in Lin. t. 3. p. 324. E. virgulâta, Wendl. E. exsêrta, Hort. Corollas white, with a red apex.


139 E. f. Colîle'ter (Spreng. syst. 2. p. 192.) branches straight, hairy; leaves linear-oblong, obtuse, revolute, rather hispíd, spreading; flowers axillary, drooping, clamy; corolla urceolate; style exserted; stigma peltate. G. Native of the Cape of Good Hope.

Collette Heath. Shrub.

** Leaves 4 in a whorl. Corollas campanulate.

140 E. odóra'ta (Andr. heath. 3. t. 64.) leaves 4 in a whorl, glandularly ciliated, spreading; flowers terminal, umbellately verticillate, drooping; pedicels coloured; bracteas remote from the calyx; corolla campanulate, viscid. G. Native of the Cape of Good Hope. Lodd. bot. cab. 633. Sims, bot. mag. 1399. Corolla white, very like those of some species of An'drómeda. Style inclosed.


141 E. prope'ndens (Andr. heath. 2. t. 45. Sims, bot. mag. 21408.) leaves 4 in a whorl, short, ciliated; branches flexuous; bracteas approximating the calyx; flowers terminal, solitary or by threes; corolla bell-shaped. G. Native of the Cape of Good Hope. Lodd. bot. cab. 63. Calycine segments jagged or serrated. Corolla purple, or deep red. Style inclosed.


142 E. pal'ûstris (Andr. heath. 2. t. 46.) leaves 4 in a whorl, linear, obtuse, downy; flowers terminal, umbellate; bracteas...
remote from the calyx; corollas cylindrically bell-shaped; anthers a little exserted. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Lodd. bot. cab. t. 4. Branches divaricate. Corollas reddish-purple.


143 E. visca'ria (Andr. heath. t. 1. t. 43.) leaves 4 in a whorl, linear, glabrous, spreading; flowers axillary, disposed in verticillate spikes or racemes, drooping; corolla campanulate, clothed with ciliate down; bracteas exserted from the calyx, sessile; calyxes perigynous; corolla glabrous. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Lodd. bot. cab. 726. Icon. pl. kew. t. 1. E. viscida, Sal. in Lin. trans. 6. p. 372. Corolla pale purplish-red, 3 lines long, with a cup-shaped ribbed tube. Style inclosed.

Var. a, incâna; leaves hoary, 1½ to 3 lines long. \( \frac{1}{2} \). G. E. viscia'ria, Thunb. diss. no. 40. Lin. mant. 521. diss. no. 45. with a figure.

Var. b, glabra; leaves green, 3½–5½ lines long. \( \frac{1}{2} \). G. E. viscia'ria, Andr. heath. t. 43. Icon. pl. kew. t. 1.


144 E. pyrami'diformis (Wendl. ex Spreng. syst. 2. p. 198.) leaves linear, hispid, spreading, 4 in a whorl; flowers terminal, usually by threes, erect; calyxes adpressed, hispid; stigma quadrifid. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Flowers purplish-red, campanulate.


145 E. nida'cula'ria (Lodd. bot. cab. 764.) glabrous; leaves 4 in a whorl, short, obtuse; flowers terminal, imbricate; bracteas remote from the calyx; corolla cup-shaped; style exserted; anthers mucous. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Flowers white.


146 E. be'lla (Lodd. bot. cab. 307. Spreng. syst. 2. p. 197.) leaves 4 in a whorl, linear, filiform, smoothish, spreading, incurved at the apex; pedicels terminal, racemose, hispid, erect; calyx reflexed: style filiform; corolla campanulate; anthers mucous. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. E. pulchella, Hortul. Flowers red. Style exserted.


147 E. styli'aris (Spreng. syst. 2. p. 198.) leaves 4 in a whorl, linear, obtuse, much spreading, and are as well as the branches hispid; flowers terminal, glomerate, erectish; calyxes coloured, spreading, ciliolate; corolla campanulate; style much exserted; stigma capitate. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Anthers mucous.


148 E. jub'a'ta (Lodd. bot. cab. icon.) leaves 4 in a whorl, linear, filiform, rather ciliate, incurvedly spreading; pedicels terminal, corymbose, hispid; calyx tetragonal, coloured, sericulated; corolla campanulate rotate; anthers mucous. \( \frac{1}{2} \). G. Native of the Cape of Good Hope.


149 E. consta'ntia (Bedf. eric. wob. p. 6.) leaves 4 in a whorl; flowers terminating the branches; bracteas remote from the calyx; corolla bell-shaped. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Style exserted.


150 E. con'geta (Wendl. eric. fasc. 17. p. 75.) leaves 4 in a whorl, linear, pilose, spreading; flowers axillary, capitate, drooping; calyx foliaceous, imbricate, toothed; corolla campanulate, open; bracteas sessile; anthers mucous. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Flowers white. Style exserted.


151 E. flexi'caulis (Dry. in hort. kew. p. 2. p. 395.) leaves linear, 4 in a whorl, spreading, oblong, glandularly ciliate; flowers terminal, umbellate; calyxes coloured, glandularly ciliate. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. E. glandulosa, Andr. heath. 2. t. 58. but not of Thumb. Corolla purple, urceolate. Style inclosed.


152 E. perla'ta (Hort. ex Bedf. hort. eric. wob. p. 18.) leaves 4 in a whorl; flowers terminal, umbellate; bracteas free from the calyx; corolla globose; anthers a little exserted, mucous. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Corolla reddish-purple; anthers reddish-orange. Style exserted.


153 E. cruci'formis (Andr. heath. vol. 4. icon.) leaves 4 in a whorl, linear, glabrous, spreading; flowers terminal, by fours, deccussate; corolla urceolate; anthers mucous. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Flowers purple. Style inclosed.


154 E. meli'fera (Hort. ex Link. enum. 1. p. 370.) leaves 4 in a whorl, linear, hairy, spreading, rather remote; flowers terminal, aggregate; calyxes foliaceous; corolla campanulate; anthers mucous; style capitata, exserted. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Branches hairy. Corollas purple. Anthers exserted, awned.

Honey-bearing Heath. Shrub.

155 E. Sicilia (Schönberg, in Linnaea. 2. p. 614.) leaves 4 in a whorl, petiolate, linear, nearly terete, ciliate; flowers terminal, on long pedicels, subumbellate, ciliate, erect; calyx small, scales ciliate; corolla campanulate; anthers mucous; style capitata, exserted. \( \frac{1}{2} \). H. Native of Sicily. Flowers red.

Sicilian Heath. Fl. April, June. Clt. 1819. Shrub 2 to 3 feet.

156 E. aggrega'ta (Wendl. eric. fasc. 18. p. 11.) leaves 4 in a whorl, linear, hairy, spreading; flowers terminating the small branches; bracteas remote from the calyx; corolla globose, downy, with an erectish limb. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Lodd. bot. cab. 1678. Flowers purplish-red, the whole forming bracted raceme. There is also a white-flowered variety of this. Style exserted.


157 E. dec'ora (Andr. heath. 3. t. 66. Ait. hort. kew. t. 392.) leaves 6 in a whorl, elongated, recurved; flowers axillary, terminal, disposed in spikes or racemes; bracteas remote from the calyx; corolla campanulate; anthers a little exserted. \( \frac{1}{2} \). G. Native of the Cape of Good Hope.


158 E. Beaumont'a'na (Roll. Lodd. bot. cab. 1686.) glabrous; leaves linear, 5½ in a whorl; flowers axillary and terminal, drooping; pedicels many-bracteata; corolla campanulate; style a little exserted. \( \frac{1}{2} \). G. Native of the Cape of Good Hope. Corollas white. Allied to E. propendens.


159 E. ceris'thoides (Lin. spec. ed. 2. p. 505. diss. no. 43.)
with a figure) leaves 5-6 in a whorl, linear-lanceolate, pilose and ciliated, bearded at the apex; flowers terminal, capitate, drooping; corolla oblong, with an inflated tube, clothed with viscid hairs outside; bracteas sessile, larger than the calyx; segments of calyx cuneate. *G.* Native of the Cape of Good Hope. 

§ 1. Anthers mutic at the base, that is, without any horns, anns, or spurs. 

*Leaves 4 in a whorl.* Corollas campanulate.

1 G. *va'gans* (Salisb. mss. ex Don, in edinb. phil. journ. 17. p. 153.) leaves 4-5 in a whorl, glabrous; flowers axillary, racemose; bracteas remote from the calyx; pedicels usually twin; corolla short, campanulate. *H.* Native of England, in Cornwall; and of the south of France and north of Africa.

II *GYPSOCALLIS* (from γύπος, gypsos, lime, and κάλλος, kallos, most beautiful; the plants are very elegant, and generally inhabit calcareous districts). Sal. mss. D. Don, in edinb. phil. journ. 17. p. 153.—Erica species of authors. 

LIN. SYST. Octádmia. Monogynia. Calyx 4-parted, glumaceous, naked at the base. Corolla campanulate, or short-tubular, with a dilated mouth. Stamens exserted; filaments flattened or filiform; anthers bipartite; having the cells mutic at the base, distinct and subipitate, dehiscing by an oblique pore. Stigma simple. Capsule 4-celled, many-seeded.—Small shrubs, natives of Europe and Africa, with whorled acerose leaves, and lateral or terminal crowded flowers. This genus is easily distinguished from *Erica* in the exserted anthers, flattened filaments, and simple stigma.

§ 4. Anthers corniculate. Leaves 3 or 4 in a whorl.

160 *E.* M. (Andr. heath. vol. 4. icon.) leaves 3 in a whorl; flowers terminal by threes or fours; corollas ovate; bracteas remote from the calyx; anthers corniculate. *G.* Native of the Cape of Good Hope. Flowers purplish-red. Style inclosed.


Delicate Heath. Fl. Year. CIt. 1791. Shrub ½ foot. 163 *E.* graced (Andr. heath. 1. t. 2.) stem and branches glabrous; leaves glabrous, 4 in a whorl, linear; flowers terminal; corolla ovate-globose, or urceolate; anthers corniculate. *G.* Native of the Cape of Good Hope. Lodd. bot. cab. 244. Flowers small, purplish-red. Style inclosed.


Early Heath. Fl. March. CIt. 1820. Shrub ½ foot. 165 *E.* fimbriata (Andr. heath. 3. t. 23.) leaves 3-4 in a whorl; flowers terminal, capitate; corolla globose; bracteas imbricated, ciliated; anthers corniculate, a little exserted. *G.* Native of the Cape of Good Hope. Lodd. bot. cab. 1047. Flowers red.

Fringed Heath. Fl. March, May. CIt. 1806. Shrub 1 foot. 166 *E.* setacea (Andr. heath. 1. t. 24.) leaves 3 in a whorl; flowers terminal; corolla globose, bell-shaped; bracteas remote from the calyx; anthers corniculate. *G.* Native of the Cape of Good Hope. Flowers small, purplish-red. Style exserted.


167 *E.* lavandulefolia (Sal. in Lin. trans. 6. p. 332.) stem hoary; leaves 3 in a whorl, hoary?; flowers terminal; bracteas close to the calyx; corollas 2 lines long, with a 4-angled tube, and an incurved limb; filaments very broad at the base; anthers inclosed, mutic. *G.* Native of the Cape of Good Hope.

Lavender-leaved Heath. Fl. May, Aug. CIt. 1795. Shrub. 168 *E.* cristiflora (Sal. in Lin. trans. 6. p. 332.) leaves 3 in a whorl; flowers terminal; calyx 4-toothed; corolla 2 lines long, having the limb 3 times longer than the tube, entire at the base; anthers mutic, inclosed; pericarp smooth. *G.* Native of the Cape of Good Hope. Erica melanthera, Thunb. dis. no. 12. but not of Lin. Perhaps a species of *Lopandra.* 

Crest-flowered Heath. Fl. May, June. CIt. 1803. Shrub. 169 *E.* umbilicata (Sal. in Lin. trans. 6. p. 336.) leaves 3 in a whorl; fascicles 7-12-flowered, terminal; calyx hoary; corolla 2 lines long, having the limb ciliated at both ends; anthers mutic, inclosed; pericarp hairy; stigma narrow. *G.* Native of the Cape of Good Hope. Erica aggregata, Roxb. mss. —Perhaps a species of *Lampros.&mdash;Horn-flowered Heath. Fl. May, Sept. CIt. 17? Shrub. 170 *E.* genistfolia (Sal. in Lin. trans. 6. p. 337.) flowers terminal, by threes; calyx viscid; corolla 2 lines long, having the limb ciliated at both ends; anthers mutic, inclosed; pericarp smooth; stigma broad. *G.* Native of the Cape of Good Hope. Erica tetraloba, Roxb. mss.—Perhaps a species of *Lampros.* 


Periploca-flowered Heath. Fl. May, Dec. CIt. 1812. Shb. Cult. Elegant shrubs when in blossom, like all the other genera of the order. Turfy peat, mixed with sand, is the best soil for the species; and young tops root readily, if planted in a pot of sand in spring, with a bell-glass over them, in a moderate heat. When the plants have grown a considerable size, the balls of earth should be raised a little above the surface, so as to prevent water from remaining at the top of the stem, and the pots in which they are grown should be well drained.
Floral structures:

- **Corolla**: white, oval, terminal, usually with three sepals, drooping, with calyce segments spathulate, serrated, corolla conical.
- **Calyx**: divided into five parts, campanulate, with toothed margins.
- **Pedicel**: elongated, with a rastellum.
- **Anther**: elongated, in a whorl, linear, spreading, with glabrous and hispidly covered tissues.
- **Flower structure**: includes leaves, flowers, petals, sepals, calyx, corolla, anther, filaments, and ovary.

**Additional notes**:

- **Flower clusters** are racemose, with a variety of lengths and colors.
- **Stem** and **branching pattern** vary depending on the species, from erect to procumbent.
- **Leaf characteristics** include glabrous, pubescent, and pilose surfaces.

**Scientific references**:

- **Smith**, *Flora of the British Isles*, vol. 11, 1834.
- **Lin.,** *The Genera of Plants*, 1834.

**European species**:

- **Erica carnea**, native to the South of Germany and Switzerland.
- **Erica neglecta**, native to the Moor-Heath.
- **Erica praestans**, native to the Moor-Heath.

**Mediterranean species**:

- **Erica m.**, native to the Moor-Heath.
- **Erica s.**, native to the Moor-Heath.

**Figures and data**:

- **Journ. Linn. Soc.**, 1834.
- **Journ. Linn. Soc.**, 1834.
ERICACEÆ.


16 G. Actea; leaves 3 in a whorl, glabrous; flowers terminal on short pedicles; bracteas approximating the calyx; calyx one half shorter than the corolla, with ovate segments, furnished with a green line; anthers exerted, mutic; stigma peltate. H. G. Native of the Cape of Good Hope. Erica Actea, Link. enum. 1. p. 371. but not of Bedd. Corollas purplish.


17 G. nodicans; leaves 3 in a whorl, spreading, a little reflexed, linear, glabrous, awned at the apex; flowers terminal, usually by threes; pedicels bracteate, and are as well as the calyx coloured and viscid; corolla campanulate rotate, with a revolute limb. H. G. Native of the Cape of Good Hope. Erica nigrigia, Lodd. bot. cab. t. 54. Flowers white; anthers black.


18 G. pates; leaves 3 in a whorl, oval-oblong, ciliated, spreading; branches hairy; flowers terminal, usually by threes; calyx coloured, ciliated; corolla campanulate rotate; anthers connivent, scabrous. H. G. Native of the Cape of Good Hope. Erica pates, Andr. heath. 2. t. 35. Lodd. bot. cab. 1228. Flowers red.


19 G. concava; leaves 3-4 in a whorl, linear, glabrous, spreading; flowers axillary; corolla campanulate; anthers a little exerted. H. G. Native of the Cape of Good Hope. Erica concava, Ker. in bot. mag. 2149. Flowers pale red.


20 G. acutangula; leaves 3 in a whorl, ? linear; flowers terminal, usually by twos or threes; corolla campanulate, with a short tube, and a reflexed limb. H. G. Native of the Cape of Good Hope. Erica acutangula, Lodd. bot. cab. 1868. Flowers white; anthers black, exerted. Bracteas approximating the calyx, sessile.


21 G. melanthiaca; leaves 3 in a whorl, obtuse, smooth, spreading; flowers terminal, subumbellate, nutant; bracteas remote from the flower; corolla bell-shaped; bracteas and calyces coloured; stigma obtuse; fruit silky. H. G. Native of the Cape of Good Hope. Erica melanthiaca, Linn. mant. 232. Lodd. bot. cab. 867. Erica lysimachiaeflora, Sal. in Lin. trans. 6. p. 332. Corolla 2 lines long, having the limb twice the length of the tube. Flowers red, with black anthers. Calyx large, and is, as well as the pedicles, coloured.


22 G. thalictriflora; branches hairy, straight; leaves 3 in a whorl, linear, glabrous, erect; flowers terminal, 2-3 together, erect, almost sessile; bracteas approximating the calyx; corolla short, campanulate, with deep open segments. H. G. Native of the Cape of Good Hope. Erica thalictriflora, Lodd. bot. cab. t. 1294. Flowers yellow.


** Leaves 3 in a whorl. Corollas urceolate.


Umbrilale Moor Heath. Fl. April, July. Clt. 1782. Shrub 2 to 3 feet.

24 G. villosa; leaves 3 in a whorl, linear, spreading, villous; flowers axillary or terminal, on long pedicels, drooping, usually by threes; calyces segments ovate, villous; corollas urceolate, with the limb a little connivent. H. G. Native of the Cape of Good Hope. Erica villosa, Andr. heath. 3. t. 53. Corollas white, with black anthers.


25 G. dumosa; leaves 4 in a whorl, oval, with revolute edges, spreading, hairy; flowers terminal, corymbosse, drooping; calyces adpressed, follicaceous; bracteas close to the calyx; corollas urceolate. H. G. Native of the Cape of Good Hope. Erica dumosa, Andr. heath. 4. icon. Flowers pale red.


27 G. staminea; leaves 3 in a whorl, linear, glabrous, erect; flowers axillary, scattered; bracteas approximating the calyx; corolla subtrose, about equal in length to the calyx; stamens divaricate, much exerted. H. G. Native of the Cape of Good Hope. Erica staminea, Andr. heath. 3. t. 48. Flowers sulphur-coloured.


28 G. tiareflora; leaves 3 in a whorl, stiff, spreading, obtuse; flowers terminal, glomerate, drooping; calyx bracteate; corolla covered by the calyx, having the tube dilated at the base; filaments gradually dilated. H. G. Native of the Cape of Good Hope. Erica tiareflora, Andr. heath. 3. t. 52. Erica placentaflora, Sal. in Lin. trans. 6. p. 548. Plant with pale hoary aspect. Calyx coloured. Flowers red; anthers black.


29 G. imbricata; leaves 3 in a whorl, linear, erect, imbricated; branches rather hairy; calyx imbricated by bracteas; corollas urceolate, 1 line long, length of calyx; flowers terminal, aggregate, erectish; pericarp eggaroid. H. G. Native of the Cape of Good Hope. Erica imbricata, Linn. mant. 372. diss.
ERRICACEAE. II. GYPSOCALLIX.

803

no. 52. with a figure of the flower, spec. ed. 2. p. 503. Andr. heath. 1. t. 34. Lodd. bot. cab. 1347. Erica quinquangularris, Berg. pl. cap. p. 117. Erica pyramidalis, Sal. in Lin. trans. 6. p. 349. Flowers small, white or red, with brown anthers. * 


Shrub 1 foot.

30. G. squameflora; leaves 3 in a whorl, linear; flowers terminal; bracteas scattered above the middle of the pedicels; corolla ⅔ of a line long, shorter than the calyx; anthers acuminate; fruit broad, ovate. גו. Native of the Cape of Good Hope. Erica squameflora, Sal. in Lin. trans. 6. p. 349. Erica imbricata, Roxb. mss. but not of Lin.


Shrub 2 feet.

31. G. caesia; leaves 3 in a whorl, short, linear, glabrous; flowers terminal, twin, erect; calyx imbricate by bracteas; corolla campanulate, ⅔ of a line long, shorter than the calyx; anthers oblong, with a narrow dissepiement; fruit ovate; stigma broad. גו. Native of the Cape of Good Hope. Erica caesia, Sal. in Lin. trans. 6. p. 349. 

Grey Moor Heath. Shrub.

32. G. flexuosa; leaves 3 in a whorl, linear, glabrous, erect, short; flowers terminal, usually by threes, erect; bracteas scattered above the middle of the pedicels, imbricate, small; corolla bell-shaped, 1 line long, longer than the calyx, which is coloured; anthers oblong, with a narrow dissepiement; nectarium large; fruit imbricate. גו. Native of the Cape of Good Hope. Erica flexuosa, Andr. heath. 1. t. 23. Sal. in Lin. trans. 6. p. 349. Lodd. bot. cab. 1495. E. divaricata, Wendl. eric. t. p. 5. Flowers white, with red anthers.

Fleshy Moor Heath. Fl. April, July. Clt. 1792. Shrub 1 to 2 feet.

33. G. lasciva; leaves 3 in a whorl, linear; flowers terminal; calyx imbricate by bracteas; corolla ⅔ of a line long, a little shorter than the calyx; anthers foraminose from the base; stigma peltate. גו. Native of the Cape of Good Hope. Erica lasciva, Sal. in Lin. trans. 6. p. 349. Erica imbricata, Thumb. diss. no. 11.


34. G. dioteflora; leaves 3 in a whorl; flowers axillary at the top of the branches; calyce segments cuneated; corolla ⅓ line long, with an ureculose tube; anthers a little exserted; pericarp downy. גו. Native of the Cape of Good Hope. Erica dioteflora, Sal. in Lin. trans. 6. p. 342. Erica pistillaris, Sol. mss.


Shrub.

35. G. stylosa; leaves 3 in a whorl; flowers terminal; pedicels long, furnished with bracteas near the calyx; corolla 1 line long, a little longer than the calyx; anthers pointed; fruit ovate; style very long. גו. Native of the Cape of Good Hope. Erica stylosa, Sal. in Lin. trans. 6. p. 530. Erica bracteata, Roxb. mss. but not of Lin.


Shrub.

36. G. polhammii; leaves 3 in a whorl, obtuse, imbricate; flowers terminal; corolla with a globose tube, and a 4-parted limb; anthers a little exserted. גו. Native of the Cape of Good Hope. Erica Polhammii, Lodd. bot. cab. 1852. Flowers pale red, with deep red anthers.


37. G. longipedunculata; leaves oval, mucronate, 3 in a whorl, hispid; flowers terminal, umbellate, on long pedicels, pendulous; bracteas remote from the calyx, deciduous; calyces adpressed; corolla ovate; anthers mutic. גו. Native of the Cape of Good Hope. Erica longipedunculata, Lodd. bot. cab. 103. Flowers large, purple, pedicellate, and are, as well as the calyces, beset with glandular hairs.


Small-needled Moor Heath. Fl. April, June. Clt. 1810. Shrub 1 to 2 feet.

39. G. peltata; leaves 3 in a whorl; flowers terminal; bracteas remote from and approximating the calyx; corolla round, with deep, loose segments. גו. Native of the Cape of Good Hope. Erica peltata, Andr. heath. 4. icon. Erica excelsa, Bedf. eric. wob. p. 9. Flowers pale purplish-red.


* Leaves 3 in a whorl. Corollas campanulate.

40. G. articulatis; leaves 3 in a whorl, glabrous; flowers terminal, umbellate; bracteas remote from the calyx; anthers corniculate; corollas slender, campanulate. のでしょう. Native of the Cape of Good Hope. Erica articulata, Bedf. hort. eric. wob. p. 2. but not of Thumb. nor Curt. Flowers reddish-purple.

Jointed Moor-Heath. Shrub.

41. G. loddioeseni; leaves 3 in a whorl; downy; flowers terminal; bracteas approximating the calyx, sessile; corolla campanulate, with deep segments; anthers awned. のでしょう. Native of the Cape of Good Hope. Erica concavâ, Lodd. bot. cab. 134. but not of Ker. Flowers pale purplish-red, spreading. Probably a species of Erica.


42. G. intertexta; leaves 3 in a whorl, ciliated with long hairs; flowers sessile; bracteas approximating the calyx, which is ciliated; corolla round, campanulate; anthers awned. のでしょう. Native of the Cape of Good Hope. Erica intertexta, Lodd. bot. cab. 1034. Flowers yellow. Anthers black.


43. G. paniculata; leaves 3 in a whorl, linear, triquetrous, glabrous; branches tomentose; flowers terminal, by threes; corolla ⅔ of a line long, campanulate, having the segments imbricate at the base; spurs of anthers linear, smooth; style exserted. のでしょう. Native of the Cape of Good Hope. Erica paniculata, Lin. spec. ed. 2. p. 508. Lodd. bot. cab. 1194. Erica milleflora, Berg. pl. cap. p. 96. Sal. in Lin. trans. 6. p. 550. Flowers red. There is also a white-flowered variety of the species.


Shrub.

44. G. bedfordiana; leaves 3 in a whorl; flowers terminal; bracteas remote from the calyx; corolla bell-shaped; anthers awned, exserted, as well as the style. のでしょう. Native of the Cape of Good Hope. Erica mellifera, Bedf. eric. wob. p. 15. Duke of Bedford's Gypsocallis. Fl. Spring. Clt. 1812. Shrub.

** Leaves 3 in a whorl. Corollas urceolate.

45. G. fragrans; glabrous; leaves opposite, or 3 in a whorl, ⅞ × 2
ERICACEÆ. II. GYPSOCALLIS. III. BLERIA.


**LIN. Syst. Tetra-Pentándria Monogrâmia.** Calyx 4-parted. Corolla short-tubular, with a 4-cleft limb. Stamens 4-6, inserted in the receptacle; filaments linear, flattened, glabrous; anthers binate; cells of anthers attenuated at the base, mutic, dehiscing by an oblong hole. Stigma simple, obtuse. Capsule 4-celled, many-seeded.—Much branched shrubs, natives of the Cape of Good Hope. Leaves verticillate, with revolute margins. Flowers terminal, glomerate.

**Anthers mutic.**


**Depressed Bleria. Fl. June, July. Clt. 1816. Shrub depressed.**


**Scabrous Bleria. Fl. May, June. Clt. 1824. Shrub 1 foot.**


**Fascicled-flowered Bleria. Fl. June, July. Shrub 1 foot.**

5 B. antículata (Lin. mant. 198.) leaves 4 in a whorl, ovate or linear, glabrous, shining; bracteas solitary; calyx funnel-shaped, hairy; stamens 4-5, exerted. *Æ. G. Native of the Cape of Good Hope. Erica antícula, Thunb. prod. 71. Wendl. coll. 2. p. 19. t. 44. Erica paleácea, Sal. in Lin. trans. 6. p. 341. Erica ericóphala, Lam. encyc. no. 73. ill. 78. Flowers reddish. Heads drooping.

**Jointed-stemmed Bleria. Fl. May, June. Clt. 1795. Shrub 1 foot.**


**Purple-flowered Bleria. Fl. May, June. Clt. 1791. Shrub.**

7 B. mucósa (Willd. spec. 1. p. 630. Ait. hort. kew. 1. p. 150.) leaves 4 in a whorl; calyx pilose; corolla campanulate, pilose above; flowers axillary; stigma peltate. *Æ. G. Native of the Cape of Good Hope. Erica albáns. Thunb. prod. 70. ?

**Mossy Bleria. Fl. June, Aug. Clt. 1774. Shrub 1 foot.**


**Least Bleria. Shrub.**


**Hairy Bleria. Shrub.**

10 B. paucilíflóra (Wendl. coll. 2. p. 17. t. 43.) leaves 3 in a whorl, ovate, glabrous; corolla clavate, glabrous; calyx
hairy; anthers exserted. G. Native of the Cape of Good Hope. Flowers red.

11 B. Thunb. - leaves 4 in a whorl; bracteas and calyxes very pilose; corolla 2 lines long, hairy; stamens 4-5, very broad at top, inclosed. G. Native of the Cape of Good Hope. Erica hirsuta, Thunb. prod. p. 72. Sal. in Lin. trans. 6. p. 339.

**Thunberg’s Bleria.** Shrubs.
12 B. ciliciflora; leaves 3 in a whorl, minute; calyx very pilose; bracteas distinct; corolla 1½ line long, hairy; stamens 4, inclosed. G. Native of the Cape of Good Hope. Erica ciliciflora, Sal. in Lin. trans. 8. p. 389. Anthers didymous, bearded.

13 B. xeranthemifolia; leaves 3 in a whorl, recurved; calyx woolly, imbricate; corolla 1½ lines long, woolly; stamens exserted. G. Native of the Cape of Good Hope. Erica xeranthemifolia, Sal. in Lin. trans. 6. p. 339.

14 B. nodiflora; leaves 3 in a whorl, villous; calyx funnel-shaped, very villous; corolla 1½ line long, hairy; stamens 4, exserted. G. Native of the Cape of Good Hope. Erica nodiflora, Sal. in Lin. trans. 6. p. 340.

15 B. flosculosa; leaves 4 in a whorl; calyx fringed; corolla 2½ lines long, with a very narrow tube and dilated limb; stamens 4, exserted, with very narrow filaments. G. Native of the Cape of Good Hope. Erica flosculosa, Sal. in Lin. trans. 6. p. 340. The flowers resemble the florets in the disk of *Compositae*.

**Flosculose Bleria.** Shrubs.
16 B. barbi'gera; leaves 4 in a whorl; calyx deeply 4-cleft, imbricated by bracteas, bearded; corolla glabrous, 2 lines long; stamens 4-5, exserted; style very narrow. G. Native of the Cape of Good Hope. Erica barbigera, Sal. in Lin. trans. 6. p. 341.

**Beard-bearing Bleria.** Shrubs.
17 B. turmalis; leaves 6 in a whorl; pedunecles very short; calyx minute, adpressed; corolla 2 lines long; stamens 4-5, exserted; anthers broad. G. Native of the Cape of Good Hope. Erica turmalis, Sal. in Lin. trans. 6. p. 342.

**Trooper Bleria.** Shrubs.
18 B. equisetifolia; leaves 3 in a whorl; flowers 3-5 in a fascicle; pedunecles long, glabrous; corolla 1½ line long; stamens 4-5, exserted. G. Native of the Cape of Good Hope. Erica equisetifolia, Sal. in Lin. trans. 6. p. 342.


§ 2. Anthers anned.


20 B. ciliaris (Lin. suppl. 122.) leaves 4 in a whorl, glabrous, minute; calyx very hairy; corolla 1½ line long, hairy; stamens 4-5, inclosed; filaments spurred. G. Native of the Cape of Good Hope. Wendl. coll. 2. p. 35. t. 49.

**ERICACEAE. III. BleriA.**

**IV. SYMPIEZA. V. PACHYSI.**

805


21 B. dumosa (Wendl. coll. 2. p. 3. t. 38.) leaves 3-4 in a whorl, linear, oblong, erect, 1 line long; corolla 1½ line long, glabrous; anthers crested, exserted. G. Native of the Cape of Good Hope. Flowers rose-coloured, drooping.

22 B. brunneifolia; leaves 6 in a whorl, long; bracteas near the calyx, the outer one very long; corolla 1½ line long; stamens 6, exserted; filaments spurred. G. Native of the Cape of Good Hope. Erica brunneifolia, Sal. in Lin. trans. 6. p. 341. Erica hemerolista, Sal. ms. 

**Brunia-leaved Bleria.** Shrubs.

**Cult.** Pretty little shrubs, deserving a place in every collection of greenhouse plants. A mixture of turfy peat and sand is the best soil for them; and young tops root readily, planted in a pot of sand in spring, with a bell-glass over them.

**IV. SYMPIEZA (from συμπήζω, sympieza, to press; in reference to the stamens, which adhere to the tube of the corolla.)** Licht. ms. ex Rœm. et Schultes, syst. 3. p. 8. no. 447. and p. 171.

**Lin. syst. Tetrandria Monogynia.** Calyx turbinate, bilabiata, fringed. Corolla tubular, sub-bilabiata, longer than the calyx. Stamens 4-5, inserted in the tube of the corolla, exserted; anthers erect; style length of stamens; stigma simple. Capsule 4-celled, many-seeded.—A small branched shrub, native of the Cape of Good Hope. Leaves adpressed, erect, imbricated, 3 in a whorl, linear, trigonal, glabrous, engraved by a line above. Flowers drooping, disposed in terminal heads, purplish.


**Cult.** See Bléria above for culture and propagation.

**V. PACHYSA (from παχύς, pachys, thick; in reference to the thick substance of the corolla.)** D. Don, in edinb. phil. journ. 17. p. 153.—Erica species of authors.

**Lin. syst. Octandria Monogynia.** Calyx deeply 4-parted, (f. 155 a.) coriaceous. Corolla nearly globose, (f. 155 c.) coriaceous, with a contracted 4-lobed mouth, (f. 155 d.) Stamens inclosed; filaments much dilated; anthers biform; cells of anthers short, crested at the base, opening by an oblique foramen. Style dilated at the base; stigma simple, obtuse. Disk hypogynous, elevated. Capsule 4-celled, many-seeded.—Small erect shrubs, natives of the Cape of Good Hope. Leaves loosely imbricated, compressed, 3 in a whorl. Flowers large, terminal, subcorymbose, drooping; pedicels bracteolate.


**Ardent Pachysia.** Fl. April, June. Clt. 1800. Shrubs 1 to 2 feet.
ERICACEÆ. V. PACHYSA. VI. CERAMIA.


3 P. ariosta; leaves 3 in a whorl, linear, spreading, rough; corolla ovate-globose, clamy; bracteas approximating the calyx; cells of anthers awned. G. Native of the Cape of Good Hope. Erica vörnîx, var. coccinea, Bedf. eric. wob. p. 27. t. 3. f. 22. Corolla reddish-orange, tipped with green. This species differs from the rest in the anthers being awned, not crested.


4 P. lambertiana; leaves 3 in a whorl, linear, glabrous, spreading; corollas glabrous, ovate-globose; bracteas 3 near the calyx, and I remove from it. G. Native of the Cape of Good Hope. Erica lambertiana, Andr. heath. 2. t. 18. Erica lambertiana, Sol. in Ait. hort. kew. 2. p. 391. Lodl. bot. cab. 3. Calyx red. Corollas white.


6 P. formosâ; leaves 3 in a whorl, oblong, obtuse, spreading; calyxes spreading; corolla ovate-globose, clamy. G. Native of the Cape of Good Hope. Erica formosâ, Thumb. diss. no. 80. t. 3. f. 3. Corolla white.


Berry-flowered Pachysa. Fl. April, July. Cilt. 1774. Shrub 1 to 2 feet.

8 P. vesiculâris; leaves 3 in a whorl, besprinkled with black vesicles; corolla 1 line long, clothed with viscid pubescence; anthers inclosed; spurs of anthers parallel, cuneated; fruit silky. G. Native of the Cape of Good Hope. Erica vesiculâris, Sol. in Lin. trans. 6. p. 335. Erica conûceae, Hortul.


9 P. colmifôlora; leaves 3 in a whorl, narrow-cuneate; flowers terminal; calyx imbricating by bracteas; corolla 2½ lines long, viscid, with a spherical tube; spurs of anthers very violous. G. Native of the Cape of Good Hope. Erica glomifôlora, Sol. in Lin. trans. 6. p. 390. Erica viscidî, Sol. mss.

Tufted-flowered Pachysa. Shrub.

Cult. See Erica, p. 800. for culture and propagation.

VI. CERAMIA (from κεράς, keramion, a pitcher; shape of flowers). D. Don, in edinb. phil. journ. 17. p. 153.—Erica species of authors.


2 C. auriculâtis; leaves 3 in a whorl, linear-lanceolate; corolla 3 lines long, downy outside, with an ovate tube; spurs of anthers minute, ear-formed. G. Native of the Cape of Good Hope. Erica auriculâtis, Sol. in Lin. trans. 6. p. 327. Like the preceding, but differs in the spurs of the anthers.

Auricled-anthered Cerâmia. Fl. April, Nov. Cilt. 1500.


Cat-thyme-leaved Cerâmia. Fl. April, May. Cilt. 1792.


4 C. helianthemifôlîa; leaves opposite, obovate; corolla urceolate, 2 lines long, downy both inside and outside; spurs of anthers long. G. Native of the Cape of Good Hope. Erica helianthemifôlîa, Sol. in Lin. trans. 6. p. 328. Corollas white.


VI. CERAMIA

**Ericaceae**


Var. γ; corolla smooth; anthers exerted. **G.** Erica thymifolia, Wendl. obs. p. 48.

**Flat-leaved** Ceramia. Fl. June, Nov. Clt. 1795. Shrub 2 feet.

6 C. thymifolia; leaves 3 in a whorl, ovate, spreading, remititious, ciliate; flowers axillary, solitary; spurs of anthers short; corolla globose, urceolate, downy. **G.** Native of the Cape of Good Hope. Erica thymifolia, Andr. heath. 2. t. 29. Ait. hort. kew. 2. p. 402. Bracteas remote from the calyx. Corollas white, but in Andrew’s figure they are red or purple.


Shrub.

7 C. thymifolia; leaves 3 in a whorl, lanceolate, rather villous, spreading; flowers axillary, cymose. **G.** Native of the Cape of Good Hope. Erica thymifolia, Spreng. syst. 2. p. 109.


Shrub.

8 C. cordata; leaves 3 in a whorl, ovate, sub-cordate, villous above and woolly beneath; branches divaricate, hairy; corolla globose; anthers mutic. **G.** Native of the Cape of Good Hope. Erica cordata, Andr. heath. 3. t. 41. Corollas white, with black anthers.

**Cordate-leaved** Ceramia. Fl. April, June. Clt. 1799.

Shrub diffuse.

9 C. ? calathiflora; leaves 3 in a whorl, ovate, imbricated; flowers terminal; calyx tormentose; corolla campanulate, 1 line long, smooth; spurs of anthers cuneate, hairy: fruit tormentose; style exerted. **G.** Native of the Cape of Good Hope. Erica calathiflora, Sal. in Lin. trans. 6. p. 338. Erica bicolor, Thunb. diss. no. 57. Willd. spec. 2. p. 363.


Shrub.

10 C. latifolia; leaves 3 in a whorl, oblong-lanceolate, villous above and white beneath, as in the rest of the species; flowers axillary, aggregate; corolla conical; genitils exerted; anthers mutic. **G.** Native of the Cape of Good Hope. Erica latifolia, Andr. 2. t. 41. Flowers dark red or purple. Branches flexuous.


Shrub.

11 C. oblata; leaves obliquely verticillate, linear, truncate, with glandular margins; spikes of flowers terminal, corymbose; corolla urceolate, viscid, having the interstices of the limb ending in a tumid hook each; anthers awned. **G.** Native of the Cape of Good Hope. Erica oblata, Thunb. diss. no. 73. with a good figure. Baur. pl. kew. t. 3. Andr. heath, 1. t. 23. Wendl. eric. 17. p. 77. with a figure. Bracteas remote from the calyx; calyx segments linear-oblong. Corollas pale purple.


Shrub.

12 C. oxycoecifolia; stems decumbent, filiform; leaves 3 in a whorl, ovate; corolla 1½ line long, campanulate, hairy; filaments mutic. **G.** Native of the Cape of Good Hope. Erica oxycoecifolia, Sal. in Lin. trans. 6. p. 325.—A very pretty species, with the habit of Oxycoccus palustris. Flowers red.

**Cranberry-leaved** Ceramia. Fl. Feb. May. Clt. 1791.

Shrub decumbent.

13 C. bleennia; leaves 4-5 in a whorl, ovate, cuneated; corolla urceolate, 4-5 lines long, viscid, having the segments imbricated at the base; filaments very broad; anthers corniculate.

**VII. Desmia. VIII. Eurylepis.**

**VII. Desmia** (from desmia, desme, a fascicle; in reference to the glomerate flowers). D. Don, in edinb. phil. journ. July, 1834.—Erica species of authors.

**Lin. syst. Octandria, Monogynia.** Calyx 4-tooth. Corolla globose, with a contracted 4-toothed mouth. Stamens exerted; filaments flattened; cells of anthers short, dehiscing by an oblong foramen, with the base truly simple and confluent in the filament. Stigma capitate. Capsule 4-celled, many-seeded. Seeds suboblongate.—Small erect shrubs, natives of the Cape of Good Hope. Leaves scattered, spreading, subulate. Flowers terminal, glomerate.


Shrub 1 foot.

2 D. aquilegias (D. Don, l. c.) umbels pedunculate, aggregate; filaments dilated. **G.** Native of the Cape of Good Hope.

**Equal Desmia.** Shrub.

3 D. pociolor (D. Don, l. c.) leaves 3 in a whorl, aristate; flowers fascicled; corolla oblong, with a dilated throat; filaments dilated; stigma nearly simple. **G.** Native of the Cape of Good Hope.

**Polium-leaved** Desmia. Shrub.

**Cult.** See Erica, p. 800. for culture and propagation.

VIII. Eurylepis** (from eury, eury, broad, and lepis, lepis, a scale; in reference to the dilated scales of the calyx). D. Don, in edinb. phil. journ. 17. p. 154.—Erica species of authors.

**Lin. syst. Octandria, Monogynia.** Calyx 4-parted, coriaceous, bibracteate at the base. Corolla tubular, coriaceous, ventricose at the base, with a 4-cleft erect limb. Stamens inclosed; filaments dilated, canaliculate; anthers bipartite; cells of anthers coriaceous, dehiscing by an oblong foramen, auricled at the base. Stigma clavate, with a 4 tubercled disk and a crenulated ring. Capsule 4-celled, many-seeded. Segments of placentas 2-lobed. Seeds oval, ventricose.—Diffusely branched shrubs, natives of the Cape of Good Hope. Leaves scattered, with revolute margins. Flowers terminal, solitary, large, pendulous.
ERIACEÆ.

§ 1. Anthers mutic at the base. Normal species.


2 A. azaleefólia; leaves 3 in a whorl, lanceolate; flowers terminal; corolla 13 line long, hairy; anthers mutic, exserted, foraminose the whole length. h. G. Native of the Cape of Good Hope. Erica azaleefólia, Sal. in Lin. trans. 6. p. 334. Azalea-leaved Broad-scaled-Heath. Shrub.


6 E. bracteatá; leaves 3 in a whorl, lanceolate, glabrous, adpressed; flowers terminal, umbellate; bracteas large, obovate, and are, as well as the calyxes, coloured; corolla 2 lines long, having the segments crenulatá. h. G. Native of the Cape of Good Hope. Erica bracteatá, Thunb. diss. no. 3. Erica obvallária, Sal. in Lin. trans. 6. p. 397. Filaments spurred. Bracteate Broad-scaled-Heath. Fl. May. June. Clt. 1800. Shrub 1 foot.

7 E. mucronatá; leaves 3 in a whorl, linear-lanceolate, cuspidate, spreading, glabrous; flowers terminal, racemose; calyx bracteate, coloured, about equal in length to the corolla, which is campanulate. h. G. Native of the Cape of Good Hope. Erica mucronatá, Andr. heath. 3. t. 43. Flowers reddish-purple. Mucronate-leaved Broad-scaled-Heath. Fl. May. Aug. Clt. 1800. Shrub 1 foot.


9 E. ? oecordatá; leaves 3 in a whorl, lanceolate, keeled, broad-erect, with scabrous margins; floral leaves or bracteas dilated; flowers terminal; calyxes spreading, about equal in length to the corolla, which is urceolate; bracteas loose, ribbed. h. G. Native of the Cape of Good Hope. Erica oecordatá, Link. Bedf. eric. wob. p. 17. Calyx and corolla purplish-red.


§ 2. Anthers anned or corniculate at the base.

11 E. fra'grans; leaves 3 in a whorl, subulate, glaucous, erect; flowers drooping, terminal, usually by threes; bracteas large; calyx coloured, about equal in length to the corolla, which is campanulate and spreading; anthers bifid at the base, corniculate; stigma obtuse. h. G. Native of the Cape of Good Hope. Erica fra'grans, Andr. heath. 2. t. 27. Lodd. bot. cab. 288. Ait. hort. kew. 2. p. 407. Calyx and corolla purplish-red. Fragrant Broad-scaled-Heath. Fl. March, June. Clt. 1803. Shrub ¾ foot.


14 E. pyroleflóra (D. Don, l. c.) leaves 3 in a whorl, linear-cuneate, glabrous; flowers terminal, aggregate; calyx bracteate, equal in length to the corolla, which is urceolate; segments of the calyx ovate, cuneate; spurs of anthers broad, edformed. h. G. Native of the Cape of Good Hope. Erica pyroleflóra, Willd. spec. 2. p. 356. exclusive of the synonyms. Erica pyroleflóra, Sal. in Lin. trans. p. 2. Flowers white. Corolla 2 lines long, with a 4-angled spherical tube.

15. E. triflora; leaves 3 in a whorl, linear-cuneated, glabrous; spreading; flowers terminal; segments of calyx obturated; corolla 1½ times as long; a turbinate rather 4 angled tube; spurs of anthers narrow-cuneated. \( G \). Native of the Cape of Good Hope. Erica triflora, Linn. 1774. Shrub. 1. Foot.


16. E. palliiflora; stem angular; leaves lanceolate-cuneated, glabrous; flowers terminal; corolla 1½ times as long; a little longer than the calyx; spurs of anthers caréné-emblasted, glabrous. \( G \). Native of the Cape of Good Hope. Erica palliiflora, Linn. 1774. Trans. 6. p. 351. Corolla white, about the length of the calyx.


18. E. rigidiflora; leaves 3 in a whorl, linear, stiff, shining, erectly spreading; flowers terminal, aggregate, drooping; calyces colored, about equal in length to the corolla, which is campanulate; anthers appendiculate. \( G \). Native of the Cape of Good Hope. Erica rigidiflora, Wendl. Desmos.


20. E. Monsoniæ; leaves 3 in a whorl, linear, attenuated and ovate, erect, placed so as to appear in 4 ranks; flowers terminal, nuttant; corollas oblong, inflated, 7-9 lines long; bracteas imbricate, reflexed; calyx recurved; spurs of anthers awned; fruit globose, quadrangular. \( G \). Native of the Cape of Good Hope. Erica Monsoniæ, Linn. Suppl. 223. Thumb. Diss. no. 52. with a figure. Wendl. eric. fossa. 10. p. 9. with a figure. Erica varifolia, Linn. in Trans. 6. p. 353. Flowers white. Corolla twice longer than the calyx.

Lady Monson's Broad-scaled Heath. Fl. April, Sept. Cilt. 1787. Shrub 2 to 3 feet.

Cult. For culture and propagation see Erica, p. 800.

IX. EURYSTEGIA (from eurys, brodr, and stegy, stegy, a cover; in reference to the large calyx). D. Don, in edinb. phil. journ. 17. p. 154. —Erica species of authors.

Lin. syct. Octandria Monogynia. Calyx 4-parted, large, glumaceous. Corolla urceolate, with a contracted 4-toothed mouth. Stamens inclosed; filaments dilated, flat; anthers

bipartite, opening by an oblong foramen, biappendiculate at the base: appendages flattened, deciduous, orosely crenated. Stigma capitate. Capsule 4-celled, many-seeded. —Densely branched shrubs, natives of the Cape of Good Hope. Leaves loose, subulate, with revolute margins. Flowers almost solitary, drooping, white or rose-colored.


5. E. emarginata; leaves 3 in a whorl, oblong, channelled, recurved, ciliated; flowers terminal, by threes; bracteas near the calyx, and are, as well as the calyces, ciliated. \( G \). Native of the Cape of Good Hope. Erica emarginata, Andr. Heath. 3 t. 20. Flowers white, with black anthers. Very like Erica nigra, and Erica luchneefolius.


6. E. tripecs; leaves 3 in a whorl, somewhat trigonal, ciliated, erectly spreading; branches downy; flowers terminal, by threes; bracteas imbricate; calyx segments oblong, scarious, a little shorter than the corolla; anthers ciliated, mutic, and are, as well as the style, which is capitate, exserted; corolla ovate. \( G \). Native of the Cape of Good Hope. Erica tripecs, Link, enum. 1. p. 371. Bedf. eric. wob. p. 25. Lodd. Bot. cab. 902. Flowers white. Calyx white.


7. E. trigums; leaves 3 in a whorl, ciliated; flowers axillary; bracteas remote from the calyx; calyx large, inflated, angular; corolla ovate, inflated; anthers ciliated; style inclosed. \( G \). Native of the Cape of Good Hope. Erica trigums, Lodd. Bot. cab. 257. Bedf. eric. wob. 3 t. 19. Flowers large, white.


8. E. tegulifolia; leaves oval, downy; flowers terminal;
corolla 1½ line long, with a turbinate, rather 4-angled limb; spurs of anthers large, orbicular. 

Native of the Cape of Good Hope. Leaves broad, imbricated in the straight order.

**Tile-leaved Large-calyxed Heath. Clt. 1800.** Shrub.

9 E. corydalis; leaves 3 in a whorl, lanceolate-cuneate; flowers terminal; corolla 2 lines long, having the limb entire at the base; anthers inclosed, winged on the back. 


10 E. ? pannosa; leaves 3-5 in a whorl, a little reduplicate; flowers terminal; corolla 2 lines long, woolly; filaments broad, with short spurs; style exerted. 


—This plant is very like *Eriodictyum capitatum*, but differs in the leaves being 3-5 in a whorl, and greatly in the anthers.


11 E. ? lachnefolia; leaves 3 in a whorl, ovate, imbricated, downy; flowers terminal, subcapitate; bracteas imbricated, approximating the calyx; anthers crested; corolla ovate, rather longer than the calyx. 

Native of the Cape of Good Hope. Erica lachnefolia, Sal. in Lin. trans. 6. p. 335. 

Native of the Cape of Good Hope. Erica lachnefolia, Sal. in Lin. trans. 6. p. 335. 

—Erica species of authors.

**X. LOPHANDRA (from *lophos*, lophs, a crest, and *anthera* athera, a male; in reference to the cells of the anthers being crested).** 

—Erica species of authors.

**L. ciliata** (D. Don, in edinb. phil. journ. 17. p. 154.) —Erica species of authors.

**L. grossa**, Linn. spec. ed. 2. p. 507. 

**L. speciosa**, Linn. spec. ed. 2. p. 507.

**L. speciosa**, Linn. spec. ed. 2. p. 507.

**L. speciosa**, Linn. spec. ed. 2. p. 507.

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**L. speciosa**, Linn. spec. ed. 2. p. 507.

**L. speciosa**, Linn. spec. ed. 2. p. 507.
ERICACEÆ.

6 L. ? Loddigesii; leaves 3 in a whorl, erectely spreading; flowers terminal, by twos or threes; bracteas imbricate, angular; genitals exerted, with black corinnicate anthers. G. Native of the Cape of Good Hope. Erica spumosa, Lodd. bot. cab. 366. but not of Lin. Flowers purplish-red.


7 L. Flaggelláris; leaves 3 in a whorl, linear-lanceolate, glabrous, finely ciliated, adpressed; branches twiggly, downy; flowers terminal, usually by threes, erect; calyx bracteate, exceeding the corolla; anthers created. G. Native of the Cape of Good Hope. Erica flagelláris, Link, enum. 1. p. 365. Flowers dirty-yellow. Calyce segments lanceolate, keeled, purple.


8 L. Flaggellifórma; leaves 3 in a whorl, imbricate, smooth; flowers terminal, umbellate, erect; bracteas remote from the calyx; calyx coloured, larger than the corolla, which is urceolate; anthers almost mutic. G. Native of the Cape of Good Hope. Erica flagellifórma, Andr. eric. 4. icon. Flowers reddish-purple.


9 L. Callínóco; leaves 3 in a whorl, linear, subulate, imbricate, glabrous; flowers terminal, glomerate or capitate; bracteas imbricate; calyx coloured, rather shorter than the corolla, which is urceolate; anthers almost mutic. G. Native of the Cape of Good Hope. Erica calínóco, Bedf. eric. wob. p. 4. Erica glomerata, Andr. heath. vol. 4. Erica calyca capitáta, Hortul. Flowers purplish-red.


10 L. Gonáfilhóde; leaves 3 in a whorl, ovate, glabrous; flowers in terminal fascicles; calyces spreading, with exquisitely ciliately glandular margins; corolla 1 line long, hardly longer than the calyx; fruit smooth; stigma large, 4-cleft; anthers crested. G. Native of the Cape of Good Hope. Erica gonalífilhóde, Lin. diss. no. 25. Berg. pl. cap. 119. Thunb. diss. 75. Erica gonalífilhóde, Sal. in Lin. trans. 6. p. 397. Flowers white.


11 L. Phyllíco; leaves 3 in a whorl, imbricating in 6 rows, glabrous; flowers axillary, drooping; calyx large, elongated; anthers awned. G. Native of the Cape of Good Hope. Erica phyllíco, Willd. spec. 2. p. 361. Corolla campanulate, purple, 1-2 lines long.—Perhaps a species of Eurylypis. 


12 L. Holóseráceae; leaves 3 in a whorl, sharply reduplicate; flowers terminal; corolla 3 lines long, silky, with an ovate tube; anthers crested, hairy. G. Native of the Cape of Good Hope. Erica holóseráceae, Sal. in Lin. trans. 6. p. 352. Flowers red.

Whole-silky Lamprósis. Shrub.

13 L. Lu'cida; leaves 3 in a whorl; flowers terminal; calyx minutely ciliated, shining; corolla 1 line long; crests of anthers ear-formed, deeply serrated; stigma narrow. G. Native of the Cape of Good Hope. Erica Lucida, Sal. in Lin. trans. 6. p. 397.

Shining-calyx Lamprósis. Shrub.

14 L. Ru'n'á; leaves 3 in a whorl, imbricate; bracteas and calyces quite entire; corolla 1 line long; crests of anthers ear-formed and ciliated; fruit hairy. G. Native of the Cape of Good Hope. Erica múnda, Sal. in Lin. trans. 6. p. 337.


15 L. Fabriliis; leaves 3 in a whorl, densely imbricated; flowers terminal; corolla 1 line long, hardly longer than the calyx; crests of anthers quite entire; anthers minute. G. Native of the Cape of Good Hope. Erica fabriliis, Sal. in Lin. trans. 6. p. 338. Flowers reddish-purple.


16 L. Chlamydióflora; leaves 3 in a whorl, linear, hairy, imbricate, flowers terminal; corolla 2 lines long, hardly longer than the calyx; crests of anthers ear-formed. G. Native of the Cape of Good Hope. Erica chlamydióflora, Sal. in Lin. trans. 6. p. 338. Flowers reddish-purple.


17 L. Selagífinóflora; stem tomontose; leaves linear, 3 in a whorl; flowers terminal; corolla smooth, 1½ line long, with a globose tube; crests of anthers very broad, orbicular. G. Native of the Cape of Good Hope. Erica selagífinóflora, Sal. in Lin. trans. 6. p. 338.

Selago-leaved Lamprósis. Shrub.

18 L. Brevifólia; leaves 3 in a whorl, ovate; flowers terminal; corolla 1½ line long, hardly longer than the calyx; spurs of anthers linear, attenuated. G. Native of the Cape of Good Hope. Erica brevifólia, Sal. in Lin. trans. 6. p. 387. Erica pígra, Sol. ex Salib. Flowers red.


20 L. Modésta; leaves 3 in a whorl, densely imbricated; corolla tomentose, 3½ lines long, with a broad ovate tube and a recurved limb; flowers terminal; spurs of anthers linear, attenuated. G. Native of the Cape of Good Hope. Erica modesta, Sal. in Lin. trans. 6. p. 352. Flowers very pale red.

Modest Lamprósis. Shrub.

21 L. Paniculata; leaves 3 in a whorl, adpressed; flowers terminal, drooping; bracteas close to the calyx; corolla ovate, ventricose, equal in length to the calyx; anthers cornute; style inclosed. G. Native of the Cape of Good Hope. Erica paniculata, Lodd. bot. cab. 419. but not of Thunb. Bedf. eric. wob. p. 17. Flowers pale purplish-red.


22 L. Bedfordiana; leaves 3 in a whorl, linear, glabrous; flowers terminal; bracteas remote from the calyx; corolla ovate-campanulate; anthers awned. G. Native of the Cape of Good Hope. Erica lutéa alba, Bedf. eric. wob. p. 14. Flowers pale yellow.


23 L. Taxióflora (D. Don, in edinb. phil. journ. 17. p. 154.) leaves 3 in a whorl, trigonal, glabrous, spreading; flowers terminal, umbellate; corolla with a cone-shaped tube and a spreading limb; bracteas remote from and approaching the calyx; calyx coloured, almost equal in length to the corolla; anthers mutic. G. Native of the Cape of Good Hope. Erica taxióflora, Wendl. eric. fisc. 2. p. 19. with a figure. Bauer, pl. kew. t. 19. Andr. heath. t. 35. Erica turgida, Hortul. Flowers pale red. Leaves mucronate. Corolla 3 lines long, with ovate, cuneate, bifid segments.


24 L. Ru'n'ida; leaves 3 in a whorl, linear, glabrous; flowers 5 L 2
terminal, capitate; bracteae approximate, 3, 1 large and 2 small; calyx equal to the corolla in length, which is ovate-ventricose; anthers awned. \( \text{G.} \) Native of the Cape of Good Hope. Erica rubella, Bedd. eric. wob. p. 22. Flowers red.


* * * Leaves 4 in a whorl.

25 L. squamosa; leaves 4 in a whorl, imbricated, serrulately; flowers terminal, drooping; bracteas imbricate; calyx large, coloured, about equal in length to the corolla, which is urceolate; anthers crested. \( \text{G.} \) Native of the Cape of Good Hope. Erica squamosa, Andr. heath. 3. t. 52. Flowers pale red.

**Scaly-cupped Lamprotis.** Fl. April, July. Clt. 1794. Shrub \( \frac{1}{2} \) foot.

* * * Leaves opposite.


**Fine-leaved Lamprotis.** Fl. April, May. Clt. 1794. Shrub \( \frac{1}{2} \) foot.

27 L. luteca; leaves opposite, linear, imbricate, glabrous; flowers nearly terminal; bracteas imbricate; branches flexuous; calycine segments narrow, ovate-cuneated; corolla \( \frac{3}{4} \) lines long, oval, ventricose; fruit obovate; anthers mutic or awned. \( \text{G.} \) Native of the Cape of Good Hope. Erica luteca, Lin. diss. no. 2. mant. p. 234. Berg. pl. cap. 115. Wendl. eric. 1. p. 13. with a figure. Andr. eric. 1. t. 31. Erica imbellis, Sal. in Lin. trans. 6. p. 385. Flowers yellow.—There appears to be two species confounded under this name; one with crested or awned anthers, and another with mutic anthers.


28 L. biflora; leaves opposite, canaliculate, adpressed, glabrous; flowers terminal, twin, on short pedicels; bracteas approximating the calyx; calycine segments ovate, acute, white; anthers crested. \( \text{G.} \) Native of the Cape of Good Hope. Erica biflora, Link, emun. 1. p. 367. Lodd. bot. cab. 683. Corolla white.

**Two-flowered Lamprotis.** Fl. April, June. Clt. 1819. Shrub \( \frac{1}{2} \) foot.

29 L. borboniæfælia; leaves opposite; flowers axillary; calycine segments broad, ovate-acuminate, equal in length to the corolla, which is urceolate; fruit obovate; anthers crested or awned. \( \text{G.} \) Native of the Cape of Good Hope. Erica borboniæfælia, Sal. in Lin. trans. 6. p. 386. Flowers red, \( \frac{3}{4} \) lines long.


30 L. oppositæfælia; leaves opposite, filiform, imbricate; flowers terminal, crowded, erect; bracteas sessile; corolla urceolate, about equal in length to the calyx, which is spreading; anthers mutic. \( \text{G.} \) Native of the Cape of Good Hope. Erica oppositæfælia, Andr. heath. 3. p. 35. Lodd. bot. cab. 1343. Flowers white.

**Var. \( \beta \) rübra (Andr. heath. 3. t. 36. Lodd. bot. cab. 1060.)** flowers red.

**Opposite-leaved Lamprotis.** Fl. Spring and Autumn. Clt. 1804. Shrub \( \frac{1}{2} \) to \( \frac{3}{4} \) foot.

31 L. \( \text{ape'æra} \); leaves opposite, linear, cuspidate, erect, quite glabrous, with scarious margins; flowers terminal, aggre gate; bracteas and calyxes coloured; corolla rotate; genitals exerted; anthers mutic. \( \text{G.} \) Native of the Cape of Good Hope. Erica aperea, Spreng. syst. 2. p. 200.


32 L. rebecca; leaves opposite, or 3 in a whorl, linear, imbricate; flowers terminal, capitiate; corolla with a ventricose tube and a spreading limb; calyx about equal in length to the corolla, bracteate; anthers mutic. \( \text{G.} \) Native of the Cape of Good Hope. Erica rubella, Ker. bot. mag. 2165. Lodd. bot. cab. 658. Flowers red.


33 L. togata; leaves opposite, linear, imbricate; flowers terminal; bracteas remote from the calyx, broad; calyx coloured, large, cup-shaped; corollas urceolate, with a spreading limb; anthers mutic. \( \text{G.} \) Native of the Cape of Good Hope. Erica togata, Sims, bot. mag. 1626. Flowers fine red.

**Grown Lamprotis.** Fl. June, July. Clt.? Shrub \( \frac{1}{2} \) to \( \frac{3}{4} \) foot.

34 L. diandriæfælia; leaves opposite, long; flowers terminal; calycine segments ovate-cuneated; corolla \( \frac{3}{4} \) lines long; spurs of anthers serrated; pericarp glabrous. \( \text{G.} \) Native of the Cape of Good Hope. Erica diandriæfælia, Sal. in Lin. trans. 6. p. 338. Flowers pale purple.

**Pink-leaved Lamprotis.** Fl. April, May. Clt. 1796. Shb. 35 L. \( \text{a'phanes} \); branches hairy; leaves opposite, linear-trigonal, blunting, scabrous; flowers axillary and terminal. \( \text{G.} \) Native of the Cape of Good Hope. Erica a'phanes, Spreng. syst. 2. p. 196.


Cult. See Erica, p. 800, for culture and propagation.—Pretty little shrubs, easily distinguished from the other genera broke off from Erica by the large coloured calyx and small adpressed leaves.

XII. CALLISTA (from καλλίς, καλλίστος, very beautiful; flowers). D. Don, in edinb. phil. journ. 17. p. 155.—Erica species of authors.

**LIN. Syst. Octandria, Monogynia.** Calyx 4-parted, foliaceous. Corolla salver-shaped, with a dilated spreading 4-cleft limb, and a ventricose or cylindrical tube. Stamens inclosed; filaments capillary; cells of anthers short, dehiscent lengthwise, mutic at the base. Stigma capitellate. Capsule 4-celled, many-seeded.—Small, much branched shrubs, natives of the Cape of Good Hope. Leaves acerose, loosely imbricated. Flowers terminal, almost solitary, or in fascicles.

* Leaves 3 in a whorl.


**Var. \( \beta \) alba (Andr. heath. 3. t. 50.)** flowers white, sub-axillary, or terminating the small branches, sweet-scented.

**Fine-flowered Callista.** Fl. April, June; \( \beta \) July. Dec. Clt. 1800. Shrub 1 foot.

2 C. tetragona; leaves 3 in a whorl, linear, pointed, ciliated, erectly spreading; flowers terminating small branches; calyx bracteate, with ciliated cuspidate segments; corolla with


3 C. bacciniformis; leaves 4 in a whorl, linear, ciliated; bracteas sessile; flowers in terminal umbellate fascicles; corolla with a trumpet-shaped tube and a spreading border. \( G \). Native of the Cape of Good Hope. Erica bacciniformis, Sims, bot. mag. 2465. Lodd. bot. cab. 1127. Erica bucinniformis, Bedd. eric. wob. p. 4. Corolla red, with a white limb. Anthers cornute.


4 C. BANDONIA; leaves 3 in a whorl, linear-lanceolate, glabrous, spreading; flowers terminal, usually by threes, drooping; bracteas remote from the calyx; calyce segments broad; tube of corolla ovate, ventricose; style exerted. \( G \). Native of the Cape of Good Hope. Erica Bandonía, Andr. heath. vol. 4. Corolla red-purple.


5 C. magnifica; leaves 3 in a whorl, linear, obtuse, spreading; flowers terminal, usually by threes, drooping; bracteas remote from the calyx; calyx coloured; corolla with an ovate tube, and an erect limb; style inclosed. \( G \). Native of the Cape of Good Hope. Erica magnifica, Andr. heath. vol. 4. Corollas pale red. Anthers cornute.


6 C. Broadleyana; leaves 3 in a whorl, linear, fasciculated, spreading; flowers axillary, on long pedicels, drooping; calyce segments foliaceous, narrow; corolla ventricose, contracted at the mouth, with hardly any limb; style exerted. \( G \). Native of the Cape of Good Hope. Erica Broadleyana, Andr. heath. vol. 4. Flowers red.


8 C. celiana; glabrous; leaves 3 in a whorl; flowers terminal; bracteas remote from the calyx; corolla with a glabrous tube; style exerted. \( G \). Native of the Cape of Good Hope. Erica celiana, Lodd. bot. cab. 1777. Corollas with a pale red tube and a deep red border.


9 C. armata; leaves 3, sometimes 5, in a whorl, linear, erect, spinulose; flowers terminal, aggregate, clothed with yellow stripe; calyce segments foliaceous, spinose; style exerted. \( G \). Native of the Cape of Good Hope. Erica armata, Spreng. syst. 2. p. 184.


10 C. Humeana; leaves 3 in a whorl, linear, glabrous; flowers terminal, by threes; bracteas sessile, corolla with a short ventricose tube, and a large limb; style exerted. \( G \). Native of the Cape of Good Hope. Erica Humeana, Lodd. bot. cab. 589. E. Humea, Hortul. Corolla with a red tube, reddish-purple segments, and a dark eye.


11 C. carinula; leaves 3-4 in a whorl, linear, glabrous; flowers terminal, racemose; calyx bracteate; corolla with an inflated tube, and a short limb. \( G \). Native of the Cape of Good Hope. Erica carinula, Lodd. bot. cab. 926. Flowers pale red.


12 C. Sainsburyana; leaves 3 in a whorl, filiform, elongated, glabrous, erectly spreading; flowers terminal, umbellate; bracteas remote from the calyx; corolla oblong-ovate, with a short limb; anthers awned. \( G \). Native of the Cape of Good Hope. Erica Sainsburyana, Andr. heath. vol. 4. Flowers pale red. Style a little exerted.


13 C. Comptoniana; leaves 3 in a whorl, subulate, glabrous, spreading, recurved; flowers terminal, aggregate, pedicellate. \( G \). Native of the Cape of Good Hope. Erica Comptoniana, Andr. heath. vol. 4. Style inclosed.


14 C. infundibuliformis; leaves 4 in a whorl, filiform, obtuse, glabrous, erect; flowers terminal, aggregate; bracteas sessile; corolla with a slender tube, and large segments. \( G \). Native of the Cape of Good Hope. Erica infundibuliformis, Link. enum. 1. p. 364. Andr. heath. vol. 4. Lodd. bot. cab. 589. Flowers pale red, or pale purplish-red. Style inclosed.


15 C. variata; leaves 3 in a whorl; flowers terminal; bracteas approximating the corolla; corolla short, with revolute segments; style exerted. \( G \). Native of the Cape of Good Hope. Erica variata, Lodd. bot. cab. 1325. Erica Cassonii, Hortul. Flowers purplish-red.


16 C. undulata; glabrous; leaves 3-4 in a whorl; flowers terminal, by fours, sessile; corolla with an elongated, ventricose, twisted tube, and a spreading limb. \( G \). Native of the Cape of Good Hope. Erica undulata, Lodd. bot. cab. 1792. Flowers deep red.


** Leaves 4 in a whorl.

17 C. pregnans; leaves 4 in a whorl, linear, ciliated, spreadingly recurved; flowers terminal, crowded; bracteas remote from the calyx; calyce segments acute; corolla ventricose at the base. \( G \). Native of the Cape of Good Hope. Erica pregnans, Andr. heath. 3. t. 32. Lodd. bot. cab. 945. Corolla pale red, almost white. Very like C. ventricosa, and probably only a variety of it. Style inclosed.


18 C. metuleflora; leaves 4-5 in a whorl, subulate, spinulose-ciliated; flowers terminal, umbellate; bracteas remote from the calyx; corolla ventricose at the base. \( G \). Native of the Cape of Good Hope. Erica metuleflora, Sims, bot. mag. t. 612. Andr. heath. 3. t. 53. Lodd. bot. cab. 1763. Flowers red, with a paler border. Style a little exerted.


19 C. acuminata; leaves 4 in a whorl, trigonal, cuspidate, recurved; flowers terminal, nearly sessile, aggregate; calyce segments acuminate; corolla with an inflated acuminate tube, and a short revolute limb; bracteas close to the calyx. \( G \). Native of the Cape of Good Hope. Erica acuminata, Andr. heath. 3. t. 54. Lodd. bot. cab. t. 216. Flowers reddish-purple. Style inclosed.


20 C. ferruginea; leaves 4 in a whorl, linear, ciliated, with rusty hairs; flowers terminal, umbellately verticillate, horizontal; calyx bracteate, with the segments bearded at the
apex; filaments terminating in a flat glandular substance; corolla with an acuminated inflated tube. \( \eta \). G. Native of the Cape of Good Hope. Erica ferruginea, Andr. heath. 3. t. 57. Corolla with a red tube, and a greenish-yellow limb; but in the figure given by Andrews it is white, tipped with red. Style included.


21 C. hyacintoides; leaves 4 in a whorl, shining, spreading; flowers aggregate; calyx bracteate, having the segments serrated or ciliates; corolla with a ventricose tube. \( \eta \). G. Native of the Cape of Good Hope. Erica hyacintoides, Andr. heath. 3. t. 158. Ait. hort. kew. 2. p. 384. Flowers red. Style sub-exserted.


22 C. fastigiata; leaves 4 in a whorl, shining, erect, imbricated; flowers terminal, crowded, sessile; bracteates serrated; calyce segments serrated; corolla with a narrow tube. \( \eta \). G. Native of the Cape of Good Hope. Erica fastigiata, Lin. diss. no. 44. mant. 66. Thunb. diss. no. 37. Andr. heath. 2. t. 57. Lodl. bot. cab. t. 267. Erica falcifórmis, Sal. in Linn. trans. 6. p. 382. Corolla white, with the limb mealy inside, according to Sal. 1. c. In bot. mag. t. 2084. the corollas are painted pale red; it is therefore perhaps a distinct species.


23 C. Pellenicida; leaves 4 in a whorl, linear, attenuated; stem slender; flowers terminal; calyce segments spatulate, serrated; corolla 5–6 lines long, having the limb 3 times shorter than the tube. \( \eta \). G. Native of the Cape of Good Hope. C. pellenicida, Don, in edinb. phil. journ 17. p. 155. Erica Walkeria, Andr. heath. 1. t. 42. Lodl. bot. cab. 256. E. pulechra, Sal. in Linn. trans. 6. p. 384. Flowers pink or pale red. Style included.

**Pellenicid-flowered Callista.** Shrub.

24 C. Walkeriana; stem glabrous; leaves 4 in a whorl, linear, shining; flowers terminal, almost sessile; bracteates approximating the calyx, ciliates; calyce segments lanceolate, serrated; corolla 4–5 lines long, with an ovate ventricose tube, and a wide-spreading limb, which is doubly shorter than the tube. \( \eta \). G. Native of the Cape of Good Hope. C. pellenicida, D. Don, in edinb. phil. journ 17. p. 155. Erica Walkeria, Andr. heath. 1. t. 42. Lodl. bot. cab. 256. E. pulechra, Sal. in Linn. trans. 6. p. 384. Flowers pink or pale red. Style included.


25 C. denticulata (D. Don, in edinb. phil. journ 17. p. 155.) stem pubescent; leaves 4 in a whorl, linear, glabrous; flowers terminal, fastigiate; bracteates remote from the calyx; calyce segments obcurved, serrated; corolla 3 lines long, with a cylindrical tube: having the limb one-half shorter than the tube. \( \eta \). G. Native of the Cape of Good Hope. Erica denticulata, Lin. ment. p. 22. Erica dentata, Thumb. diss. no. 39. Erica denticularius, Sal. in Linn. trans. 6. p. 384. Erica primuloides, Wendl. Flowers purple.

**Denticulate-calyx Callista.** Fl. April, May. Clt. 1821. Shrub 1 foot.

26 C. Bedfordiana; leaves 4 in a whorl, linear; flowers terminal; bracteates sessile; calyce segments deeply serrated or toothed; corolla with an ovate ventricose tube. \( \eta \). G. Native of the Cape of Good Hope. Erica denticulata, Bedff. hort. wob. p. 8. Lodl. bot. cab. 1090. But not of Lin. nor others. Flowers yellow. Style a little exserted.

**Bedford’s Callista.** Fl. May, June. Clt.? Shrub.

27 C. Templeana; leaves 4 in a whorl, linear, ciliated; flowers terminal, almost sessile; bracteates approximating the calyx, ciliates, as well as the calyce segments; anthers curved; corolla with an oblong ventricose tube, and a small limb. \( \eta \). G. Native of the Cape of Good Hope. Erica Templea, Hort. Badf. eric. wob. p. 24. pl. 4. f. 17. Corolla about the size and shape of those of C. ventricosa, pale red, or reddish-purple. Style included.


28 C. comosa (D. Don, in edinb. phil. journ. 17. p. 155.) stem pubescent; leaves 4 in a whorl, linear, short, erectly spreading; flowers terminal, tufted; bracteates imbricate, and are ciliated as well as the calyce segments, coloured; corolla with an ovate ventricose tube. \( \eta \). G. Native of the Cape of Good Hope. Erica comosa, Andr. heath. 2. t. 54. Erica transpârens, Berg. pl. cap. p. 108. Erica galiforma, Sal. in Linn. trans. 2. p. 583. Flowers small, white, with dark anthers. Style included.

**Var. \( \beta \), rubra (Andr. heath. 2. t. 55.) corollas red. \( \eta \). G. Erica comosa, Lin. diss. no. 48. mant. p. 234. Thunb. diss. no. 38. Bauer, icon. hort. kew. t. 18.

**Tufted Callista.** Fl. April, Aug. Clt. 1787. Shrub 2 1/2 ft.

29 C. ventricosa (D. Don, in edinb. phil. journ. 17. p. 155.) leaves 4 in a whorl, short, acerose, semi-cylindrical, and are ciliated as well as the calyces and bracteates: flowers the broadest; flowers disposed in terminal umbellate fascicles; bracteates remote from the calyx; corolla with a ventricose tube. \( \eta \). G. Native of the Cape of Good Hope. Erica ventricosa, Thumb. diss. no. 36. with a figure. Andr. heath. 1. t. 28. Curt. bot. mag. t. 350. Wendl. eric. fasc. 3. p. 11. Bedff. eric. wob. pl. 4. f. 18. a. Lodl. bot. cab. 431. Erica venustula, Sal. in Linn. trans. 6. p. 385. Pedicsules bracteiatae below the middle. Corolla waxy, purplish-red. Style included.

**Var. \( \beta \), cocinea; flowers reddish-purple.**

**Var. \( \gamma \), stellifera; flowers purplish-red.**

**Var. \( \epsilon \), cárnea; flowers pale red.**

**Var. \( \varepsilon \), alba; flowers very pale red, almost white.**

**Var. \( \varepsilon \), supérba; flowers deep red.**

**Var. \( \eta \), crética; erect; flowers pale red.**

**Var. \( \zeta \), nína; dwarf; flowers pale red.**

**Ventricosa-flowered Callista, or Porcelain Heath.** Fl. April, Sept. Clt. 1787. Shrub 1 to 2 feet.

30 C. infestata; leaves 4 in a whorl, glabrous, linear; flowers in terminal umbellate fascicles; corolla with an elongated, ovate, ventricose tube, and a short limb; pedicels bracteate below the middle; calyce segments subulate. \( \eta \). G. Native of the Cape of Good Hope. Erica infestata, Thumb. diss. no. 67. with a figure. Erica amábilis, Sal. in Linn. trans. 6. p. 385. Erica glábula, Link. enun. 1. p. 362. Corolla large, with a reddish-purple base, and a green top. Anthers corniculate at the base.


31 C. muscari; leaves 4 in a whorl, linear-trigonal, glabrous, spreading; flowers terminal, sessile, usually by fours; bracteates approximating the calyx, leaf-like; calyce segments subulate; corolla ovate-ventricose, with a short obtuse revolute limb. \( \eta \). G. Native of the Cape of Good Hope. Erica muscari, Andr. heath. 1. t. 41. Ait. hort. kew. 2. p. 395. Wendl. eric. fasc. 18. p. 95. with a figure. Erica frángrans, Sal. in Linn. trans. 4. p. 383. Stem glabrous. Flowers small, pale yellow or yellowish-green. Corolla flat at the base. Fruit obpyramidal.

**Musk-scented Callista.** Fl. March. Clt. 1790. Shrub 1 foot.

32 C. lawsonii; leaves 4 in a whorl, filiform, spreading, ciliated; flowers terminal; bracteates sessile; corolla with a cylindrical tube, which is ventricose at the base; calyce segments narrow. \( \eta \). G. Native of the Cape of Good Hope. Erica Lawsonia, Andr. heath. vol. 4. icon. Sims, bot. mag. 1720. Lodl. bot. cab. 488. Erica Kennédia, Hort. Flowers red.
Lawson's Callista. Fl. Sept. Clt. 1802. Shrub 1 foot. 33 C. Daphniiflora; leaves 4 in a whorl, short, glabrous, acerose, erectly spreading; bracteas sessile; calycine segments lacerated a little; flowers terminal, usually by fours; corollas with an ovate ventricose tube, and a spreading obute limb. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica daphniiflora, Lodd. bot. cab. 543. Bedf. eric. wob. p. 7. Flowers small, white or red. Style exerted.

Daphne-flowered Callista. Fl. April, June. Clt. 1791. Shrub 1 foot. 35 C. Daphnoïdes; leaves 4 in a whorl, linear, glabrous; flowers terminal by fours; bracteas sessile; corolla with an ovate ventricose tube and a large limb. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica daphnoïdes, Lodd. bot. cab. 154. Erica mirabilis, Hortul. Flowers pale red. Style a little exerted.

Daphne-like-flowered Callista. Fl. May, June. Clt. 1800. Shrub 1 to 2 feet. 37 C. Coventryana; leaves 4 in a whorl, linear-trigonal, ciliated, as well as the calyces and bracteas; flowers terminal, aggregate, sessile; bracteas sessile; calycine segments foliaceous, narrow; corolla with a slender tube, and large segments. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica Coventrya, Andr. heath. 4. icon. Lodd. bot. cab. 423. Corolla with a greenish-yellow tube, and a red limb, with ovate segments. Style a little exerted.

Lord Coventry's Callista. Fl. July, Sept. Clt. 1800. Sh. 36 C. Verucunda; leaves 4 in a whorl, linear, obtuse; flowers lateral, verticillate; corolla with a ventricose tube, and a spreading limb. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica verucunda, Lodd. bot. cab. 1827. but not of Sal. Flowers red.

Reddish-flowered Callista. Fl. Spring, Autumn. Clt. 1820. Shrub 1 foot. 37 C. Stellifera; leaves 4 in a whorl, linear-lanceolate, subulate, pilose, spreading; flowers axillary and terminal, racemose, erect; bracteas remote from the calyx; limb of corolla 6-cleft. \( \ddot{g} \). G. A hybrid. Erica stellifera, Andr. heath. vol. 4. Lodd. bot. cab. 1622. Flowers reddish-purple.

Star-bearing Callista. Fl. April, July. Clt. 1800. Shrub. 38 C. Fræstans; leaves 4 in a whorl, linear, erect, glabrous; flowers terminal, aggregate; bracteas sessile, smooth; calycine segments ovate, cuspitate, with scariosly hardly serrated edges; corolla, with a ventricose tube, and a recurvedly reflexed limb. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica fræstans, Andr. heath. vol. 4. Lodd. bot. cab. 1595. Erica daphniiflora, Sal. in Lin. trans. 6. p. 384. Corollas white. Style exerted.

Exscissilis Callista. Fl. June, Nov. Clt. 1810. Shrub 1 foot. 39 C. Mündula; leaves 4 in a whorl, subulate, spreading, shining, glabrous; flowers terminal, usually by fours, sessile; bracteas sessile; calyx naked; corolla with a short narrow tube, and a wide limb; style inclosed. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica mündula, Andr. heath. vol. 4. Lodd. bot. cab. 114. Flowers reddish-purple.

Near Callista. Fl. Oct. Feb. Clt. 1810. Shrub. 40 C. Rigidula; glabrous; leaves 4 in a whorl, linear, spreading; flowers terminal, pedicellate; corolla ventricously tubular, with a blunt border; pedicels red; bracteas remote from the calyx. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica rigidula, Lodd. bot. cab. 256. Erica metuleflora bicolor, Bedf. eric. wob. p. 15. Corolla red. Limb short, white.

Stiff Callista. Fl. July, Aug. Clt. 1820. Shrub 1 foot. 41 C. Tröstula; leaves 4 in a whorl, linear, glabrous; flowers terminal; bracteas approximating the calyx; corolla with an ovate ventricose tube. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica tröstula, Lodd. bot. cab. 1742. Flowers white.

Var. \( \beta \), rubra; flowers red.

Spruce Callista. Fl. May, July. Clt. 1806. Shrub. 42 C. Struthioleflora.—This species has not yet been described or figured. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica struthioleflora, Lodd. bot. cab. p. 25.

Struthiola-flowered Callista. Shrub. 43 C. Cliffordiana; leaves 4 in a whorl, glabrous; flowers terminal; bracteas rather remote from the calyx; corolla with a slender ventricose tube; style inclosed. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica Cliffordiana, Lodd. bot. cab. 34. Flowers white.

Lady De Clifford's Callista. Fl. April, May. Clt. 1812. Shrub. 44 C. Pavetteflora; leaves 4 in a whorl, linear; flowers terminal; pedicels very short; corolla 9-10 lines long, having the limb mealy inside; filaments spurred near the top of the anthers. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica pavetteflora, Sal. in Lin. trans. 6. p. 382. Erica infundibuliformis, Roxb. mss.

Pavetta-flowered Callista. Fl. May, Aug. Clt. 1800. Shrub. 45 C. Spuriflora; stem pubescent; leaves 4 in a whorl, linear; flowers terminal; calycine segments cuneate, serrated; corolla 8 lines long, with the limb one-half shorter than the tube; spurs of anthers very minute, ear-formed. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica nidiflora, Sal. in Lin. trans. 6. p. 383. Erica denticulata, Roxb. mss.


Parmentier's Callista. Fl. April, June. Clt. 1810. Shrub 1 foot. 47 C. Moschata; glabrous; leaves 4 in a whorl?; flowers terminal; corolla short, with a ventricose tube, and a small spreading limb. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica moschata, Andr. heath. 4. icon. Lodd. bot. cab. 614. Corollas yellow.

Musky Callista. Fl. May, July. Clt. 1805. Shrub. 48 C. Calóstoma; glabrous; leaves linear, 4 in a whorl; flowers terminal, crowded; corolla with a ventricose elongated tube, a dark neck, and a white limb. \( \ddot{g} \). G. Hybrid. Erica calóstoma, Lodd. bot. cab. 1759.

Beautiful-mouthed Callista. Fl. May, June. Hybrid Shrub. 49 C. Russelliana; leaves 4 in a whorl, linear, glabrous; flowers terminal; bractea remote from the calyx; corolla ovate-globose, with large open segments. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica Russelliana, Lodd. bot. cab. 1013. Bedf. eric. wob. p. 22. Flowers reddish-purple.

Duke of Bedford's Callista. Fl. June, July. Clt. 1820. Shrub. 50 C. Venusta; leaves 4 in a whorl, ciliated; flowers terminal, sessile; bracteas sessile, premonere, membranous, ciliated, as well as the calyces; corolla ovate, ventricose, with broad segments. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica venusta, Hortul.


*** Leaves 5-6 in a whorl.

51 C. Blanda; leaves 6 in a whorl, spreadingly reflexed, imbricate; flowers terminal, umbellate, horizontal; calyx bracteate; genitals little exerted; corolla with an oblong tube, and small border. \( \ddot{g} \). G. Native of the Cape of Good Hope. Erica blanda, Andr. heath. 3. t. 34. Flowers reddish-purple or bluish.—Perhaps a species of Syringodea. Style exerted.


53 C. Swainsonii; leaves 5-6 in a whorl, linear, obtuse, crowded, erect; flowers terminal, umbrellate; bracteas sessile; calyce segments lanceolate; corolla with a cylindrical furrowed tube, and a spreading border; anthers somewhat exerted. L. G. Native of the Cape of Good Hope. Erica Swainsonii, Andr. hearth. 3. t. 65. Flowers reddish-purple or buff-red.


54 C. quadranguláris; leaves recurved, glabrous, scattered; flowers terminating small branches; bracteas sessile; corolla with a 4-angled tube, winged; style exerted. L. G. Native of the Cape of Good Hope. Erica quadranguláris, Andr. hearth. vol. 4. with a figure. Erica erosá, Lodd. bot. cab. 153. Bedf. eric. wob. pl. 2. t. 2. Corolla with a purplish-red tube, and a white crenulated limb.


Cult. For culture and propagation see *Erica,* p. 800.—Elegant shrubs when in bloom. The wood being harder than that of the species of *Erica,* cuttings are more difficult to root.

XIII. EURYLOMA (from *euroe, eury, wide, and *loma, *loma, a margin; in reference to the wide limb of the corolla). D. Don, in edinb. phil. journ. 17. p. 155.—Erica species of authors.

Lin. syst. Octandria Monogyinia. Calyx 4-parted, foliaceous. Corolla salver-shaped, with an elongated filiform or ventricose tube, and a 4-parted dilated limb. Stamens inclosed; filaments dilated, membranous, channelled; anthers bispurate; cells of anthers membranous, dehiscing longisectionally; and drawn out at the base into a short tumid spur. Stigma with an elevated 4-lobed disk. Capsule 4-celled, many-seeded.—Diffusely branched shrubs, natives of the Cape of Good Hope. Leaves adpressed, semi-cylindrical, minutely denticulated. Flowers terminal, solitary or by threes, large, showy, on short pedicels, clanny.

* Leaves 3 in a whorl.

1 E. Aitoni (D. Don, l. c.) leaves 3 in a whorl, linear, serrulat., erect; flowers terminal, usually by threes; bracteas remote from the calyx; corolla viscid, with a cylindrical tube, which is ventricose at top, and large ovate segments; style exerted. L. G. Native of the Cape of Good Hope. Erica Aitoni, Andr. 1. t. 25. Curt. bot. mag. 429. Erica Aitoniana, Ait. hort. kew. 2. p. 372. Lodd. bot. cab. 144. Erica Aitoni, Wildl. spec. 2. p. 398. Erica jamaijinóra, Sal. in Lin. trans. 6. p. 382. Corolla pale red, or nearly white, 16 to 19 lines long.


2 E. jamaijinóra (D. Don, l. c.) leaves 3 in a whorl, linear-oblong, serrulat, recurved, imbricated in 6 rows; flowers terminal, aggregate; bracteas ciliated, remote from the calyx; corolla viscid, with an ovate tube, which is ventricose at the apex, and ovate segments; style exerted. L. G. Native of the Cape of Good Hope. Erica jamaijinóra, Andr. hearth. 1. t. 26. Erica lageneacteó, Sal. in Lin. trans. 6. p. 382. Corolla 12-14 lines long, with a reddish tube, and a yellowish-green border.

* Var. β, álba; flowers pure white.


3 E. trícolor; leaves 3 in a whorl, linear, recurved, ciliated, as well as the bracteas and calyces; the terminating hairs the longest; pedicels bibracteate near the base; flowers terminal, usually about 3 together; corolla viscid, with a large ventricose tube, and ovate-cordate slightly crenulately segments; style exerted. L. G. Native of the Cape of Good Hope. Erica tricolor, Nois. Bedf. hort. eric. wob. p. 26. Corolla red at the base, white, at top, but greenish-yellow below the contraction of the limb.

* Var. β, major (Bedf. eric. wob. p. 26.) leaves adpressed, shortly ciliated; corolla oblong, inflated, with a red tube and segments, and yellowish-green below the contraction.

* Var. γ, dumíosa; leaves long-ciliated, recurved; corolla with an ovate-oblong inflated tube. L. G. Corolla with a red tube, a greenish-yellow contraction, and white segments. Bedf. eric. wob. p. 25. t. 4. f. 17.

* Var. δ, minor (Bedf. eric. wob. p. 26.) leaves 4 in a whorl; style inclosed; corolla inflated, ventricose. L. G. Corolla with a red tube, greenish-yellow, and red segments.


4 E. mirábilis; leaves 3 in a whorl, obtuse; flowers terminal, disposed in umbellate fascicles; corolla viscid; with a ventricose base, a contracted neck, and a wide-spreading border. L. G. Native of the Cape of Good Hope. Erica mirabilis, Lodd. bot. cab. 1804. Corollas white, tinged with red.


5 E. ampulláceá; leaves 3-4 in a whorl, lanceolate, ciliated, reflexed; flowers terminal, usually by fours; bracteas approximating the calyx; ciliated, as well as the calyce segments; corolla viscid, with a ventricose tube, ribbed neck, and ovate-cordate slightly crenulately obtuse segments; style exerted. L. G. Native of the Cape of Good Hope. Erica ampulláceá, Curt. bot. mag. 303. Andr. hearth. 1. t. 29. Lodd. bot. cab. 508. Erica ampulóspórrm, Sal. in Lin. trans. 6. p. 381. Leaves imbricate at the base, moderately spreading at top. Corolla 8-10 lines long, red. Anthers incurved at top.


6 E. Irby'íana; leaves 3 in a whorl, cuspidate, with scabrous margins, erect; bracteas remote from and approximating the calyx; flowers terminal, umbrellate; corolla viscid, with a cylindrical ventricose tube, and large segments; style exerted; anthers mutic. L. G. Native of the Cape of Good Hope. Erica Irby'íana, Andr. hearth. 3. t. 25. Lodd. bot. cab. 816. Flowers white.

* Var. β, rúbra; flowers reddish-purple.


7 E. nota'bilis; leaves linear-oblong, 3 in a whorl, serrulately ciliated, short, adpressed; branches slender, flexuose; flowers small, terminal, aggregate, viscid; corolla tubular, with a constricted neck, and small limb. L. G. Native of the Cape of Good Hope. Erica nota'bilis, Wendl. Licht. ex Sprng. syst. 2. p. 184. Style inclosed.


8 E. curvifólia; leaves 3 in a whorl, recurved, ciliated; spikes coarctate; corolla 4 lines long, viscid, with an ovate pyramidal tube; spurs of anthers linear-attenuated; pericarpy hairy. L. G. Native of the Cape of Good Hope. Erica curvifólia, Sal. in Lin. trans. 6. p. 380. Flowers lateral.

Cured-leafed Euryloma. Shrub.

9 E. Shannonína; leaves 3-4 in a whorl, stiff, spreading,
ERICACEÆ. XIII. Euryloma. XIV. Chona.

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ending each in a hair; flowers terminal, umbellate, drooping; calyx coloured; bracteas remote from the calyx; corolla with a ventricose ribbed tube; style exerted. 迤 G. Native of the Cape of Good Hope. Erica Shannonii, Andr. heath. vol. 4. Erica Shannoniana, Lodd. bot. cab. 168. Spreng. syst. 2. p. 185. Flowers red.

* * Leaves 4 in a whorl.

10 E. Hartnelli; leaves 4 in a whorl, lanceolate, imbricated, finely ciliated; the terminating hairs the longest; corolla viscid nearly tubular, rather ventricose at the base, with ovate-triangular lobes. 迤 G. Native of the Cape of Good Hope. Erica Hartnelli, Roll. cat.


11 E. ampullacea; leaves 4 in a whorl, ciliated; flowers terminal; bracteas remote from the calyx; corolla with a ventricose curved tube. 迤 G. Native of the Cape of Good Hope. Erica ampullacea, Bedd. eric. wob. p. 2. Erica ampullacea, Hort. Corolla with a red tube, and a greenish-yellow neck.


12 E. prinsae; leaves 4 in a whorl, linear, ciliated, recurved; flowers terminal, umbellate; bracteas approximating the calyx, ciliated, as well as the calycine segments; corolla viscid, with a ventricose tube, and a hairy top; style inclosed. 迤 G. Native of the Cape of Good Hope. Erica prinsae, Andr. heath. 2. t. 44. Lodd. bot. cab. 647. Corollas reddish-purple.

Var. b., carnea; flowers pale red.


Var. b., alb; corolla white, Sal. I. c.


14 E. capax; leaves 4 in a whorl, ovate-cuneated; flowers terminal; corolla viscid, 8-10 lines long, with a flask-formed tube, and retuse segments. 迤 G. Native of the Cape of Good Hope. Erica capax, Sal. in Lin. trans. 6. p. 381. Erica praegnans, Sal. ms.


15 E. arista; leaves 4-5 in a whorl, oblong, subsecund, hispid, imbricated, awned at the apex; flowers terminal; bracteas approximating the calyx; corolla inflated upwards with revolute projecting segments: calycine segments obtuse. 迤 G. Native of the Cape of Good Hope. Erica arista, Andr. heath. 3. t. 28. Curt. bot. mag. t. 1449. Ait. hort. kew. 2. p. 384. Bedd. eric. wob. p. 2. pl. 2. t. 11. Lodd. bot. cab. 73. Corollas reddish-purple, with a paler limb.


16 E. aristella; leaves 4 in a whorl, hispid, awned, imbricated, subsecund; flowers terminal; bracteas approximating the calyx; corolla with an oblong acuminate tube; anthers mutic. 迤 G. Native of the Cape of Good Hope. Erica aristella, Bedd. eric. wob. p. 2. Erica aristata minor, Hort. Corolla reddish-purple.

Small-awned Euryloma. Fl. June, July. Clt. 1806. Shrub. 17 E. obbata; leaves 4 in a whorl, linear, ciliated, secund; flowers terminal; bracteas approximating the calyx, ciliated, as well as the calyxes; corolla viscid, with a globose-ventricose ribbed tube, and spreading obtuse segments. 迤 G. Native of the Cape of Good Hope. Erica obbata, Andr. heath. 2. t. 33. Corolla with a reddish-purple tube, a greenish-yellow neck, and a pale limb?

** Leaves 6 in a whorl.

19 E. squarrosa; leaves 6 in a whorl, squarrosely recurved; flowers terminal; corolla viscid, 5-6 lines long, with an ovate pyramidal tube, and an obtuse limb; anthers smooth; spurs marginal. 迤 G. Native of the Cape of Good Hope. Erica squarrosa, Sal. in Lin. trans. p. 380. Leaves very dense.


21 E. recurvata; leaves 6 in a whorl, linear, flexuous, recurved; flowers terminal, nearly sessile, drooping, capitate; bracteas sessile; corolla curved, ovate-oblong; style exerted; anthers mutic. 迤 G. Native of the Cape of Good Hope. Erica recurvata, Andr. heath. vol. 4. Flowers pale red.

Recurred-leaved Euryloma. Fl. April, June. Shrub.

22 E. crinita; leaves crowded, lanceolate, terminated each by a hair; flowers nearly terminal, drooping; pedicels red; corolla cylindrical, contracted at the neck. 迤 G. Native of the Cape of Good Hope. Erica crinita, Lodd. bot. cab. 1432. Corolla purplish-red, with a pale border.


Cult. For culture and propagation see Erica, p. 800. Most elegant shrubs when in blossom. The wood of the species being more hard than that of Erica, the cuttings do not strike so freely.

XIV. CHO'NA (from χόνα, chone, a funnel; from the figure of the corolla). D. Don, in edinb. phil. journ. 17. p. 155.—Erica species of authors.


ERICACEÆ. XV. SYRINGODEA.

Var. β, longiflora (Andr. heath. 3. t. 4.) flowers longer and more tubular, blood-red.

Bloodily-flowered Chona. Fl. year. Clt. 1799. Shrub 1 to 2 feet. Cult. For culture and propagation see Erica, p. 800.

XV. SYRINGODEA (from *syropt*, syrinz, a pipe; in reference to the long tubular corollas). D. Don, in edinb. phil. journ. 17. p. 155.—Erica species of authors.

Lin. syst. Ocständeria, Monogynia. Calyx 4-leaved, glamous. Corolla long, tubular, usually rather dilated at top, rarely a little contracted; limb short, 4-lobed. Stamens for the most part included; filaments capillary; anthers bipartite; cells of anthers short, obtuse, mucous or aristate at the base, distilling by an oblong foramen. Stigma simple or capitate, and in some species annulated, with an elevated disk. Capsule 4-celled, many-seeded. Seeds oval, compressed, smooth.—Erect shrubs, natives of the Cape of Good Hope. Leaves loose, acerose. Flowers large, showy, crowded at the tops of the branches on every side, disposed in something like spikes.

§ 1. Anthers mutic at the base. Normal species.

* Leaves 3 in a whorl.

1 S. costata; leaves bluish, downy, spreading; flowers terminal, by threes; bracteas close to the calyx; calycine segments serratulate; corolla glabrous, curved, ribbed; style a little exserted. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica costata, Andr. heath. 1. t. 40. Corolla pale red, with a greenish border.

Var. β, supérba (Andr. heath. vol. 4.) corolla larger, reddish-purple, with a greenish-yellow mouth.


2 S. diaphanà; leaves spreading, glabrous; flowers terminal, by threes, pendulous, glabrous; bracteas foliaceous, close to the calyx; calyxes obtuse, foliaceous; corolla with a clavate inflated tube; style exserted. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica diaphana, Spreng. syst. 2. p. 178. Corollas deep reddish-purple.


3 S. clavátà; leaves erect; flowers terminal, by threes, drooping; bracteas close to the calyx, adpressed; genitals exserted a little. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica clavata, Andr. heath. 3. t. 40. Corolla green, cylindrically clavate. Anthers black.


4 S. faléns; leaves linear, hoary, spreading; flowers disposed in terminal racemes, horizontal; bracteas close to the calyx. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica pallens, Andr. heath. 3. t. 45. Corolla sulphur-coloured.


5 S. dìcrhus; leaves 3-4 in a whorl, villous; flowers terminal, by threes; bracteas close to the calyx; calyxes coloured, ciliated; corolla cylindrical; style exserted. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica dichrus, Spreng. syst. 2. p. 170. Erica biolor, Andr. heath. 2. t. 39. Lodgd. bot. cab. 1001, but not of Thumb. nor Willd. Erica dichromata, Lodgd. bot. cab. 1813. Corolla purplish-red, with a greenish-yellow mouth.


6 S. linkeana (D. Don, l. c.) leaves ciliated, spreading; flowers axillary, numerous, nearly sessile, horizontal; calyces clavate, downy or villous; bracteas close to the calyx, and are as well as the calycine segments serrate; style subexserted. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica Linneana, Lodgd. bot. cab. 102. Erica Linneana, Andr. heath. 2. t. 34. Erica perspicua, Bölt. Hort. kew. 2. p. 371. Corolla white, with a red base. Anthers bearded on the back at top. In this and S. abietina the ovarium is 6-8-celled.

Var. β, supérba (Lodd. bot. cab. 1778.) flowers large, white tinged with red, erect. \( \text{h. G.} \) Erica Bedfordiana, G. Don, in Loud. Hort. brit. p. 147.


7 S. versicolor; leaves glabrous, spreading; flowers terminal, by threes; calyces coloured; bracteas close to the calyx, cylindrical, as well as the calycine segments; corolla nearly cylindrical; style exserted. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica versicolor, Andr. heath. 1. t. 39. Lodgd. bot. cab. 208. Corolla purplish-red, with a greenish-yellow mouth.

Var. β, major (Lodd. bot. cab. 1816.) flowers larger.


8 S. triphylla; leaves glabrous, spreading; flowers terminal, 2-3 together, on short pedicels; bracteas approximating the calyx; calyx foliaceous, spreading; anthers inclosed; style exserted. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica triphylla, Link. enum. 1. p. 360. Corolla clammy, red, yellow at top.

Three-leaved Syringodea. Fl. July, Nov. Clt. 1822. Shb. 9 S. Broadleyana; leaves linear, spreading; flowers axillary, on long pedicels, drooping; calycine segments narrow, foliaceous; bracteas remote from the calyx; style exserted. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica Broadleyana, Andr. heath. 3. t. 44. Corolla deep red, with a yellow mouth. Anthers mutic.


10 S. insúlsa; leaves 3 in a whorl; flowers terminal; bracteas close to the calyx, foliaceous; corolla with a cylindrical incurved tube, and ciliated segments; style a little exserted; \( \text{h. G.} \) Native of the Cape of Good Hope. Erica insulsæ, Hort. Bedd. eric. wob. p. 12. Loddg. cab. p. 25. Flowers yellowish-green.


* * Leaves 4 in a whorl.

11 S. repulgens; leaves glabrous, spreading; flowers terminal, drooping, by fours; calyxes coloured, subulate, adpressed; style exserted. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica repulgens, Andr. heath. vol. 4. with a figure. Corollas scarlet or deep purplish-red.


12 S. transhærens; leaves ovate-cuneated, shortly pectinated; calycine segments cuneated; corolla 6-7 lines long, bristly towards the apex outside; filaments spurred. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica transhærens, Thunb. prod. p. 71. Erica cerinoides γ, Thunb. disp. no. 33. Erica strigilifolia, Sal. in Lin. trans. 6. p. 367. Corollas white.\)


13 S. fellúcida; leaves linear, horizontal, ciliated; flowers terminal, pedicellate, drooping; bracteas close to the calyx; corolla with an oblong inflated tube, subpellucid; style exserted. \( \text{h. G.} \) Native of the Cape of Good Hope. Erica fellúcida, Andr. heath. 3. t. 60. Lodgd. bot. cab. 276. Corolla white. Calycine segments linear-subulate. Var. β, rābra (Bedd. eric. wob. p. 18. but not of Andr.) co-
rolla reddish-purple, with an inflated ribbed tube. Calycine segments linear-subulate.


14 S. **Bedfordiana**; leaves linear, ciliated; flowers terminal, pedicellate, drooping; bracteas remote from and approximating the calyx; corolla cylindrical, curved; style subexcrescent. \( \text{H.} \) G. Native of the Cape of Good Hope. *Erica pellicida* rubra, Andr. heath. vol. 4. with a figure. *Erica pellicoides*, Bedf. eric. wob. p. 18. Corollas reddish-purple.


16 S. **sulphurea**; leaves linear, obtuse, villous; flowers fasciculate, axillary and terminal, nearly sessile, horizontal; bracteas close to the calyx; corolla cylindrical, trumpet-shaped, villous; style exserted. \( \text{H.} \) G. Native of the Cape of Good Hope. *Erica sulphurea*, Andr. heath. vol. 4. with a figure. *Sims*, bot. mag. 1884. Lodd. bot. cab. 1762. *Corollas pale yellow or sulphur-coloured.*


17 S. \*flava*; leaves 3 in a whorl, filiform, glabrous, short, erect; flowers horizontal, axillary, crowded; calyx bracteate; corolla urceolate, tubular; short, style exserted. \( \text{H.} \) G. Native of the Cape of Good Hope. *Erica flavâ*, Lodd. bot. cab. 882. Andr. heath. vol. 2. t. 38. Flowers yellow.

**Yellow-flowered Syringodea.** Fl. April, Sept. Clt. 1795. Shrub.

18 S. **rubescens**; leaves linear-lanceolate, with revolute ciliated margins; floriferous branches pendulous; bracteas awned, close to the calyx, and are as well as the calycine segments dentately fringed; corolla cylindrical, inflated, beest with glandular hairs both inside and outside, with a revolute limb; style exserted. \( \text{H.} \) G. Native of the Cape of Good Hope. *Erica rubescens*, Andr. heath. 3. t. 56. Lodd. bot. cab. 1826. *Erica elongâta*, Hortul. *Corolla from pale purplish-red to white. Calycine segments ovate, roundish.*


20 S. \*linkii*; leaves spreading, beset with a few hairs; flowers terminal, umbellate; bracteas remote from the calyx; calycine segments ovate, white; anthers mutic; subexcrescent. \( \text{H.} \) S. T. G. Native of the Cape of Good Hope. *Erica prostrâdens*, Link, enulm. 1. p. 572. *Corolla 2-3 lines long, white.—Probably a species of *Cyanea.*

**Link's Syringodea.** Fl. April, May. Clt. 1805. Shrub.


22 S. **flamma**; leaves filiform, erectish, glabrous; flowers subsolitary, terminating the small branches, spike-like, horizontal; bracteas close to the calyx; calycine segments subulate, imbricated, unequal; corolla 8 lines long, downy, with a clavate tube, and the segments of the limb imbricated at the base; genitals a little exserted. \( \text{H.} \) G. Native of the Cape of Good Hope. *Erica flamma*, Andr. heath. 2. t. 56. *Erica bibax*, Sal. in Lin. trans. 6 p. 386. *Erica curviflora*, Thunb. diss. no. 30. *Corollas pale yellow.*


23 S. **linneoides**; leaves linear-lanceolate, pilose, spreading; flowers almost sessile, terminating small branches; bracteas close to the calyx; calycine segments lanceolate; corolla villous, cylindrical, swollen at top; style subexcrescent. \( \text{H.} \) G. Native of the Cape of Good Hope. *Erica linneoides*, Andr. heath. 2. t. 42. *Erica Linneana*, Ait. hort. kew. 2. p. 375. Lodd. bot. cab. 102. *Corollas with a purplish-red base, and a white top.*


24 S. **radiaeta**; leaves filiform, spreading; flowers terminal, umbellately verticillate; bracteas remote from the calyx; calyx adpressed; corolla 9-10 lines long, glabrous, with a cylindrical tube, and recurved limb; style exserted; fruit glabrous. \( \text{H.} \) G. Native of the Cape of Good Hope. *Erica radiaeta*, Andr. heath. 1. t. 46. *Erica calaminiflora*, Sal. in Lin. trans. 6 p. 380. Flowers reddish-purple.


25 S. **spuria**; leaves linear, subciliated, erectly spreading; flowers aggregate, terminating the small branches; bracteas remote from the calyx; calycine segments ovate, acuminate; corolla 7-8 lines long, downy, with a cylindrical tube, and a spreading border; genitals inclosed; pericarp obpyramidal. \( \text{H.} \) G. Native of the Cape of Good Hope. *Erica spuria*, Andr. heath. 1. t. 54. *Erica cicutaeflora*, Sal. in Lin. trans. 6 p. 357. *Corolla red.*

**Var. \( \beta \), translocens;** corolla purplish-red, rather ventricose at the base.—*Erica translocens*, Andr. heath. vol. 4. with a figure.

**Spurious Syringodea.** Fl. April, May. Clt. 1796. Shrub.

26 S. **exuergens**; leaves filiform, spreading recurved; flowers axillary, verticillate, horizontal, crowded; bracteas remote from and approximate to the calyx; corolla cylindrically clavate, 13-15 lines long, viscid, with ovate cuneated segments; filaments excised; pericarp 4-furrowed. \( \text{H.} \) G. Native of the Cape of Good Hope. *Erica exuergens*, Andr. heath. 1. t. 57. Lodd. bot. cab. 835. *Erica grandiflora breviflora*, Wendl. eric. 7. p. 7. with a figure. *Erica pharetraeflora*, Sal. in Lin. trans. 6 p. 361. *Corollas orange-red.* This species differs from all others in the corolline segments being attenuated at the apex, and bifid. There are several varieties of the species in the garden, besides those mentioned below, differing in the colour of the flowers.

**Var. \( \beta \), grandiflora** (Bedf. eric. wob. p. 7.) leaves 6-7 in a whorl; anthers a little exserted; style exserted; corolla long, cylindrical, trumpet-shaped, with an orange-red tube, and orange-yellow segments.

**Var. \( \gamma \), rutila** (Sal. in Lin. trans. 6 p. 361.) corolla golden-yellow. \( \text{H.} \) G. *Erica abietina*, Roxb. mss. ex Sal.


27 S. **curviflora**; leaves linear, spreading, glabrous; flowers usually solitary, terminating small branches; bracteas close to the...
the calyx; corolla glabrous, 10-11 lines long, with a curved cylindrical tube, and an erect or spreadingly reflexed limb; style exserted. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica curtivilia, \( \text{Lin. dis. no. 41. a. Andr. heath. t. 52. Lodd. bot. cab. 1668.} \) Wendl. eric. fasc. 3. no. 3. p. 3. with a figure. Erica fastuosa, \( \text{Sal. in Lin. trans. 6. p. 359.} \) Flowers orange-yellow. Fruit broadly turbinate.

**Curved-flowered Syringodea.** Fl. July, Nov. C1t. 1774. Shrub tall.

28 S. simpliciflora; leaves trigonal, erectly spreading, flowers terminating the small branches, solitary, erect; bracteas remote from the calyx; calycine segments lanceolate, adpressed; corolla tubular, constricted in the middle, with a spreading limb; genitils exserted. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica simpliciflora, \( \text{Willd. spec. 2. p. 402.} \) Wendl. eric. 17. p. 69. with a figure. Erica curtivilia, \( \text{Lin. syst. ed. 13. p. 305. but not of his dis. Sal. in Lin. trans. 6. p. 358.} \) Flowers rufous or reddish-orange. Pedicels downy. Corolla 9 lines long, downy; interstices of the limb lanceolate. Calycine segments ovate, acuminate. **Simple-flowered Syringodea.** Fl. March, July. C1t. 1774. Shrub.

29 S. tubiflora; leaves linear, obtuse, downy, erect; flowers usually solitary, terminating the small branches; bracteas almost close to the calyx; corolla downy, cylindrical, 9-10 lines long, a little curved, with a revolute limb; calycine segments oblong; style exserted. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica tubiflora, \( \text{Lin. dis. no. 40. spec. ed. 2. p. 505.} \) Andr. heath. t. 55. Wendl. eric. 4. p. 7. with a figure. Ionon. hort. kew. 38. \( \text{Sal. in Lin. trans. 6. p. 357.} \) Flowers purplish-red. Pedicels glabrous. **Var. \( \beta \), coccinea** (\( \text{Sal. in Lin. trans. 6. p. 357.} \) ) flowers deeper red. \( \text{G}. \text{ Erica coccinea, Lin. dis. no. 42. with a figure of the flower.} \)

**Tube-flowered Syringodea.** Fl. April, Aug. C1t. 1775. Shrub.

30 S. ignescens; leaves linear, glabrous, spreading; flowers solitary, terminating the small branches, drooping; calycine segments ovate, acuminate, a little ciliated; bracteas ovate, ribbed, close to the calyx, or rather remote; corolla cylindrical, rather pilose at top, with a revolute limb; style exserted. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica ignescens, \( \text{Andr. heath. 2. t. 47.} \) Corollas reddish-orange. Calycine segments ovate, acuminate. **Fiery Syringodea.** Fl. March, June. C1t. 1792. Shrub.

31 S. sooida; branches scattered, hairy; leaves linear, obtuse, woolly, spreading; flowers usually solitary, terminating the small branches, drooping; bracteas remote from the calyx; calyxes adpressed, convex outside at the base; corolla 12 lines long, cylindrical, curved, villous, with a revolute limb; genitils inclosed. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica sooida, \( \text{Andr. heath. 1. t. 55. Lodd. bot. cab. 1793.} \) Erica laniflora, \( \text{Wendl. eric. fasc. 19. no. 4. with a figure.} \) Erica floccosa, \( \text{Sal. in Lin. trans. 6. p. 360.} \) Flowers dirty orange-red. Style exserted. **Dirty-flowered Syringodea.** Fl. Aug. Dec. C1t. 1790. Shrub.

32 S. brachiatis; leaves linear, hairy; flowers terminal; corolla 6-8 lines long, hairy both inside and outside, with a curved pyramidal tube; anthers mutic, very long. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica brachiatis, \( \text{Sal. in Lin. trans. 6. p. 367.} \) **Branched Syringodea.** Fl. March, July. C1t. 1792. Shrub.

33 S. serratifolia; leaves linear, acute, spreading, with plumeose margins; flowers aggregate, terminal; bracteas close to the calyx; calyxes foliaceous, glandularly ciliated, a little recurved; corolla 9 lines long, glabrous, cylindrical, with a spreading limb; anthers a little exserted; style exserted. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica serratifolia, \( \text{Andr. heath. 1. t. 48. Lodd. bot. cab. 1793.} \) Erica cylindriciflora, \( \text{Sal. in Lin. trans. 6. p. 356.} \) Erica plumosa, \( \text{Wendl. eric. no. 12. p. 5.} \) Corolla greenish-yellow at top, and orange-red at base. Leaves 4-6 in a whorl.


34 S. Massonii; leaves 4-5 in a whorl, linear, serrulate, hairy, imbricately spreading; flowers axillary, crowded, drooping, disposed in a verticillate crown; bracteas imbricate; corolla 10-12 lines long, viscid, swollen at top; style exserted; pericarp clavate, stipitate. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica Massonii, \( \text{Lin. suppl. 219. Curr. bot. mag. t. 356.} \) Pl. kew. t. 20. Lodd. bot. cab. 1069. Erica Massonia, \( \text{Andr. heath. 1. t. 51.} \) Erica lycopodiifolia, \( \text{Sal. in Lin. trans. 6. p. 361.} \) Corolla with a scarlet or reddish-purple tube, and a greenish-yellow constricted mouth. **Var. \( \alpha \), minor** (\( \text{Bedd. eric. wob. p. 14.} \) ) corolla smaller, with an inflated clavate tube. \( \text{G}. \text{ Masson's Syringodea.} \) Fl. July, Oct. C1t. 1787. Shrub.

35 S. procera; leaves linear, erect, downy; flowers solitary, terminating the small branches, ereticith; corolla constricted in the middle, with a spreading limb; style exserted. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica procera, \( \text{Wendl. eric. with a figure.} \) Corollas white?

**Lofty Syringodea.** Fl. April, June. C1t. 1791. Shrub.

36 S. conspicuus; leaves linear, oblong, glabrous, spreading; flowers terminal, rather aggregate, drooping; bracteas near the calyx, spatulate; calycine segments ovate, obtuse, concave at the base outside; pedicels pubescent; corolla 15 lines long, with a clavate tube, and a retuse limb; genitils exserted a little. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica conspicua, \( \text{Sol. in hort. kew. 2. p. 373.} \) Willd. spec. 2. p. 404. Pl. kew. t. 12. Andr. heath. 1. t. 30. Wendl. eric. 4. p. 9. with a figure. Corollas orange-yellow.

**Conspicuous Syringodea.** Fl. May, Aug. C1t. 1774. Shrub.

37 S. glandulososa; leaves linear, acute, beset with glandular hairs, spreading; flowers nearly terminal, crowded, disposed in a verticillate crown; bracteas close to the calyx, and are as well as it ciliated with glandular hairs; corolla glabrous, with a clavate tube; style exserted. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica glandulososa, \( \text{Thumb. prod. p. 71. disso. no. 32.} \) Corollas orange-red?

**Glandular Syringodea.** Fl. May, June. C1t. 1801. Shrub.

38 S. gemmifera; leaves oblong, adpressed, ciliated, aristate, 4-5 in a whorl; branches thickened at top; bracteas remote from and approximating the calyx; flowers drooping, crowded, disposed in a verticillate crown; corolla villous, cylindrical, inflated, genitils inclosed. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica gommifera, \( \text{Simms, bot. mag. t. 2986. Lodd. bot. cab. 457.} \) Erica Massonii minor, \( \text{Hortul.} \) Corollas reddish-purple or scarlet, with a green apex.


39 S. lituiflora; leaves linear, nearly smooth; flowers solitary or by threes, terminating the branches; bracteas close to the calyx; corolla 6-8 lines long, downy or villous, with the tube clavate; filaments bearded on the back at the apex. \( \text{G}. \text{ Native of the Cape of Good Hope.} \) Erica lituiflora, \( \text{Sal. in Lin. trans. 6. p. 356.} \) Erica perspicua, \( \text{Wendl. eric. fasc. 1. p. 7. with a figure.} \) Corolla white, tinged with red.
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40 S. perspicua; leaves linear, nearly smooth; flowers terminating in the small branches, spike-formed; bracteae remote from the calyx; pedicels hairy; corolla cylindrical, erect; genitals inclosed. \( \ddot{\gamma} \). G. Native of the Cape of Good Hope. Erica perspicua. Hort. Bedd. eric. wob. p. 18. Corolla reddish-purple.


41 S. Bedfordiana; leaves linear, ciliated, hairy; flowers terminal, subcapitate; pedicels slightly hairy; bracteae remote from the calyx; corolla downy, with a cylindrical subventricose tube; genitals inclosed. \( \ddot{\gamma} \). G. Native of the Cape of Good Hope. Erica perspicuicollis, Bedd. eric. wob. 18. Flowers reddish-purple.


42 S. cyrilleflora; stem slender; leaves linear, glabrous; corolla 2-3 lines long, downy, with a narrow campanulate tube, and a short limb. \( \ddot{\gamma} \). G. Native of the Cape of Good Hope. Erica cyrilleflora, Sal. in Lin. trans. 6. p. 357. Flowers pale scarlet.


43 S. obpyramidalis; leaves pubescent, spreading; flowers terminal, usually by threes; bracteae remote from the calyx, broad at the base; corolla funnel-shaped, with a spreading border, having the interstices of the limb tumid on the outside; fruit spherical. \( \ddot{\gamma} \). G. Native of the Cape of Good Hope. E. pyramidalis, Andr. heath. 1. t. 45. Sims, bot. mag. 366. kew. Lodd. bot. cab. 319. Ait. hort. kew. 3. p. 401. Icon. pl. t. 27. Wendl. eric. 5. p. 3. with a figure. Erica obpyramidalis, Sal. in Lin. trans. 6. p. 356. Corollas purplish-red, \( \frac{3}{2} \) to 4 lines long. Style exerted.

Obopyramidal-flowered Syringodea. Fl. Year. Clt. 1787. Shrubs \( \frac{1}{4} \) foot.

44 S. verticillata; leaves linear, glabrous; flowers crowded, nearly terminal, verticillate, drooping; bracteae remote from the calyx; corolla with a cylindrical inflated tube, glabrous, contracted at top; genitals inclosed. \( \ddot{\gamma} \). G. Native of the Cape of Good Hope. Erica verticillata, Andr. heath. 1. t. 7. Lodd. bot. cab. 145. Erica mammosa, \( \beta \), verticillata, Ait. hort. kew. 2. p. 369. Flowers scarlet.


45 S. coloans; leaves linear, spreading, ciliated; flowers crowded, terminating the small branches; bracteae close to the calyx; corolla cylindrical, clavate, glabrous; style almost inclosed; calyxes coloured, subulate. \( \ddot{\gamma} \). G. Native of the Cape of Good Hope. Erica coloans, Andr. heath. vol. 4. with a figure. Lodd. bot. cab. 224. Ker. bot. reg. 601. Bedf. eric. wob. pl. 4. f. 11. Corollas varying from white to red.


** ** Leaves 6 or more in a whorl.

46 S. sylvandens; leaves linear, obtuse, spreading; flowers densely crowded, drooping; calyculate segments ovate; corolla downy, with a subrevolute limb; genitals exerted. \( \ddot{\gamma} \). G. Native of the Cape of Good Hope. Erica sylvandens, Wendl. eric. fasc. 8. p. 5. with a figure, but not of Andr. Corolla deep red.


47 S. longifolia; leaves long, linear, incurvate spreading, with scabrous edges; flowers crowded in whorls, drooping; bracteae close to the calyx; corolla pubescent, clammy; calyx segments linear; genitals inclosed. \( \ddot{\gamma} \). G. Native of the Cape of Good Hope. Erica longifolia, Pl. hort. kew. t. 4. Willd. spec. 2. p. 398. Erica longifolia, \( \ddot{\gamma} \), Sal. in Lin. trans. 6. p. 363. Erica pinea, Wendl. eric. 1. p. 11. with a figure. Corolla more or less claveate, deep red.


48 S. vestita; leaves linear, erect, with scabrous edges; flowers crowded, verticillate, nearly sessile, spreading; bracteae close to the calyx; corolla cylindrical, more or less claveate, 9-11 lines long, downy, with a revolute limb: style exerted; pericarp silky at top. \( \ddot{\gamma} \). G. Native of the Cape of Good Hope. Erica vestita, Thumb. dis. no. 25. Erica longifolia, var. a, Sal. in Lin. trans. 6. p. 363. Erica vestita alba, Andr. heath. 1. t. 62. Wendl. eric. no. 12. p. 3. with a figure. Calyce segments ciliated with glandular hairs. Corolla white, cylindrical, curved.

Var. \( \beta \), lutea (Andr. heath. 3. t. 72.) leaves 6-8 in a whorl; corolla cylindrical, pale yellow.

Var. \( \gamma \), incarnata (Andr. heath. 2. t. 66. Lodd. bot. cab. 1698.) leaves 7 in a whorl; genitals a little exerted; corolla cylindrical, almost straight, pale reddish-purple. Erica longifolia, Curt. bot. mag. 706.

Var. \( \alpha \), rosea (Andr. heath. 2. t. 67.) leaves 7-8 in a whorl; anthers a little exerted; corolla cylindrical, subclavate, reddish-purple.

Var. \( \epsilon \), fulgida (Andr. heath. 2. t. 68.) anthers a little exerted; flowers nearly terminal; corolla with a cylindrical tube, and straight segments, reddish-purple or deep red. Erica fulgida, Bedd. eric. wob. p. 11. Lodd. bot. cab. 1633.

Var. \( \zeta \), purpurea (Andr. heath. 1. t. 63.) anthers a little exerted; corolla cylindrical, subclavate, purplish-red. Lodd. bot. cab. 217. Wendl. eric. 10. p. 7. with a figure.

Var. \( \eta \), cocinea (Andr. heath. 1. t. 6. bot. mag. 402. Wendl. eric. 11. p. 5. with a figure.) anthers a little exerted; corolla erect, cylindrical, curved, deep red, not exactly scarlet.


49 S. finea; leaves linear, obtuse, spreading; flowers crowded, verticillate, almost sessile, spreading; bracteae close to the calyx; calyce segments dilated at the base, and linear-subulate at the apex, imbricate; corolla 6-7 lines long, glabrous, with a cylindrical clavate tube, and a serrated spreading limb; pericarp glabrous; style exerted. \( \ddot{\gamma} \). G. Native of the Cape of Good Hope. Erica finea, Thumb. dis. no. 26. Andr. heath. 1. t. 61. Erica pinifolia, Sal. in Lin. trans. 6. p. 362. but not of Andr. Flowers deep red and blue.

Var. \( \beta \), purpurea (Lodd. bot. cab. 1259.) corolla purple.

There are several other varieties in the gardens.


50 S. pinifolia; leaves filiform, elongated, glabrous, spreading, 6-8 in a whorl; flowers nearly terminal, crowded, horizontal, verticillate; bracteae close to the calyx; calyx villous, with linear segments; corolla tomentose, cylindrically club-shaped, inflated, ribbed; style exerted. \( \ddot{\gamma} \). G. Native of the Cape of Good Hope. Erica pinifolia, Andr. heath. 3. t. 69. Erica pittyophylla, Spreng. syst. 2. p. 181. Corolla white, with dark anthers.

Var. \( \beta \), diacolor (Andr. heath. 3. t. 70.) corolla with a cylindrical ribbed tube, reddish-purple or pale red.

Var. \( \gamma \), spiralis (Hort. Bedd. eric. wob. 19.) corolla with a clavate inflated tube, white and purplish-red.

Var. \( \delta \), cocinea (Andr. heath. 2. t. 65.) flowers scarlet.

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51 S. aurea; leaves linear, recurvedly spreading; flowers horizontal, crowded, verticillate, nearly terminal; bracteas close to the calyx, aristate; corolla cylindrical, with reflexed segments; style exerted; calyce segments ovate, acuminated. h. G. Native of the Cape of Good Hope. Erica aurea, Andr. heath. 2. t. 61. Corollas orange-yellow.

Var. β, flore pallido (Andr. heath. 3. t. 71.) flowers pale red, with dark anthers.


52 S. virens; leaves linear, spreading, subrecurved; flowers crowded, verticillate, horizontal; bracteas one-half shorter than the calyx; corolla cylindrical, ribbed, dilated in the middle, with a revolute limb; style exerted. h. G. Native of the Cape of Good Hope. Erica virens, Andr. heath. 2. t. 59. Ait. hort. kew. 2. p. 376. Flowers greenish-yellow.


53 S. Hibbertiana; leaves 4-6 in a whorl, linear, glabrous, spreading; flowers horizontal, crowded, disposed in a whorled crown; bracteas 3, two of which are close to the calyx, and the third remote; corolla glabrous, clamy, cylindrical, curved, clavate, with an erect limb; anthers a little exerted. h. G. Native of the Cape of Good Hope. Erica Hibbertiana, Andr. heath. 3. t. 68. Erica Hibbertiana, Ait. hort. kew. 2. p. 378. Sims. bot. mag. 1758. Corollas red or purplish-red, with a yellow mouth.


54 S. onosmaeflora; leaves linear, spreading, glabrous; flowers crowded, axillary, subverticillate; corolla viscid, with a cylindrical tube and spreading limb; bracteas one-half shorter than the calyx. h. G. Native of the Cape of Good Hope. Erica glutinosa, Andr. heath. 1. t. 60. Erica viscósa, Wendl. eric. with a figure. Erica onosmaeflora, Sal. in Lin. trans. 6. p. 363. Corolla sulphur-coloured; tube clavate, 5-10 lines long. Calyce segments ovate-oblong.


55 S. echiflora; leaves 5-7 in a whorl, linear, downy, with rough margins, spreading; flowers axillary, horizontal, spicate; bracteas close to the calyx; corolla with a short inflated ribbed tube, clamy; style exerted. h. G. Native of the Cape of Good Hope. Erica echiflora, Andr. heath. 3. t. 62. Lodd. bot. cab. 364. Erica echiflora, var. supraéba, Bedf. eric. wob. p. 8. Corollas deep red or reddish-purple.

Var. β, purpurea (Bedf. eric. wob. p. 8.) corolla purple, with a short equal tube, that is not inflated.

Var. γ, coccinea (Lodd. cat. p. 25.) corollas deep red or scarlet.


56 S. argentiflora; leaves linear, glabrous, spreadingly incurved; flowers axillary, horizontal, spicate, rather pellucid; bracteas close to the calyx; style exerted. h. G. Native of the Cape of Good Hope. Erica argentiflora, Andr. heath. vol. 4. with a figure. Corolla tubular, short, white.


57 S. Archerioida; leaves 6-7 in a whorl, serrulately ciliate, spreading; flowers axillary and terminal, crowded, verticillate; pedicels trubacteats, 2 of the bracteas near the calyx, and the third remote; corolla downy, viscid, with a cylindrical inflated tube; calyce segments serrulately hispid, as well as the bracteas; style exerted. h. G. Native of the Cape of Good Hope. Erica Archerioida, Ait. hort. kew. 2. p. 378. Lodd. bot. cab. 1466. Corolla deep reddish-purple or scarlet. Ovarium cylindrical.


58 S. rosea; leaves filiform, erect, 5-6 in a whorl; flowers sessile, terminating small branches; bracteas close to the calyx; corolla glabrous, with a cylindrical tube and erect segments; calyce segments subulate; genitils inclosed. h. G. Native of the Cape of Good Hope. Erica rosea, Andr. heath. 2. t. 13. Lodd. bot. cab. 782. Flowers red.


59 S. Salisburiana; leaves linear, erect, with revolute margins, white beneath; flowers axillary, racemosely spicate, tufted, crowded, drooping; corollas cylindrically clavate; style exerted. h. G. Native of the Cape of Good Hope. Erica Salisburiana, Andr. heath. vol. 4. with a figure. Erica rosea, Hort. Bedf. eric. wob. p. 132. Flowers purplish-red.


60 S. grandiflora; leaves linear, bluntish, glabrous, reclinate; flowers axillary near the tops of the branches and stem, verticillate; bracteas small, close to the calyx; calyce segments ovate-lanceolate; corolla long, curved, trumpet-shaped, viscid, with a revolute limb; genitils exerted. h. G. Native of the Cape of Good Hope. Erica grandiflora, Thunb. diss. no. 28. Lin. suppl. 223. Curt. bot. mag. 189. Pl. hort. kew. t. 8. Andr. heath. 1. t. 50. Erica grandiflora longifolia, Wendl. eric. 6. p. 5. with a figure. Lodd. bot. cab. 498. Corolla orange-yellow outside, yellow inside. Leaves from 4 to 6 in a whorl, but usually the latter number.

Var. β, formosa; leaves 8 in a whorl; pedicels bracteate, 2 of the bracteas close to the calyx, and the third remote from it; corollas reddish-orange. Erica formosa, Bedf. eric. wob. p. 10.

Var. γ, humilis; leaves 4 in a whorl. Shrub dwarf.

Var. δ, Andrémsii; flowers scarlet. h. G. Erica formosa, Andr. heath. 2. t. 64.


61 S. Leea; leaves linear, filiform, stiff, obtuse, spreading; flowers axillary, verticillate; bracteas close to the calyx, and length of it; corolla 5-6 lines long, viscid, with a clavate 4-ribbed tube, and a spreading limb; calyx adpressed; style exerted. h. G. Native of the Cape of Good Hope. Erica Léea, Andr. heath. 1. t. 59. Erica Leéea, Ait. hort. kew. 2. t. 376. Pl. kew. 24. Lodd. bot. cab. 298. Erica costaféora, Sal. in Lin. Trans. 6. p. 363. Corollas orange-red.


62 S. cephalotes; leaves linear; flowers disposed in capitate whorls; calyx downy; corolla tubularly clavate; anthers inclosed; style exerted. h. G. Native of the Cape of Good Hope. Erica cephalotes, Thunb. diss. no. 23. prod. 70. Willd. spec. 2. p. 398. Corolla purple.


63 S. coccinea; stem angular; leaves linear, cuspidate, ciliate, spreading; flowers axillary, crowded; bracteas close to the calyx; calyx spreading, woolly or villous; corolla viscid, 5-10 lines long, having the tube hardly clavate, and the limb erect; style exerted; ovariurn turbinate. h. G. Native of the Cape of Good Hope. Erica coccinea, Berg. pl. cap. p. 98. Wendl. eric. fase. 3. p. 9, with a figure. Andr. heath. 1. t. 49. Lodd. bot. cab. 1374. Erica abietina, Lin. spec. ed. 1. p. 355. Erica frondosa, Sal. in Lin. trans. 6. p. 364. Flowers scarlet or deep red.

Var. β, Bedfordiana; bracteas coloured; calyx woolly; genitils exerted; flowers nearly terminal, verticillate; corolla with
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Scarlet-flowered Syringodea. Fl. Year. Clt. 1793. Shrub. 64 S. purpurea; stem terete; leaves short, linear, ciliated, spreading, 6-7 in a whorl, rather remote; flowers crowded, horizontal, verticillate; bractees close to the calyx; calyx incurved erect; corolla cylindrical, trumpet-shaped, 8-9 lines long, viscid, with a hardly elevate tube, and a spreading limb; genitalia exserted; ovary turbinate. ¾ G. Native of the Cape of Good Hope. Erica purpurea, Andr. heath. t. 1. t. 56. Loddbot. cab. 703. Erica phyllichola, Sal. in Lin. trans. 6. p. 364. Corollas purple.


Thready Syringodea. Fl. Year. Clt. 1800. Shrub. 67 S. lanata; leaves 5-6 in a whorl, woolly, as well as the branches, which are also verticillate; flowers terminal; calyx incurvedly spreading, concave at the base outside; corolla 9-11 lines long, rather woolly. ¾ G. Native of the Cape of Good Hope. Erica lanata, Wendl. eric. p. 45. with a figure. Erica verticillaris, Sal. in Lin. trans. 6. p. 360. Flowers of a rufous fulvous colour. Anthers mucous.

Woolly Syringodea. Fl. Feb. May. Clt. 1775. Shrub. 68 S. pura; leaves linear, glabrous; flowers axillary, verticillate, near the tops of the branches; bractees close to the calyx; style exserted; corolla with a cylindrical subcalvate tube. ¾ G. Native of the Cape of Good Hope. Erica pura, Andr. heath. vol. 4. with a figure. but not of Lodd. Flowers pure white.


Pretty Syringodea. Fl. Autumn. Clt. 1792. Shrub. 70 S. pulviniformis; leaves linear, attenuated, serulate ciliated; flowers longish, on the rudiments of the branches; corolla 7-9 lines long, viscid, with a cylindrically urceolate tube. ¾ G. Native of the Cape of Good Hope. Erica pulviniformis, Sal. in Lin. trans. 6. p. 364. Corollas red.—Habit of Erica cerinthisoides.


§ 2. Anthers awned or crested. Aberrant species.

71 S. discolor; leaves linear, spreading, ciliated; flowers terminal, by threes; bractees close to the calyx; calycine segments serrated; corolla 9-10 lines long, anointed with glutinous, urceolate, having the tube finely striated; awns of anthers short, glabrous. ¾ G. Native of the Cape of Good Hope. Erica discolor, Andr. heath. t. 1. t. 3. Wendl. eric. 5. p. 9. with a figure. Lodd. bot. cab. 1453. Erica cupressiformis, Sal. in Lin. trans. 6. p. 354. Corollas pale red.

Two-coloured-flowered Syringodea. Fl. Nov. March. Clt. 1788. Shrub. 72 S. ruysda; leaves crowded, linear, spreadingly reflexed, 3-5 in a whorl; flowers axillary, verticillate, near the tops of the branches; bractees broad at the base, remote from the calyx; calyx foliaceous; corolla with a wrinkled tube; genita exserted; anthers awned. ¾ G. Native of the Cape of Good Hope. Erica ruysda, Andr. heath. vol. 4. with a figure. Flowers reddish-purple.


Dense-leaved Syringodea. Fl. March, May. Clt. 1811. Shrub. 74 S. Ewerana; leaves linear, scabrous, spreading; flowers subspicate; bractees remote from the calyx; calyx flat, with thick margins; corolla cylindrical, 8-10 lines long, clothed with viscid down, curved and clavate; style exserted; awns of anthers long, downy. ¾ G. Native of the Cape of Good Hope. Erica Ewerana, Dry. in Ait. hort. kew. 2. p. 368. Lodd. bot. cab. 303. Erica Ewrena, Hort. Erica Uliria, Andr. heath. 2. t. 3. Wendl. eric. 18. p. 91. Erica decora, Sal. in Lin. trans. 6. p. 554, with a figure. Corolla dark red, or reddish-purple, with a greenish-yellow mouth.

Var. β, pilosa (Andr. heath. 2. t. 4.) leaves pilose; bractees close to the calyx; flowers terminating small branches; corolla slightly curved and clavate, purplish-red, with a greenish-yellow mouth.

Ewer’s Syringodea. Fl. July, Nov. Clt. 1790. Shrub. 75 S. hirta; leaves linear, ciliated; flowers terminal; bractees sessile, close to the calyx, ciliated; corolla cylindrically; style exserted; anthers awned. ¾ G. Native of the Cape of Good Hope. Erica hirta, Andr. heath. 3. t. 5. Lodd. bot. cab. 1116. but not of Thurb. nor Wildl. Corolla reddish-purple, with a greenish-yellow mouth.

Hairy Syringodea. Fl. Feb. May. Clt. 1800. Shrub. 76 S. cruenta; leaves linear, subulate, glabrous, spreading; flowers terminal, by threes; bractees remote from the calyx; calyx serrated; corolla 9-12 lines long, shining, smooth, with a clavate, more or less compressed, curved tube; style exserted; pericarp ovate. ¾ G. Native of the Cape of Good Hope. Erica cruenta, Pl. kew. t. 13. Lodd. bot. cab. 1656. Erica melliflua, Sal. in Lin. trans. 6. p. 354. Corolla reddish-purple or blood-coloured.

Var. β; calyx slightly serrated; corolla deep red or scarlet. ¾ G. Erica cruenta, Andr. heath. 1. t. 9. Sol. in Ait. hort. kew. ed. 1. vol. 2. p. 16. Wendl. eric. 4. p. 11. with a figure.
Bloody-flowered Syringodea. Fl. Year. Ct. 1774. Shrub. 77 S. viridiflora; leaves 3 in a whorl, or alternate, ciliated; flowers terminal, drooping; bracteas imbricate; corolla with a cylindrical calyx tube; style exerted; anthers a little exerted, subulate. [G. Native of the Cape of Good Hope. Erica hirta, var. viridiflora, Andr. heath. 3. t. 7. Lodd. bot. cab. 917. Flowers deep green.

Green-flowered Syringodea. Fl. July, May. Ct. 1810. Shrub. 78 S. speciosa; leaves linear, downy, spreading; flowers terminal, by threes; bracteas close to the calyx; calyx cleft segments broad, short, imbricate, with woolly edges; corolla with a cylindrical, inflexed, curved tube, and an erect limb; style exerted, incurved at top; anthers awned, about the length of the corolla. [G. Native of the Cape of Good Hope. Erica speciosa, Andr. heath. 2. t. 2. Lodd. bot. cab. 375. Ait. hort. kew. 2. p. 369. Corollas dark red or reddish-purple, with a greenish-yellow mouth.


Var. βthala; flowers white.
Var. γthala; flowers red.


* * Leaves 4 in a whorl.

80 S. mutabilis; leaves linear, ciliated, spreading, 3-4 in a whorl, the 3 terminal hairs the longest; flowers terminal, umbellate; pedicels downy; bracteas 3, 2 near the calyx, and the third remote from it; calyx cleft segments ciliated, with glan-dular hairs; corolla cylindrical, inflated, filaments awned; anthers a little exerted; style exerted. [G. Native of the Cape of Good Hope. Erica mutabilis, Andr. heath. 3. t. 31. Siims, bot. mag. 2948. Lodd. bot. cab. 46. Corolla purplish-red, deeper towards the top. The hairs or down on the plant are tipped with black glands in the young state.

Changeable-flowered Syringodea. Fl. Year. Ct. 1798. Shrub 1 to 2 feet. 81 S. cuspidoidea; leaves linear, pedicels glabrous; calyx cleft segments ovate, cupulidade; flowers terminal; corolla 11-12 lines long, downy, having the interspaces of the limb lanceolate at the base; anthers hairy, awned; filaments rather villous. [G. Native of the Cape of Good Hope. Erica cuspidoidea, Sal. in Lin. trans. 6. p. 338.

Point-bearing Syringodea. Fl. Feb. May. Ct. 1796. Shrub. 82 S. densa; leaves 4-5 in a whorl, linear, somewhat imbricated, spreading; flowers axillary, crowded, nearly sessile; bracteas close to the calyx; calyx adpressed; corolla with an oblong-cylindrical tube, and a short spreading limb; anthers awned; style a little exerted. [G. Native of the Cape of Good Hope. Erica densa, Andr. heath. 3. t. 30. Corolla pale red, with a deep spreading border, like a Callista, of which it may probably be a species.

Dense-flowered Syringodea. Fl. May, Oct. Ct. 1810. Shrub. 83 S. naana; stem trailing; leaves linear, spreading, obtuse; flowers terminal; bracteas close to the calyx, imbricated, ciliated; corolla 9-11 lines long, downy outside, with a clavate compressed tube; style exerted; awns of anthers long. [G. Native of the Cape of Good Hope. Erica nana, Sal. in Lin. trans. 335. Erica depressa, Andr. heath. 2. t. 12. but not of Thumb, nor Willd. Corollas yellow-green.


Purple-flowered Syringodea. Fl. June, Nov. Ct. 1820. Shrub. 85 S. hybrida; leaves linear, glabrous, flowers terminal; bracteas close to the calyx; corolla glabrous, with a cylindrical, slightly curved tube; style exerted; anthers arista. [G. Native of the Cape of Good Hope. Erica hybrida, Hort. Flowers purplish-red. Nearly allied to S. cylindrica.

Hybrid Syringodea. Fl. May, June. Ct.? Shrub. 86 S. nitens; leaves hairy, flowers terminal; pedicels tri-bracteate, 2 of the bracteas near the calyx, and the third remote; calyx coloured, hairy; corolla with a curved subcalyx tube; genitils arista, a little exerted. [G. Native of the Cape of Good Hope. Erica nitens, Hortul. Bedd. eric. wob. p. 16. Corolla purplish-red, with a green top.

Skining Syringodea. Fl. June, Sept. Ct.? Shrub. 87 S. sanguinea; leaves linear, glabrous; flowers nearly terminal, crowded, verticillate; calyces broad; bracteas remote from the calyx; corolla cylindrical, anthers a little exerted, subulate; style exerted. [G. Native of the Cape of Good Hope. Erica sanguinea, Lodd. bot. cab. 86. Flowers deep red.


Greenish-flowered Syringodea. Fl. May. Ct. 1804. Shrub. 89 S. ambigua; leaves linear, rather hairy, spreading; flowers terminal, usually solitary; bracteas close to the calyx; calyx segments subulate, adpressed; corolla striated, glabrous, with a cylindrical tube and short reflexed limb; style a little exerted; anthers awned. [G. Native of the Cape of Good Hope. Erica ambigua, Wendl. eric. fasc. 16. p. 61. with a figure. Erica cylindrica, Andr. heath. 2. t. 30. Lodd. bot. cab. 1434. Corolla reddish-purple.


Club-flowered Syringodea. Fl. Aug. Oct. Ct. 1799. Shrub. 92 S. epiotoma; leaves glabrous; flowers terminal; bracteas remote and close to the calyx; calyx green, large, inflated; corolla with an oblong inflated tube; genitils inclosed, arista. [G. Native of the Cape of Good Hope. Erica epistoima,
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93 S. saxicifóra; leaves linear, flowers terminal; calyx segments broad, ovate, acuminate; corolla 6-8 lines long, glabrous, with a cylindrical tube; anthers long; epithets close, papillate. ₇. G. Native of the Cape of Good Hope. Erica saxicifóra, Sal. in Lin. trans. 6. p. 555.


₉₄ S. Patersòni; leaves dense, linear, straight, spreading, glabrous; flowers crowded, axillary; bracteas close to the calyx; calyces segments ciliated at the base, and cussipitate at the apex; corolla 6-8 lines long, glabrous, with a cylindrical tube and a short reflexed limb; style exerted; anthers of long. ₇. G. Native of the Cape of Good Hope. Erica Patersòni, Andr. heath. 1. t. 10. Wendl. eric. fasc. 1. p. 16. with a figure. Erica Patersòni, Ait. hort. kew. 2. p. 379. Loddd. bot. cab. 1729. Erica abietina, Lin. spec. ed. 2. p. 506. diss. no. 20. Erica spissifolia, Sal. in Lin. trans. 6. p. 555. Flowers yellow.

Var. β, monòstrós (Bedf. eric. wob. p. 17.) corolla larger.

Var. γ, Major (Andr. heath. 3. t. 16.) calyx slightly toothed.


95 S. velitárias; leaves linear; flowers terminal; corolla $\frac{3}{4}$ to 3 lines long, downy, with an obovate tube and a recurved spreading limb; of anthers long, cuneate, and a little serrated. ₇. G. Native of the Cape of Good Hope. Erica velitárias, Sal. in Lin. trans. 6. p. 557.


₉₆ S. olívæ; leaves linear, triquetrous, stiff, glabrous; spreading; flowers axillary, verticillate, pendulous, crowded; pedicels glabrous; bracteas lanceolate, close to the calyx, ribbed; calyces segments lanceolate; corolla downy, 7-9 lines long, with a cylindrical inflated tube, 4-angled at the base; genits inclosed, and anthers awned. ₇. G. Native of the Cape of Good Hope. Erica olívæ, Wendl. eric. with a figure. Erica gélida, Andr. heath. 2. t. 11. Ait. hort. kew. 2. p. 379. Loddd. bot. cab. 698. Erica alveífíora, Sal. in Lin. trans. 6. p. 366. Flowers green. Leaves 4-6 in a whorl.

Var. β, albínæ (Bedf. eric. wob. p. 11.) corolla with a white base and a green top.

Var. γ, gítea (Wendl. eric. fasc. 12. p. 13. with a figure); bracteas remote from the calyx; flowers disposed in a verticillate crown, greenish-yellow. Leaves 4-5 in a whorl.


₉₇ S. mammósæ; leaves linear, subulate, glabrous, erect, spreading; flowers drooping, axillary, crowded, verticillate, near the tops of the branches; bracteas linear, remote from the calyx; calyces coloured; pedicels downy; corolla downy, 8-10 lines long; with a cylindrical inflated tube, having 4 pits near the base; genits inclosed; anthers awned. ₇. G. Native of the Cape of Good Hope. Erica mammósæ, Lin. mant. 234. diss. 21. Andr. heath. 1. t. 8. Loddd. bot. cab. 125. Erica mammósæ, β, Sal. in Lin. trans. 6. p. 366. Erica abietina, Thunb. diss. no. 68. Schw. pl. no. 22. with a figure. Berg. pl. cap. 105.—Buxb. cent. 4. p. 25. t. 41-42. Corollas pale purplish-red, or dark pink.

Var. β, minor (Andr. heath. 3. t. 9.) corolla more slender, purplish-red.

Var. γ, pallídæ (Lodd. bot. cab. 951.) flowers paler.


₉₈ S. túmida; leaves linear, obtuse, hairy, reflexed; flowers terminal, usually by fours; pedicels tricraciate, 2 of the bracteas close to the calyx, and the third remote; corolla downy, with an oblong-cylindrical tube; calyx spreading; style somewhat exerted; anthers awned. ₇. G. Native of the Cape of Good Hope. Erica tûmida, Ker. bot. reg. t. 65. Erica splêndens, Andr. heath. vol. 4. with a figure. Erica splêndida, Hort. Loud. hort. brit. p. 146. Flowers red.


₉₉ S. Bowiea’na; leaves linear, glaucous, glabrous; bracteas remote from the calyx; flowers crowded, axillary, verticillate, near the tops of the branches, pendulous; corolla cylindrical, with an inflated tube, and contracted mouth; genits inclosed; anthers awned. ₇. G. Native of the Cape of Good Hope. Erica Bowiea’na, Loddd. bot. cab. 842. Erica Boiviá, Bedf. eric. wob. p. 4. Erica Bãiæa, Andr. heath. vol. 4. with a figure. Flowers white.—Habit of S. mammósæ, and S. verticillata, &c.


*** Leaves 5-6 to 8 in a whorl.

100 S. cervicifóra; leaves 5-6 in a whorl, linear; flowers axillary, crowded; corolla 5-6 lines long, downy, with a very narrow urceolate tube and a spreading limb; filaments minutely spurred. ₇. G. Native of the Cape of Good Hope. Erica cervicifóra, Sal. in Lin. trans. 6. p. 362. Erica inapértta, Hort. Pedicels tricraciate.


₁₀₁ S. patersòniaéa; leaves linear, glabrous, 5-6 in a whorl; flowers axillary, verticillate; bracteas close to the calyx, toothed; corolla with a cylindrical, clavate, curved tube; style exerted; anthers aristate. ₇. G. Native of the Cape of Good Hope. Erica patersòniaéa, Bedf. eric. wob. p. 18. Erica Patersònia cocinea, Andr. heath. 3. t. 11. Corolla deep reddish-orange or scarlet.


₁₀₂ S. carináta; leaves 5 in a whorl, reflexed, woolly; flowers terminal; bracteas remote from the calyx; corolla with a cylindrical, inflated, ribbed tube; crests of anthers plumose; style a little exerted. ₇. G. Native of the Cape of Good Hope. Erica carináta, Loddd. bot. cab. 1071. Corollas reddish-purple.


₁₀₃ S. foliósæ. We know nothing further about this species. ₇. G. Native of the Cape of Good Hope. Erica foliósæ, or foliàceæ, Andr. heath. vol. 4. with a figure. Flowers of a orange-yellow colour.


₁₀₄ S. spíca’ta; leaves linear, subulate, hispid, spreadingly reflexed, 5-6 in a whorl; pedicels very short; bracteas sessile; flowers axillary, crowded, verticillately spicate, drooping; calyces segments callous, spatulate, entire; corolla dewy, 7-9 lines long, cylindrical; genits inclosed; anthers awned. ₇. G. Native of the Cape of Good Hope. Erica spíca’ta, Thunb. diss. no. 71. with a figure. Wendl. eric. fasc. 2. p. 27. with a figure. Erica sessilifóra, Lin. suppl. 222. Ericafavósæ, Sal. in Lin. trans. 6. p. 365. Corolla yellowish-green.

Var. β; corolla 5-7 lines long, having the segments contiguous at the base. ₇. G. Erica spíca’ta, Andr. heath. 1. t. 11. Loddd. bot. cab. 1208. Flowers greenish-yellow.


₁₀₅ S. fæsculáris; leaves 8 in a whorl, narrow-linear, obtuse, glandularly ciliate, spreading, a little recurved; bracteas remote from the calyx; flowers crowded, axillary, verticillate, near the tops of the branches, horizontal; corolla 13 lines
long, viscid, with a cylindrical clavate tube and an erect limb; pedicels and bracteas glandular; style a little exerted; awns of anthers subulate. \( \gamma \). G. Native of the Cape of Good Hope. Erica fasciculáris, Lin. suppl. 219. Pl. kew. t. 6. Erica coro-
náta, Andr. t. 12. Bedd. eric. wob. pl. 11. f. 17. Erica oct-


106 S. \( \gamma \) scepfriformis; leaves 8 in a whorl; stem straight; pedicels very short, axillary, crowded; calyx ciliolate, with broad, spatulate, deeply serrated segments; corolla 7-10 lines long, downy. \( \gamma \). G. Native of the Cape of Good Hope. Erica scepfriformis, Sal. in Lin. trans. 6. p. 365. Erica enneaphylla, Roxb. ms.


107 S. \( \gamma \) rolfiformis; leaves hairy, linear, 6 in a whorl; bracteas close to the calyx; flowers terminal; corolla 4-5 lines long, viscid, with an urceolar tube; awns of anthers short, cuneated. \( \gamma \). G. Native of the Cape of Good Hope. Erica rolfformis, Sal. in Lin. trans. 6. p. 366. Erica mammósa, Thunb. diss. no. 69. with a figure.


† **Species hardly known.**

108 S. \( \gamma \) hisro'ta; leaves 4 in a whorl, hairy, hoary, linear; flowers axillary, crowded, verticillate; anthers awned. \( \gamma \). G. Native of the Cape of Good Hope. Erica hirsuta, Lodd. bot. cab. 754. Corolla with a red base and white apex.


109 S. \( \gamma \) sponda; leaves linear, 4 in a whorl, glabrous; flowers terminal and axillary; bracteas distant from the calyx; corolla tubular, drooping; anthers?. \( \gamma \). G. Native of the Cape of Good Hope. Erica rúbida, Lodd. bot. cab. 1166. Pedicels and calyxes red. Corollas white.


110 S. \( \gamma \) espósa; leaves 4 in a whorl, hairy, calyx, bracteas, and pedicels, clothed with glandular hairs; flowers terminal, by three or four; corolla cylindrical. \( \gamma \). G. Native of the Cape of Good Hope. Erica espósa, Lodd. bot. cab. 1521. Flowers red.


111 S. \( \gamma \) elongáta; leaves hoary, linear, 4 in a whorl; flowers terminal; corolla hairy at top. \( \gamma \). G. Native of the Cape of Good Hope. Erica elongáta, Lodd. bot. cab. 738. Flowers white.


112 S. \( \gamma \) rollinósi; leaves 4 in a whorl?; flowers nearly terminal, verticillate; corolla with a straight cylindrical tube. \( \gamma \). G. Native of the Cape of Good Hope. Erica Rollinósi, Hort. Bedd. eric. wob. p. 21. Flowers purplish-red.


**XVI. DASYANTHES (from dasan, dasan, hairy, and \( \sigma \) theo, \( \sigma \)theo, anther, a flower; in reference to the corolla, which is hairy).** D. Don, in edinb. phil. journ. 17, p. 156.—Erica species of Lin.

**LIN. SYST. Octándria, Monogyinia.** Calyx 4-parted, bifracteate at the base. Corolla tubular, hispid, with an erect 4-lobed limb. Stamens inclosed; filaments capillary; anthers biparti-
tite; cells of anthers mastic at the base, dehiscing longitudinally. Stigma large, peltate. Capsule 4-celled, many-seeded.—An erect shrub, native of the Cape of Good Hope. Leaves loosely imbricate, hispid from bristles, with revolute margins. Flowers terminal, fascicled, yellow.


**XVII. ECTASIS** (from extráe, ectasis, extension; from the stamens being much exerted). D. Don, in edinb. phil. journ. 17. p. 156. Erica species of authors.

**LIN. SYST. Octándria, Monogyinia.** Calyx 4-leaved, glumaceous. Corolla tubular, rather verticose at the base, with a 4-
toothed limb. Stamens much exerted; filaments dilated; an-
thers bifartite; cells of anthers elongated, tubular, dehiscing by a longitudinal fissure, continuous, with the base of the filaments mucous. Stigma clavate, truncate. Capsule 4-celled, many-
seeded. Seeds ovate, compressed, smooth, shining.—Muel-
branches shrubs, natives of the Cape of Good Hope. Leaves loosely imbricate, with revolute edges, flat above, 3 or 4 in a whorl, but mostly the latter number. Flowers terminal, solitary or numerous.

§ 1. **Flowers lateral. Calyx bractless.** Normal species.

1 E. \( \gamma \) Petívérí (D. Don, l. c.) leaves spreadingly recurved, ciliolate; flowers solitary; corolla cylindrical; fruit ovate. \( \gamma \). G. Native of the Cape of Good Hope. Erica Petívérí, Linn. mant. 292. diss. no. 50. Lodd. bot. cab. 1426. Erica Petí-


**Var. β;** corollas of a dirty rusby colour. \( \gamma \). G. Erica Petívérí, Thunb. diss. 21.

**Var. γ, hirsuta (Andr. heath. 2. t. 72.) leaves hairy; corollas deep red.**


2 E. \( \gamma \) Pluknetí (D. Don, l. c.) bracteas cuneated, remote from the calyx; corolla ovate, pyramidal or conical, smooth.

**Var. β;** calyx 4½ to 3 lines long; corolla purple, with orange-
cooured anthers, 6-7 lines long. \( \gamma \). G. Erica Pluknetí, Linn. spec. ed. 2. p. 506. exclusive of the synonyms. Erica Pluknetí nána, Andr. heath. 1.

**Var. γ;** calyx 1 line long; corolla white, 3 to 3½ lines long. \( \gamma \). G. Erica Petívérí β, Thunb. diss. no. 21.

**Var. ε;** calyx 2½ lines long; corolla white, 3 to 3½ lines long. Sal. in Lin. trans. 6. p. 346.

**Var. ζ;** calyx 5 lines long; corolla white, 5-8 lines long.

**Var. τ, penicillát(a) (Alt. hort. kew. 2. p. 361,) corolla red-
dish purple, with orange-red anthers. \( \gamma \). G. Erica penicillá-

lát(a), Andr. heath. 2. t. 69. Lodd. bot. cab. 1918. Erica Pluknetí interíptá, Wendl. eric. 2. p. 21, with a figure.


3 E. **bruníades;** leaves 3 in a whorl, linear-oblong, erect, short, villously tomentose; flowers terminal, subumbellate, drooping; bracteas remote from the calyx, 4-leaved; corolla campanulate, much longer than the calyx, which is very villous and silky; nectarium astagaliform, silky. \( \gamma \). G. Native of the Cape of Good Hope. Erica bruníades, Linn. mant. p. 378. diss. no. 52. with a figure of the flower. Wendl. eric. 16. p. 53, with a figure. Lodd. bot. cab. 1365. Erica carbasína, Sal. in
Lin. trans. 6. p. 333. Corolla 1½ line long, white or pale red, also yellow.

**Brassia-like Ectasis.** Fl. April, July. Clt. 1790. Shrub 1½ ft.

4 E. valleræflora ; leaves 3 in a whorl, linear, downy or hairy, spreading, rather remote; flowers terminal, by threes; bracteas remote, quadridif; corollas globose, urceolar, a little longer than the calyx, which is large, and densely clothed with silky hairs; nectarium cotyliform, glabrous. G. Native of the Cape of Good Hope. Erica valleræflora, Sal. in Lin. trans. 6. p. 333. Ait. hort. kew. 3. p. 365. Erica brunnidæ, Andr. heath. 1. t. 37. Erica villosa, Pluk. mant. 69. t. 347. f. 9. Wendl. eric. fasc. 16. p. 65. with a figure. Erica capitâta, Thumb. eric. no. 15. Calyx and corolla pale red. Anthers black. Corolla 1½ line long.


§ 2. Flowers terminal. Calyx imbricated by numerous scales at the base. Aberrant species.


Var. β, alba; flowers white.


6 E. vestiflora; leaves incurvally spreading, pilose while young; flowers solitary, terminal; corolla with a cylindrical tube, 7–9 lines long. G. Erica vestiflora, Sal. in Lin. trans. 6. p. 346. Erica Petiviriâna, Roxb. ms. Corolla rufous.

**Flowering Ectasis.** Fl. March, June. Clt. 1795. Sh.


Var. γ, râbra; flowers reddish-orange at top, and reddish-purple at the base; anthers orange-yellow.


**Pump-flowered Ectasis.** Fl. April, May. Clt. 1799. Sh.

9 E. furfurâs; leaves incurvatively spreading, downy; flowers by threes; corolla viscid, cylindrical; filaments very broad; nectarium cotyliform. G. Native of the Cape of Good Hope. Erica furfurâs, Sal. in Lin. trans. 6. p. 348. Erica monadelphà, Andr. heath. 1. t. 65. Sims, bot. mag. 1370. Corolla white, with a red border, and orange-yellow anthers.


10 E. monadelphà; corolla with a cylindrical tube, and reflexed segments; filaments very broad. G. Native of the Cape of Good Hope. Erica monadelphà, Beddf. eric. wob. p. 15. pl. 2. f. 12. Erica Banksaâna purpureà, Andr. heath. 3. t. 57. Corolla greenish-white or yellow, with a purple border, and yellow anthers.—Perhaps the same as the preceding.


14 E. penicilliflora; leaves ciliated, erect; flowers by threes; corolla 2 lines long, covered by the calyx, with a spherical tube; anthers concurring into a pencil-form. G. Native of the Cape of Good Hope. Erica penicilliâs, Sal. in Lin. trans. 6. p. 348. Erica Petiviriâs vîra, Hortul. Erica calyculâta, Wendl. eric. 4. p. 5. with a figure. Bracteas and calyces white. An elegant species.


15 E. flâcenteflora; leaves very obtuse; corolla covered by the calyx, with a turnip-formed tube; filaments gradually dilated; stigma narrow. G. Native of the Cape of Good Hope. Erica placentaeflora, Sal. in Lin. trans. 6. p. 348. Herb pale, hoary.

**Placenta-flowered Ectasis.** Shrub.

16 E. pudibusâna; leaves 3–4 in a whorl, rather viscid; flowers terminal, by threes; calyces ciliated; corolla conical, viscid. G. Native of the Cape of Good Hope. Erica pudibusâna, Sal. in Lin. trans. 6. p. 345. Erica nâtans, Wendl. eric. fasc. 3. p. 5. with a figure. Corolla 2 lines long; anthers broad, hairy. Fruit turbinate, hairy. Flowers pale red?


17 E. râfâliflorus; leaves 3 in a whorl, remote, narrow, recurved, clothed with viscid pubescence; calyx bracteate; corolla 1 line long, glabrous, with a recurved tube; filaments broad at the top; stigma narrow; fruit smooth. G. Native of the Cape of Good Hope. Erica filiformis, Sal. in Lin. trans. 6. p. 345. Filiaformis Ectasis. Shrub.


**Starry Ectasis.** Fl. April, June. Clt. 1810. Shrub.


20 E. ? tûrgida; leaves 3 in a whorl; flowers terminal; pediclea very short; corolla hairy, ½ line long, with a bulged tube; spurs of anthers cuneated; anthers very short. G. Native of the Cape of Good Hope. Erica tûrgida, Sal. in Lin. trans. 6. p. 345. Erica flûscûrubens, Roxb. ms. Flowers brownish-red.

**Turgid-flowered Ectasis.** Shrub.

**Colt.** For culture and propagation see Erica, p. 800.
XVIII. ERIODÈSMA (from ἐρως, erion, wool, and ἐσμυς, desme, a fascicle; the flowers resemble a fascicle of wool). D. Don, in edinb. phil. journ. 17. p. 156. Erica capitisata, Lin. &c.

Lin. syst. Octándria Monogynia. Calyx large, 4-parted, bisected at the base. Corolla campanulate; limb 4-lobed, revolute. Stamens exserted; filaments dilated, flat; anthers bidentate, obtuse, scabrous from papillae; cells of anthers differing by an oblong pore, having the base continuous with the filaments. Stigma capitate. Capsule 4-celled, many-seeded. Seeds angular, shining.—An erect branched shrub. Leaves 3 in a whorl, obtuse, very hairy. Flowers terminal, solitary or by threes, forming a very hairy head.


Cult. For culture and propagation see Erica, p. 800.

XIX. OCTOPERA (from ὠκτα, octo, eight, and πέρα, pera, a sack; in reference to the 8-celled capsule). D. Don, in edinb. phil. journ. 17. p. 156.—Erica Bergiana, Lin.

Lin. syst. Octándria Monogynia. Calyx 4-parted, reflexed, naked at the base. Corolla globose, with a contracted bluntly 4-lobed mouth. Stamens inclosed; filaments flat; cells of anthers very short, dehiscing by a large foramen, furnished with a lanceolate acuminate crested appendage at the base. Stigma peltate. Capsule 8-celled, many-seeded.—A procumbent downy shrub, native of the Cape of Good Hope. Leaves broad, 4 in a whorl. Flowers terminal, umbellate; pedicels scaly.


Cult. For culture and propagation see Erica, p. 800.

XX. EREMÍA (from ερεμος, eremos, solitary; from the seeds being solitary in the cells). D. Don, in edinb. phil. journ. 17. p. 156.—Erica Totta, Thunb.

Lin. syst. Octándria Monogynia. Calyx 4-parted, imbricated by bracteas at the base; segments broadly orbicular, ciliate, coriaceous. Corolla urceolate, with a small 4-lobed limb. Stamens inclosed; filaments capillary; anthers bipartite; cells of anthers short, mucile at the base, opening by an oblong hole. Stigma capitate. Capsule 4-celled; cells 1-seeded. Seeds large, elliptic, ventricose.—A diffusely branched shrub, native of the Cape of Good Hope. Leaves spreading, hispid from bristles. Flowers glomerate.


Cult. For culture and propagation see Erica, p. 800.

XXI. SALAXIS (from salax, unchaste; but the application is not evident). Sal. MSS. spec. 2.


Leaves from 3 to 6 in a whorl, with revolute margins. Flowers somewhat racemose at the tops of the branches.

1 S. ARBORESCENS (Willd. ex Spreng, syst. 2. p. 20.) leaves 3 in a whorl, nearly terecet, adpressed; pedicels downy. ñ. G. Native of the Mauritius.

Arborescent Salaxis. Shrub.

2 S. MONTÁNA (Willd. l. c.) leaves 3 in a whorl, adpressed, tetragonal; pedicels glabrous. ñ. G. Native of the Mauritius.

Mountain Salaxis. Shrub.

3 S. AXILLÁRIS (Salisb.) leaves 3 in a whorl, glabrous; flowers racemose; corolla globose; branches tomentose. ñ. G. Native of the Cape of Good Hope. Erica axillaris, Th. diss. no. 10.

Axillary flowery Salaxis. Shrub.

4 S. ABÉRINA (Willd. l. c.) leaves generally 3 in a whorl, linear, spreading. ñ. G. Native of the Mauritius.

Fir-like Salaxis. Shrub.

Cult. Turfy peat mixed with rough sand is the best soil for the species of Salaxis; and young cuttings of these strike root readily in sand, under a bell-glass, in a little heat.


Lin. syst. Octándria Monogynia. Calyx 4-parted, membranous, coloured, furnished with 4 bracteas at the base. Corolla campanulate, 4-lobed, shorter than the calyx. Stamens inclosed; filaments dilated; anthers bipartite, biappendiculate at the base; cells of anthers mucronulate, dehiscing lengthwise. Stigma capitate. Capsule with a septical dehiscence. Seeds ovoid, smooth.—A small spreading shrub, native of Europe. Leaves trigonal, obtuse, very short, imbricating in 4 rows, having the margins revolute, and the base sagittate. Flowers disposed in long terminal spicate racemes.

1 C. Vul'

2 3. Native

3 4. European


Var. a, purpurea; flowers purplish-red.

Var. β, spária; flowers purplish-red; spikes short; branches tufted.

Var. γ, decumbens; flowers purplish-red; spikes short; branches decumbent.

Var. δ, tomentosa; flowers purplish-red; leaves and branches woolly.

Var. ε, filiculba; flowers white, less crowded; corolla shorter.

Var. ι, flore pleno; flowers double, pale purplish-red.

Var. κ, folius variegátis; leaves variegated; flowers purplish.

Var. θ, purpurina; leaves variegated with yellow.

Var. ω, cocicina; flowers deep red.

Var. χ, spicíata; spikes long; flowers red, or white.


Cult. The varieties of Calluna vulgaris are very ornamental when planted in a border or clump, along with the dwarf hardy species of Erica and their varieties, as Erica ciliáris, E. tétrálax, E. cínera, and Gypsócalis multífíora, G. vágans, &c. The border in which they are grown requires to be composed of peat soil. All are increased by layers, or young cuttings under a bell-glass.

Subtribe II.

ANDROMEÖDEEE, (this Subtribe contains plants agreeing with Andromeda in the Corolla being dead.) D. Don, in Edinb. phil. journ. 17. p. 157. Corolla deciduous.

XXIII. ANDROMÉDA (named from the daughter of Cepheus, rescued from the sea-monster by Perseus). D. Don, in
Andromeda, species of Authors. Polifolia, Buxbaum, cent. 5. p. 5. t. 55. f. 1.

**LIN. SYST. DECANDRIA, MONOGYNIA.** Calyx 5-leaved; segments acute, simple at the base. Corolla globose, with a contracted 5-toothed mouth. Stamens 10, inclosed; filaments bearded; cells of anthers short, timid, furnished with one awn each, (f. 136 g.) Style dilated at the base, (f. 136, d.); stigma obtuse. Capsule with a loculicidal dehiscence; valves bifid at the apex. Placenta 5-lobed: lobes simple. Seeds oblong, compressed, shining.—Small heath-like shrubs, natives of Asia and North America. Leaves small, imbricated. Flowers solitary, penduculate, rose-coloured, lateral or terminal.

* Leaves flat.

**FIG. 136.**

1 C. Hynoïdes (Don. l. c.) leaves oblong, acerosus. H. Native of Lapland, Denmark, and Siberia, on the mountains, where it covers tracts of land; and on the north-west coast of America. Andromeda hynoïdes, Lin. spec. 563. fl. lapp. 165. t. 1. f. 3. Oed. fl. dan. t. 10. Pall. fl. ross. p. 55. t. 73. f. 2. Hook. bot. mag. t. 2936.—A small creeping shrub, resembling a moss. Flowers small, with a red calyx, and white corolla.


2 C. Lycopodioides (Don. l. c.) leaves ovate, adpresso, imbricata in 4 rows. H. Native of Siberia and the Island of St. Lawrence. Andromeda lycopodioides, Pall. fl. ross. p. 55. t. 73. f. 1. Flowers red. A small moss-like creeping shrub.

**Club-moss-like Cassiope.** Shrub creeping.

* * Leaves imbricated in 4 rows, adpresso, with revolute margins, timid, somewhat bilocular.

3 C. Tetradoxa (Don. l. c.) leaves obtuse, mutic, minutely ciliat; peduncules glabrous. H. Native of Lapland and Siberia; of North America, in Canada, Labrador, and the north-west coast; Island of St. Lawrence, Kotzebue Sound. Andromeda tetradoxa, Lin. spec. 563. fl. lapp. 166. t. 1. f. 4. Pall. fl. ross. p. 50. t. 73. f. 4. Hook. bot. mag. t. 3181. Flowers white.


5 C. Ericoides (Don. l. c.) leaves awned, setosely ciliat; peduncules glabrous. H. Native of Dahuria and Kamtschatka. Andromeda ericoides, Pall. fl. ross. p. 56. t. 73. f. 3. Flower?

**Heath-like Cassiope.** Shrub ½ foot.

6 C. Fastigia (Don. l. c.) leaves elongated at top, with scarios membranous margins; peduncules woolly. H. Native of Nepal and Mongol. Andromeda fastigia, Wall. pl. rar. asiat. 3. t. 254. Andromeda cupressiformis, Wall. mss. ex D. Don, in mem. wern. soc. 3. p. 411. prod. fl. nep. p. 130. Flowers pale red.

**Fastigiate Cassiope.** Shrub procumbent.

7 C. Redowski; leaves scale-formed, shining, smooth, fringed, imbricating in 4 rows, making the branches appear exactly tetragonal; pedicels axillary, glabrous. H. Native of the east of Siberia. Andromeda Redowskii, Cham. et
ERICACEÆ. XXV. CASSANDRA.

Schlecht. in Linnaea. 1. p. 517. Shrub procumbent, much branched. Flowers drooping. Calyx deeply 4-parted. Corolla campanulate, quadrifid, with very blunt segments. Stamens 8, very short; anthers 2-celled, biaristate, the cells opening by a pore at the apex. Capsule 4-valved; valves septiferous at the middle.

Redovski's Cassiope. Shrub procumbent.

Cult. All the species are delicate little shrubs; they grow well in a peat border, or in pots well drained with sherd's in the same kind of soil; and may be increased by layers.

XXV. CASSANDRA (a mythological name of the daughter of Priamus and Hecuba). D. Don, in edinb. phil. journ, July, 1834. Andromeda species, Lin. and others.

Lin. syst. Decândria, Monogynia. Calyx 5-leaved, bifractente at the base; leaflets imbricated at the base. Corolla oblong, with a contracted 5-toothed mouth. Stamens 10, inclosed; filaments glabrous, simple at the base; cells of anthers elongated, and tubular at the apex, mutic. Stigma annular, with a 5-tubercled disk. Capsule with a loculicidal dehiscence. Placenta 5-lobed: lobes simple. — An evergreen shrub, common in North America, north of Europe, and the north of Asia. Branchlets recurved, pubescent. Leaves on short petioles, elliptic-oblong, denticulated, coriaceous, veinless, lepidotted on both surfaces by peltate scales, when young silvery beneath. Flowers axillary, on short pedicels, drooping, snow white, disposed in the manner of racemes at the tops of the branches.

1 C. calyculata (D. Don, l. c.) leaves elliptic-oblong, blunting, obsolescently serrulated, rusty beneath; racemes recurved, leafy; bracteas of calyx broad, ovate, acuminate; corollas oblong-cylindrical. ♀. H. Native of North America, from Canada to Virginia, in bogs and swamps, on the mountains. It grows also in Sweden, Prussia, Siberia, &c. Andromeda calyculata, Lin. spec. 565. Pall. fl. ross. 2. p. 53. t. 71. f. 1. Lodd. bot. cab. 1464.

Var. a, ventricosa (Sims, bot. mag. 1286.).

Var. b, latifolia (Lodd. bot. cab. 530.).

Var. γ, nanus (Sims, bot. mag. 862. Lodd. bot. cab. 826.).

Calyculata - flowered Cassandra. Fl. April, May. Fl. 1748. Shrub 1 to 3 feet.

2 C. angustifolia; leaves linear-lanceolate, acute, with subundulated revolute edges, rusty beneath; racemes recurved, leafy; bracteas of calyx minute; corollas oblong-ovate. ♀. H. Native of Carolina and Georgia, in open swamps. Andromeda calyculata, β, angustifolia, Æit. hort. kew. 2. p. 70. Andromeda angustifolia, Pursh. fl. amer. sept. 1. p. 291. Andromeda crispa, Desf. and Link.

Narrow-leaved Cassandra. Fl. April, May. Fl. 1748. Shrub 1 to 2 feet.

Cult. For culture and propagation, see Lyonia, p. 813.

XXVI. ZENOBIA (a queen of Palmyrensis). D. Don, in edinb. phil. journ, july, 1834. Andromeda species, Michx.


1 Z. spectosa (D. Don, l. c.) leaves oval, obtuse, mucronate, crenated, or serrate, veiny; floriferous branches naked, racemose. ♀. H. Native of North Carolina, in swamps. A very ornamental little shrub. Flowers large, white, drooping. Andromeda speciosa, Michx. fl. bor. amer. 256. Lodd. bot. cab. 551.

Var. a, nütida (Pursh. fl. amer. sept. 1. p. 294. under Andromeda); leaves oblong—ovate, serrated, green on both surfaces. ♀. H. Andromeda cassinifolia, Vent. malm. 79. Flowers white.


Cult. See Lyonia, p. 831. for culture and propagation.

XXXVII. LYONIA (in memory of John Lyon, an indefatigable collector of North American plants, who fell a victim to a dangerous epidemic amidst those savage and romantic mountains, which had so often been the theatre of his labours). Nutt. gen. amer. 1. p. 268. D. Don, in edinb. phil. journ. 17. p. 158.

Lin. syst. Decândria, Monogynia. Calyx 5-parted. Corolla ovate or tubular, with a 5-toothed contracted mouth. Stamens inclosed; filaments flattened, dilated, very short, downy; cells of anthers membranous, dehiscing lengthwise, altogether mutic. Style robust, pentagonal, fusiform, thickened at bottom; stigma simple, truncate. Capsule pentagonal, 5-celled, with a loculicidal dehiscence; margins of valves closed by 5 other external narrow valves. Seeds accicular, imbricated. — Shrubs, natives of North America. Leaves usually membranous and downy. Flowers for the most part terminal, disposed in racemose panicles.

* Leaves evergreen.

1 L. ferruginea (Nutt. gen. amer. p. 266.) shrubby; leaves on long petioles, coriaceous, obovate, usually obtuse, quite entire, with hardly revolute edges, covered with brown umbilicate furfuraceous scales, as well as every other part of the plant; pedicles axillary, collected into threes or fives; corollas small, ovate-globose. ♀. H. Native of Georgia, Florida, and Mexico, in pine woods. Andromeda ferruginea, Wats. fl. car. 158. Vent. malm. t. 80. Andromeda, ferruginea, β, fruticosa, Michx. fl. amer. bor. 1. p. 252. Corollas white inside, and rusty outside.


2 L. rüdda (Nutt. gen. amer. 1. p. 266.) arboreascents; leaves coriaceous, stiff, crowded, on short petioles, cuneate-lanceolate, acute, quite entire, convex, with revolute edges, clothed with brown, umbilicate furfuraceous scales, as well as every other part of the plant; pedicles aggregate, axillary; corollas globose. ♀. H. Native of Carolina and Florida, in barren sandy woods. Andromeda ferruginea, Wildl. spec. p. 2. 609. Ait. hort. kew. 2. p. 67. Andromeda ferruginea, a, arborascens, Michx. 1. p. 252. Andromeda rüdda, Pursh. fl. amer. sept. 1. p. 292. Lodd. bot. cab. 430. Corollas white inside. This species is very nearly allied to the preceding; but their habits, and particularly their flowering time, differ so materially, that they are actually distinct.


3 L. marnina (D. Don, in edinb. phil. journ. 17, p. 159.) quite glabrous; branchlets somewhat 3-sided; leaves coriaceous, oval, acuminate, quite entire, smooth, having the midrib running through the deflexed margin; pedicles axillary, aggregate; corollas cylindrical; calyce segments elongated, linear, coloured. ♀. H. Native of Carolina and Florida, in sandy forests.

Var. r. rubra (Lodd. bot. cab. 672.) flowers deep red.


* * * Leaves deciduous.

4. L. Mariana (D. Don, in edinb. phil. joum. 17, p. 159.) leaves oval, acutish at both ends, quite entire, glabrous, rather coriaceous, paler beneath; floriferous branches almost leafless; pedicels aggregate; corolla ovate-cylindrical; calyx foliaceous; capsule conoid. H. Native from New England to Florida, in woods and dry swamps, particularly in sandy soil. Andromeda Mariana, Lin. spec. 564. Sims, bot. mag. 1579. Pluk. mant. 448. A dwarf shrub. Flowers large, white, sometimes tinged with red. This plant has a number of very striking varieties.


5. L. racemosa (Don. 1. c.) leaves oval-lanceolate, acute, serrated, membranous, glabrous; spikes terminal, secedum, elongated, simple, or branched; bracteae linear, acute; corollas cylindrical; calyces acutish, biciliate at the base. H. Native from Canada to Carolina, in bogs and swamps. Andromeda racemosa, Lin. spec. 564. Lher. stirp. 2. t. 13. Andr. paniculata, Walt. carol. 138—Gron. virg. 67. Flowers white. A middle-sized shrub, which may be reckoned one of the finest in North America, not only for the graceful appearance of its flowers, but also for the fine odour they have. The cells of the anthers are said to be biserial at the apex; it is, therefore, probably, a species of Zenobia. There are several varieties of the plant.


6. L. arboresc (D. Don, l. c.) branches terete; leaves oblong, acuminate, mucronately serrated, glabrous; panicles terminal, or many spikes; corollas ovoid-cylindrical, downy. H. Native from Pennsylvania to Florida, in the valleys of the Alleghany Mountains. Andromeda arboresc, Lin. spec. 565. Sims, bot. mag. 905. Catesb. car. 1. t. 71. A beautiful tree, from 40 to 60 feet high. Flowers white. The leaves have a very pleasant acid taste, from which it has been called sorrel-tree. They are frequently made use of by hunters in those mountains, to alleviate thirst.


7. L. paniculata (Nutt. gen. amer. 1. p. 266.) downy; leaves obovate-lanceolate, subacuminate at both ends, and almost entire; floriferous branches terminal, panicled, nearly naked; clusters of flowers pedunculate; corollas nearly globose, downy. H. Native from Canada to Carolina; common in all swamps and woods. Andromeda paniculata, Lin. spec. 564. Lher. stirp. nov. 2. t. 12. Wats. dendr. brit. 37. Flowers small, white. There are a number of varieties of this species, differing in size, pubescence, shape of leaves, &c. Upper surfaces of the older leaves nearly smooth.


8. L. frondosa (Nutt. gen. amer. 1. p. 267.) every part of the plant is densely clothed with powdery villi; leaves oblong, or oblong-obovate, blunt, or acutish, clothed with furfuraceous villi, often rusty, prominently veined: with revolute, entire, scabrous margins; panicle terminal, panicose or leafy; corollas globose, hispid or downy. H. Native of the lower counties of Virginia and Carolina. Andromeda frondosa, Pursh. fl. amer. sept. 1. p. 295. Flowers white. Pursh says the anthers are awned; but Nuttall thinks this must be a mistake, or that his plant must be different from that of Pursh.


9. L. multiflora (Wats. dendr. brit. 128.) leaves narrow-lanceolate, serrated, sprinkled with hair-like atoms; panicle terminal, composed of numerous fascicled racemes. H. Native of North America. Flowers numerous, small, white. Perhaps only a variety of L. paniculata.


10. L. Jamaicaeensis (D. Don, in edinb. phil. joum. 17, p. 159.) branches smooth; leaves broad—lanceolate, quite entire, cinereous beneath from dot-like scales, but shining above; pedicels aggregate, on long leafless branches, scaly as well as the calyces; corollas ovate. H. S. Native of Jamaica, on the tops of the mountains. Andromeda Jamaicensis, Swartz. fl. in. occ. 2. p. 888. Flowers white.

Jamaicca Lyonia. Shrub 6 feet.

11. L. fasciculata; leaves ovate-lanceolate, blunting, a little crenated, coriaceous; racemes shorter than the pedioles; pedicels aggregate, reflexed. H. S. Native of the south of Jamaica, on the mountains. Andromeda fasciculata, Swartz. fl. ind. occ. 2. p. 836. Flowers white.

Fascicled-flowered Lyonia. Tree.

12. L. capreifolia (Wats. dendr. brit. 127.) leaves coriaceous, elliptic, short-acuminate, serrated, sprinkled with short fleshy hairs; corollas rather silky, globrular, coarctate; racemes and coryrams mixed, lateral, leafy. H. Native of North America. Flowers white. Perhaps only a variety of L. paniculata.


Rusty Lyonia. Shrub.

14. L. rhomboidalis; shrubby; floriferous branches tricquetrous; leaves somewhat rhomboid-oblung, cartilaginous, glabrous, rusty beneath, quite entire, callous at the apex; peduncles axillary, aggregate, elongated, filiform. H. Native of Florida and Carolina. Andromeda rhomboidalis, Duham. ed. nov. abr. 192.

Rhomboid-leaved Lyonia. Shrub.

Cult. The species thrive best in peat soil, or a sandy loam. Being very ornamental, they are desirable shrubs in every garden. They may either be increased by layers or by seeds. The seeds should be sown in pots or pans in sandy peat soil; they should be covered slightly with earth, as they are extremely small.

XXVIII. LEUCOTHOE (a mythological name). D. Don, in edinb. phil. joum. 17, p. 159. Andromeda species of authors.

Lin. syst. Decandria, Monogynia. Calyx 5-leaved; leaves imbricated at the base. Corolla tubular, 5-toothed. Stamens inclosed; filaments dilated, flattened, downy; cells of anthers short, truncate, mutic. Stigma ample, capitata. Capsule with a loculcular dehiscence.—Evergreen shrubs, natives of North
ERICACE.  XXVIII. LEUCOTHEE.

America. Leaves coriaceous, dentately spinulose. Flowers white, racemose, axillary, or terminal.

1 L. axillaris (D. Don, l. c.) leaves oblong or oval, acuminate, upper part carallaginously and mucronately serrated, covered by scattered glandular hairs on the under surface; young branches clothed with powdery down; racemes axillary, spicate, sessile, beset with acutish bracteas; corollas ovate-cylindrical; filaments ciliated, very short. \( \gamma \). H. Native from Virginia to Georgia, on the mountains. Andromeda axillaris, Solander in Hort. kew. 2. p. 89. Pursh. fl. amer. sept. 1. p. 292. Leaves glabrous. Flowers in short spikes, white. Capsule depressed, globose. Var. \( \beta \), longifolia (Pursh. fl. amer. sept. 1. p. 293.) leaves linear-lanceolate, very long. \( \gamma \). H. Sims, bot. mag. 2357. Andromeda Waltheri, Wats.


2 L. spinulosa; leaves petiolate, ovate-oblong, rounded at the base, gradually narrowed to the apex, acuminate, somewhat spinulose serrated, glabrous, coriaceous; racemes sub-spicate, axillary, sessile, second, rather loose, with sessile bracteas; corollas short, ovate-cylindrical. \( \gamma \). H. Native of Lower Carolina. Andromeda spinulosa, Pursh. fl. amer. sept. 1. p. 293. Andr. Catesbaei, Walt. fl. Carol. p. 137. Willd. spec. 2. p. 613. Sims, bot. mag. t. 1955. Loddd. bot. cab. 1820. Flowers white. Resembles the preceding in several respects. The figure in Cat. car. is very bad, that there can be no reference made to it.


3 L. acuminata; quite glabrous; leaves ovate-lanceolate, gradually narrowed to the top, acuminate, quite entire or unequally serrated, glabrous, shining, reticulate venied, coriaceous; racemes axillary, very short, coriaceous, nearly naked; flowers pedicellate, drooping; corollas cylindrically ovate. \( \gamma \). H. Native of Georgia and Florida, in sandy swamps. Andromeda acuminata, Ait. hort. kew. 2. p. 70. Pursh. fl. amer. sept. 1. p. 293. Smith, exot. bot. 39. And. lucida, Jacq. icon. rar. 1. t. 79. And. populifolia, Lam. encycl. 1. p. 195. A. reticulata, Walt. fl. carb. 157. Andr. formosissima, Bartr. cat. Andr. laurina, Michx. fl. amer. bot. 1. p. 253. Flowers white, in great abundance, which gives the shrub a fine appearance. The stems are hollow, and are used by the natives for making their pipe stems, from whence the name Pipe-stemmwood.


5 L. spicata; glabrous; leaves elliptic-lanceolate, acute, ovate or attenuated at the base, serrated; racemes long, lateral and terminal, secund; branchlets beset with short white hairs. \( \gamma \). H. Native from Canada to Florida. Andromeda spicata, Wats. dendr. brit. 36. Flowers white.


Cult. For culture and propagation see Lyonia, p. 831. Elegant shrubs, worth cultivating in every shrubbery for the sake of the beauty of their blossoms.

XXIX. PIE'IRIS. XXX. PHYLLODOCE.

XXIX. PIE'IRIS (one of the Muses) D. Don, in edinb. phil. journ. 17, p. 159. Andromeda species, Wall.


1 P. formosa (D. Don, l. c.) leaves lanceolate, acuminate, crenulated, glabrous, acute at the base; racemes erectly spreading, disposed in a terminal thryse; pedicels recurved, drooping, and are, as well as the calyces, pruinose; calyces segments ovate-oblong, margined, shining; corollas ovate. \( \gamma \). F. Native of Nipaul, where it is called Sheabogee and Chemata.—An evergreen tree, with the habit of Arbutus or Clithra. Pedicels unilateral. Flowers rose-coloured, each furnished with a small bractea at the base. Andromeda formosana, Wall. in asiat. res. 13. p. 295. D. Don, prod. fl. nep. 149.

Beautiful Pieris. Tree.

2 P. lanceolata (D. Don, l. c.) leaves elliptic, bluntly acuminate, quite entire, acute at the base; racemes terminal, glabrous, straight; pedicels corymbose, sessile, calyces segments roundish, ciliated; corollas ovate, downy; style inclosed. \( \gamma \). F. Native of Nipaul. Andromeda lanceolata, Wall. in asiat. res. 13. p. 300. with a figure. Andr. squamulosa, D. Don, prod. fl. nep. p. 149. A small much-branched tree. Leaves 3-4 inches long. Corollas purplish. Scales of pedicels ciliated.

Lanceolate-leaved Pieris. Tree small.

3 O. ovatifolia (D. Don, l. c.) leaves ovate, acuminate, quite entire, rounded at the base; racemes lateral, leafy, many-flowered; pedicels secund, downy; calyces segments roundish, ciliated; corollas oblong, downy. \( \gamma \). F. Native of Nipaul, at Suemba, and in Sirinagur. Andromeda ovatifolia, Wall. in asiat. res. 13. p. 391. with a table. Andr. capricida, Hamilt. msg. Branches downy. Leaves downy when young, 2-4 inches long, and 1-2 broad. Racemes numerous, elongated. Pedicels unilateral. Corolla pale flesh-coloured. The tree is poisonous to goats.


4 P. japonica (D. Don, moss.) glabrous; leaves lanceolate, crenulated, attenuated at the base, entire; racemes terminal, panicked. \( \gamma \). F. Native of Japan. Andromeda Japonica, Thunb. fl. jap. p. 181, t. 22. Leaves \( \frac{1}{2} \) to 2 inches long. Flowers red.

Japan Pieris. Shrub.

Cult. Sandy peat and a little loam is the best soil for the species of Pieris; and they may be increased by cuttings not too young, planted in sand, with a bell-glass over them.


XXXII. DABOECIA (Called St. Dabeoc's Heath, in Ireland).

D. Don, in edinb. phil. journ. 17. p. 160.—Andromeda species, Lin.—Menziesia species, Juss.—Erica species, Lin.

Lin. syst. Octandria, Monogynia. Calyx 4-parted. Corolla oval, ventricose; limb 4-toothed. Stamens 8, inclosed; filaments dilated, glabrous; anthers linear, sagittate at the base; cells of anthers parallel, loosened at the apex, dehiscing lengthwise. Stigma simple, truncate. Capsule 4-celled, with a septical dehiscence.—A dwarf, bushy, evergreen shrub, native of Ireland and the Pyrenees. Leaves elliptic, flat, clothed with white tomentum beneath. Flowers terminal, racemose, purple.


Cult. This shrub is well fitted for decorating the front of shrubberies, or to be grown on rock-work or banks. It has much the habit of a species of Heath, and is very pretty when in blossom. As the shrub grows in large dense tufts, it may be increased by division; it is also easily increased by layers or cuttings.

XXXIII. ENKIANTHUS (from ενκιάνθος, enkías, pregnant, and ἀνθός, anthos, a flower). Meladora, Sal. in hort. trans. 2. p. 156.

Lin. syst. Decandria, Monogynia. Calyx 5 cleft, furnished with coloured bracts. Corolla campanulate; with a 5-cleft limb, and with 5 pits at the base of the tube. Stamens 10, inserted in the base of the corolla; filaments toothed, pilose at base; cells of anthers avowed, opening by a pore at the apex. Style filiform. Berry 5-celled, many-seeded.—Elegant shrubs. Leaves broad, opposite, oblong-elliptic-acuminate, glabrous, green and shining on the upper surface, pale beneath, and frequently red. Bud scales red. Flowers large, terminal, drooping, shewy. The species are held in high veneration by the Chinese.


2 E. biflorus (Lour. coch. p. 276.) stem shrubby; flowers twin, terminal. $\updelta$. G. Native of the south of China. Flowers red.

**Two-flowered** Enkianthus. Shrub.

*Cult.* Elegant green-house plants while in blossom, but rather difficult of culture. The best soil for them is said to be an equal mixture of sandy loam and peat, but care must be taken not to over-water them when not growing freely. Cuttings taken from ripened wood are found to strike root freely, if planted in sand, with a hand-glass placed over them. When they grow to a considerable size, they are the greatest ornaments for a green-house or conservatory.


**Lin. syst. Decandria, Monogynia.** Calyx 5-parted. Corolla globose, or ovately campanulate: limb 5-cleft, reflexed. Stamens 10, inclosed; anthers compressed on the sides, dehiscing by 2 pores at the apex, fixed by the back beneath the apex, where they are furnished with 2 reflexed awns. Ovary seated on a hypogynous disk, or half immersed in it, 5-celled; cells many-seeded. Style 1; stigma obtuse. Berry nearly globose, granular.—Trees and shrubs, with alternate laurel-like leaves. Racemes terminal, panicled. Flowers pedicellate, bracteate. Corollas white or flesh-coloured.

1 A. unedo (Lin. spec. 366.) arboreous; branches clothed with glandular hairs; leaves oblong-lanceolate, glabrous, serrulate; petioles smooth, nodding. $\updelta$. H. Native of the south of Europe, as of Spain, Italy, Greece; Palestine, and many other parts of Asia. It is also found in the west of Ireland, in the County of Kerry, near the Lake of Killarney, on barren limestone rocks, where the country people eat the fruit. Mill. fig. t. 48. Cam. epit. 1681. Barrel. icon. t. 674. Smith, engl. bot. 2377. The common A'rbutus, or Strawberry-tree, rises to the height of 20 or 30 feet, but rarely with an upright stem. It is one of the greatest ornaments in the month of October and November, that being the season when it is in flower: and the fruit of the former year is ripe. When there is plenty both of fruit and flowers upon the trees, they make a handsome appearance at a season when most others are past their beauty. The fruit is said to have constituted part of the food of mankind in early ages. That it was not in any esteem among the ancients, we may suppose from the name U'nedo, if Pliny's reason for that name be the true one, —"cui nomen ex argumento fit unum tantum edendi." Virgil recommends the twigs as good for goats in winter:—"Jubeo frondentia capris Arbuto sufficiere;" and for baskets,—"Arbutue cratet mystica vannus Iacci." Horace celebrates the shade of it:—"Nunc viridi membra sub Arbuto stratus." The tree is named, in Greek, Καμάρης, and the fruit Μ. μμωκλων; in Latin, A'rbutus, and the fruit U'nedo; in Italian, Arbuto, Albato, Albastro, Corbezzolo; in French, L'A'rboussier commun. The Greek name is almost preserved at Constantinople, in Komaria.


2 A. Canariensis (Lam. dict. vol. 1.) leaves oblong-lanceolate, serrated, glaucous beneath; panicles erect, clothed with hispid hairs. $\updelta$. G. Native of the Canary Islands. Sims, bot. mag. 1577. Flowers greenish white.

**Canary-Island Strawberry-tree.** Fl. May, June. Clt. 1796. Shrub 8 to 10 feet.

3 A. hry'dria (Ker. bot. reg. 619.) leaves oblong, acute, serrated, glabrous; panicles pilose; panicle terminal, pendulous, downy; calyx glabrous. $\updelta$. H. Native country unknown. A. andrachnoides, Link. enum. 1. p. 395. Flowers white.

**Hybrid Strawberry-tree.** Fl. Feb. May. Clt.? Shrub 8 to 12 feet.

4 A. serratifolia (Nois. ex Lodd. bot. cab. t. 580.) leaves serrated, narrower than those of A. Andrachne; flowers disposed in terminal clusters. $\updelta$. H. Native country unknown. Flowers yellowish. Perhaps only a variety of the following.

**Serrated-leaved Strawberry-tree.** Fl. Feb. March. Shrub 6 to 10 feet.

5 A. Andrachne (Lin. spec. 566.) leaves oblong, bluntish, quite entire, and a little serrated, glabrous; panicles terminal, erect, clothed with viscid down. $\updelta$. H. Native of Greece, Asia Minor, Tauria. Belon says it is common in Crete, and between Aleppo and Antioch. Wheeler observed it near Athens, and saw the fruit in the market of Smyrna. About Magnesia it is so plentiful, that it is used as the principal fuel by the inhabitants. Ehret. act. angl. vol. 57. p. 414. t. 6. Ker. bot. reg. 113. Sims, bot. mag. t. 2024. A. integrifolia, Lam. Andrachne Theophrasti, Clus. hist. 1. p. 48. Andrachne, Park. theat. 1490. f. 2. Flowers greenish-white. Fruit like that of the common sort. This is the A'ρεσκόα of Theophrastus, and is called 'Αρέσκαλα in modern Greek. It is a fine ornamental tree; the largest of the kind in Britain is growing in the botanic garden at Edinburgh. Tournefort enumerates three varieties of it which he observed in the Levant; one with serrated leaves; a second with a large oblong fruit; and a third with large compressed fruit.


6 A. laurifolia (Lin. syst. 407. suppl. 238.) leaves oblong, acuminate at both ends, acutely serrated, glabrous; racemes axillary, second, sessile, solitary. $\updelta$. H. Native of North America, but what part is unknown, as nothing can be found respecting it in the Linnaean herbarium.

**Laurel-leaved** Strawberry-tree. Tree.

7 A. Menzie'sii (Pursh. fl. amer. sept. 1. p. 282.) arboreous; leaves broad-oval, quite entire, glabrous, on long petioles; racemes axillary and terminal, panicled, dense-flowered. $\updelta$. H. Native of the north-west coast of America, where it was collected by Mr. Menzies. Hook. et Arn. in Beech. voy. pt. bot. p. 143.
Menzies’s Strawberry-tree. Tree.
8 A. tomentosa (Pursh. fl. amer. sept. 1. p. 282.) shrubby; branches hispid; leaves oblong, acute, subcordate at the base, clothed with white tomentum beneath, on short petioles; peduncles axillary, shorter than the leaves, somewhat capitate racemose; flowers campanulately urceolate, bracteate.  h.  .  H.  Native of the north-west coast of America, where it was collected by Mr. Menzies. Hook. bot. mag. t. 3290. Hook. fl. amer. text. bot. 1529. f. 1. Flowers pure white. The whole herb, except the flowers, is downy, while young. Petioles and mid-rib of leaves hispid. Var. b. sudá (Hook. et Arn. in Beech voy. pt. bot. 144. Hook. fl. amer. bot. 129 fl.) shrub quite destitute of long stiff hairs.

9 A. xalapensis (H. B. et Kunth, nov. gen. amer. 3. p. 279.) leaves oblong, acute, quite entire, glabrous above, but clothed with fuscous pubescence above, and canescent tomentum beneath; panicle terminal, composed of many racemes.  h.  .  G.  Native of Mexico, in mountain woods near Xalapa, and at Malpays de Joya. Epidermis separating, brownish purple. Young branches glabrous, but best with ramenta. Leaves obverse at the base, 2 inches long, petiolate. Corollas ovate, white. Filaments villous, dilated at the base.

Xalapa Strawberry-tree. Tree.
10 A. mollis (H. B. et Kunth, nov. gen. amer. 3. p. 280.) leaves oblong, acute, sharply toothed, coriaceous, clothed with soft pubescence above, and canescent tomentum beneath; panicle terminal, crowded, composed of racemes.  h.  .  F.  Native of Mexico, near Guanaxauto. Branchlets purplish brown, angular, downy. Leaves petiolate. Flowers drooping? like those of the preceding.

Soft Strawberry-tree. Tree.
11 A. densiflora (H. B. et Kunth, nov. gen. amer. 3. p. 280. t. 260.) leaves on long petioles, oblong, acute, sharply toothed, coriaceous, glabrous above and shining, but clothed with fuscous pubescence beneath, and the middle nerve with rusty villi; panicle terminal, composed of approximate racemes; flowers crowded.  h.  .  F.  Native of Mexico, on the eastern declivities of the mountains between La Pileta and Xalapa. Branches angular, pilose. Petioles pilose. Leaves 4-5 inches long. Pedicels furnished with 3 bracteae at the base. Corollas oval, white. Filaments dilated and pilose at the base.

Dense-flowered Strawberry-tree. Cht. 1826. Tree 20 feet.?  12 A. petiolaris (H. B. et Kunth, l. c. p. 281.) arborescent; leaves on long petioles, oblong, acute, mucronate, with dentilicate margins, membranous, glabrous above, but clothed with canescent tomentose pubescence beneath; racemes short, crowded, forming a terminal panicle.  h.  .  F.  Native of Mexico, on the western declivities of mountains between Cuernavaca and Guichila. Epidermis separating. Leaves rounded at the base, 3 or 3½ inches long. Petioles hairy, red. Ramenta numerous at the base of the branches. Pedicels villous, canescent. Corollas ovate-globose, white. Filaments villous, dilated at the base.

Petriculate-leaved Strawberry-tree. Tree tall.

Rusty Strawberry-tree. Tree.
15 A. phlygryea (Hook. et Arn. in Beech voy. pt. bot. p. 33.) stem nearly simple, downy; leaves ovate, on short pedioles, dentilculated, coriaceous, with revolute edges, shining above, and glandular on both surfaces, the glands terminating in hairs; racemes short, axillary; rachis and pedicels downy and scaly; calyx glabrous; corolla glabrous outside, and hairy inside.  h.  .  H.  Native of Chili, about Conception. Qued-Que, Feuille, 3. p. 56. t. 43. A low-growing shrub. The fruit is described by Feuille to be a reddish brown berry, which is dangerous when eaten, causing delirium; whence the Indian name, which signifies madness.

Raging Strawberry-tree. Shrub.
16 A. punctata (Hook. et Arn. in Beech voy. pt. bot. p. 33.) much branched; branchlets downy; leaves nearly sessile, ovate-lanceolate, dentilculated, coriaceous, with revolute margins, be sprinkled with piliferous glands; racemes axillary, downy, scaly; calyx glabrous; corolla glabrous outside, but pilose inside.  h.  .  F.  Native of Chili, about Conception. Apparently a large shrub, and probably the A. phyllyreaefolia, Pers.

Dotted-leaved Strawberry-tree. Shrub.

Cult. The hardy species of this genus being all ornamental trees or shrubs, are proper for picturesque places in shruberies, or to stand singly on lawns. A. Andrachne must be protected by a mat in severe weather in winter. They are to be increased by seeds, or by budding or inarching on the commoner kinds. The green-house kinds require the treatment of common green-house plants.


Lin. syst. Decandria, Monogynia. Calyx 5-parted (f. 139. a.) Corolla globose (f. 139. b.) or ovate-campanulate; limb 5-cleft, reflexed. Stamens 10, inclosed; filaments dilated at the base, and pilose; anthers compressed at the sides, dehiscing by 2 pores at the apex (f. 139. b.), fixed by the back beneath the middle, where they are furnished with 2 reflexed awns. Ovarium seated on the hypogynous disk, or half immersed in it, usually 5-celled (f. 139. g.), rarely 6-9-celled; cells 1-seeded. Style 1; stigma obtuse. Drupe nearly globose.—Shrubs or subshrubs. Leaves alternate. Racemes terminal. Flowers pedicellate, bracteate. Corollas white or flesh-coloured. Drupes red or black.

1 A. uva-úrsi (Spreng. syst. 2. p. 287.) stems procumbent; leaves permanent, ovate, quite entire, coriaceous, shining; flowers fasciculate; drupe 5-celled.  h.  .  H.  Native of North America, in the pine barrens of New Jersey, and in mountainous and rocky situations of Canada and New England; and the Island of Unalaska. It is abundant on the continent of Europe, as in Sweden, Denmark, and most parts of the north; also in Switzerland, Germany, Carniola, Dauphiny, Savoy, Siberia, &c. With us it is common upon dry, heathy, mountainous and rocky places throughout the Highlands and Western Isles of Scotland; also in the north of England and Wales. Arbutus uva-úrsi, Lin. spec. 566. fl. lapp. no. 162. t. 6. f. 3. Woodv. med. bot. 1914. t. 70. Fl. dan. t. 33. Blackw. t. 592. Smith, engl. bot. 714. Arbutus buxifolia, Stokes, bot. 509. Uva-úrsi buxifolia Sal in Gray arr. 2. p. 400.—Schmidt. arb. t. 138. Plench. icon. 340. It is called in English Bear berries and Bear-herbelle berries, from the German, Baren-traube or Barenbeere; in Dutch, Beerdruif; in French, La Bussiere; in Italian, Uva d’orzo; in Spanish, Uba de oso; in
Portuguese, *Uva de urso*; and by most old botanists, *Uva-ursi*. Leaves like those of box. Flowers pale red, or white with a red mouth, growing in small clusters at the extremities of the branches. The leaves have been much celebrated in calculous and nephritic complaints, and other disorders of the urinary passages; the dose is half a drachm of the powder of the leaves every morning, or 2 or 3 times a day. The trials, however, made in this country by no means answered expectation. Perhaps, upon the whole, it will be found no better than other vegetable astringents; some of which have long been used by the country people in gravelly complaints, and with very great advantage. On the plains of the Mississippi, the Indians smoke the leaves under the name of *Sacaeomnis*. and consider them of great medicinal virtue. But whatever may be its medicinal qualities, the whole plant is certainly very serviceable in drying an ash-colour, but particularly in tanning leather. In this view, it may deserve attention in those countries where whole mountains are covered with it. The berries are red when ripe, filled with an austerely mealy pulp; they serve as food for grouse and other game.

**Bear-berrys.** Fl. May, June. Britain. Shrub trailing.

2 A. *alpina* (Spreng. syst. 2. p. 287.) stems procumbent; leaves ovate, acute, wrinkled, serrated, deciduous; racemes terminal. H. H. Native of Denmark, Switzerland, Dauphiny, Savoy, Siberia, &c. In many places of the Highlands of Scotland, in very sandy places. It is also found in Canada, and the more northern parts of America, Aleutian Islands, &c. *A. rubescens, Lin. spec. 566. Oed. fl. dan. 73. Smith, engl. bot. 2090. Lightf. fl. scot. 215. t. 11. f. a. b. Pedicels rather hairy. The flowers grow in reflexed racemes, and are pure white. The berries are black when ripe, and of the size of a sloe, with a taste somewhat resembling that of black currants, but more mawkish, insomuch that *Linnaeus* says the Laplanders will scarcely eat them. Haller, on the contrary, thinks the flavour not unpleasant. Mr. Miller describes them as of a pleasant taste, so as frequently to be eaten by the inhabitants of those countries where the plant grows wild.


**Polium-leaved Bear-berry.** Shrub 4 to 6 feet.


**FIG. 139.**


**Pungent-leaved Bear-berry.** Shrub 1 foot.

6 A. *Hooker*; branches prostrate, rather downy; leaves petiolate, permanent, oral or ovoborate, coriaceous, shining, minutely reticulated, mucronately pungent, smoothish, finely margined, almost quite entire; racemes terminal, short; flowers bracteate. F. F. Native of Chile. Arbutus ptinus, Hook. et Arn. in Beech. voy. pt. bot. 144. Habit of *A. ursi*, and with the leaves of the same size. Flowers small, ureculate; young leaves white from down beneath, more or less serrated.

**Hooker's Bear-berry.** Shrub prostrate.

**Cult.** The hardy species of this genus grow well in a mixture of sand, loam, and peat, or in a peat border. They are increased by layers, put down in the spring. The greenhouse kinds require the treatment of other hardy green-house shrubs.

XXXVI. PERNETTYA (named after M. Pernetty, author of a history of his voyage to the Falkland Islands). Gaud. in Freyc. voy. p. 454. t. 67.

**Lin. syst. Deciduia, Monogynia.** Calyx inferior, 5-parted. Corolla glbose: limb 5-parted, revolute. Stamens 10, almost hypogynous, inclosed; filaments thickened at the base; cells of anthers bifid, and dehiscing at the apex. Ovarium free, depressed, globose, 5-celled; cells many-seeded. Hypogynous scales or glands 10, 3-lobed, forming a ring round the ovarium, and alternating with the stamens. Style terminal, short. Stigma convex, absolutely 5-lobed. Berry propped by the rather fleshy calyx. Seeds minute, oblong-ovate.—Small, much branched shrubs, with small alternate approximate leaves; axillary, solitary, pedunculate, drooping white flowers, and bracteate peduncles. This genus agrees with Epacriceae in the presence of hypogynous scales.


**Crow-berry-leaved Pernettya.** Shrub 2 to 3 feet.

2 P. *mucronata* (Gaud. in ann. sc. 5. p. 102.) leaves ovate, cuspidate, dentiellately serrulate, stiff, shining on both surfaces; pedicels axillary, bracteate, about equal in length to the leaves. F. F. Native of Terra del Fuego, Cape Horn, and Straits of Magellan. Lindl. bot. reg. 1675. *Arbutus mucronata, Lin. fil. suppl. p. 239. Forst. in comm. geot. 9. p. 31. Graham in bot. mag. t. 3093. Lam. ill. t. 566. f. a. Lodd. bot. cab. 1848. Flowers white, drooping.

**Mucronate-leaved Pernettya.** Fl. May. Clt. 828. Shrub 2 to 3 feet.


**Small-leaved Pernettya.** Shrub 2 to 3 feet.

4 P. *myrsinifolia*; leaves ovate-lanceolate, serrated, scat-
ered; pedicels solitary, axillary, very short.  h. H. Native of
the Straits of Magellan, in woods on the mountains. Andróme-
meda myrsinitis, Lam. ill. gen. t. 365. f. 2. Leaves small.

Myrtle-like Pernettya. Shrub 2 to 3 feet. 5 P. Cavanillesiana; leaves ovate, acute, glabrous, ob-
tusely serrated; pedicels axillary, solitary, furnished with two
scales at the base; stems trailing.  h. F. Native of South
America. Andrómeda prostrata, Cav. icon. 6. p. 43. t. 562.
f. 2. Leaves green above, and rusty and veiny beneath, on
very short pedioles.

Cavanilles's Pernettya. Shrub prostrate.

6 P. pilosa; stem pilose, procumbent; leaves ovate-elliptic,
ciliately-serrulate, coriaceous, mute at the apex and callous;
pedicels axillary, 1-flowered, elongated, nutant; corolla ovate,
with blunt revolute teeth.  h. F. Native of Mexico. A. whilst
pilosa, Graham, in bot. mag. 3177. Corolla white.
Pilose Pernettya. Fl. May, Fr. May, June. Shrub pro-
strate.

7 P. purpurea (D. Don, mss. in herb. Lamb.) branchlets setose;
leaves lanceolate, acute, denticulated, glabrous, veiny
beneath; pedicels scabrous, glandular; corollas ovate.  h. F.
Native of Peru. Flowers purple.

Purple-flowered Pernettya. Shrub.

8 P. ciliaris (D. Don, l. c.) branchlets setose; leaves ovate-
lanceolate, acute, having the margins denticulated, and cili-
ated with bristles; peduncles glandular.  h. F. Native of
Mexico.

Ciliated Pernettya. Shrub.

Cult. For culture and propagation see Phyllodoce, p. 833.

XXXVII. AGARISTA (a mythological name, the beautiful
daughter of Clithenes; in reference to the beauty of
the flowers). D. Don, mss.—Andrómeda species of Comm.
and other authors.

Lin. Syst. Decandra Monogynia. Calyx fleshy, 5-lobed;
lobes imbricate at the base. Corolla ovate, with a contracted,
5-toothed, conical mouth. Stamina 10, inclosed; filaments
flattened, dilated at the base, and villous; anthers bipartite;
with short membranous cells, which are mucilaginous at the base
and diverging at the apex, opening by a terminal hole. Style robust,
terete; stigma capitulate. Capsule globose, pentagonal, 6-celled,
with a loculicidal dehiscence. Placenta thick, oblong. Seeds
angular, curved.—Evergreen shrubs. Natives of the Mauri-
tius and South America. Leaves coriaceous, reticulately veined,
quite entire. Flowers racemose, terminal, very beautiful. In-
termediate between Gaultheria and Andrómeda.

1 A. buxifolia; leaves cordate ovate, mucronulate, rusty
beneath; panicle terminal, downy, composed of racemes; flowers
secund.  h. G. Native of the Island of Bourbon. Andrómeda

Box-leaved Agarista. Fl. June, July. Cilt. 1822. Shrub 3
to 6 feet.

2 A. salicifolia; leaves lanceolate, attenuated at both ends,
white beneath; racemes simple, secund, glabrous.  h. S.
Native of the Mauritius. Andrómeda salicifolia, Comm. mss.
fl. 3. t. 199. bot. mag. 3286. Leaves 2-4 inches long. Ra-
cemes simple. Corolla oblong, ovate, beautiful purple.

Willow-leaved Agarista. Shrub 2 to 3 feet.

3 A. subrotunda; leaves roundish-elliptic, cordate at the
base, mucronate at the apex, glabrous above, but clothed with
ferruginous tomentum beneath; racemes terminal, solitary, or
fascicled, second, downy.  h. G. Native of Brazil, in the prov-
ince of Minas Geraes, on rocks about Villa St. Joao d'el Rey.

Andrómeda subrotunda, Pohl. pl. bras. 2. p. 32. t. 121.
Branches tomentose. Leaves on very short pedioles, approxi-
mate, setosely denticulated on the nerves and margins, and ter-
minating in a spinose mucrone. Corolla ovate, ventricose, pure
red or scarlet, with almost erect segments. Ovaries villous.

Roundish-leaved Agarista. Shrub 3 feet.

4 A. multiflora; leaves lanceolate, rounded at the base,
andromedas; racemes axillary, suprafloraceous; ovary glabrous.

h. G. Native of Brazil, in the province of Minas Geraes, in
mountainous places; in Serra Matuquiera. Andrómeda mul-
tiflora, Pohl. pl. bras. 2. p. 33. t. 152. Shrub much branched.
Leaves petiolead, remote, 2½ inches long and 3 lines broad.
Racemes many-flowered, secund. Bracteas oblong, acute,
ciliated. Corolla elliptic, ventricose, white, with erect seg-
ments.

Many-flowered Agarista. Shrub 6 to 10 feet.

5 A. Pohlil; leaves ovate, acute at the apex, emarginate
at the base, glabrous, painted beneath on the sides of the nerve
with dots; racemes axillary.  h. G. Native of Brazil, in the
province of Minas Geraes, in dry mountainous places of Itambe.
Andrómeda crassifolia, Pohl. pl. bras. 2. p. 34. Leaves on
short pedioles, deciduous, ½ inch long and 3 lines broad.
Racemes many-flowered, secund; bracteas oblong, glabrous.

Corollas unknown.

Pohl's Agarista. Tree.

6 A. Bracamoros; leaves ovate-oblong, obtuse, obso-
letely mucronate, with revolute margins, coriaceous, glabrous,
shining above; racemes axillary and terminal, approximate at
the tops of the branches.  h. G. Native of New Granada, in
the province of Bracamoros, near St. Felipe, and Paramo de Yama-
oca. Andrómeda Bracamoros, H. B. et Kunth, nov. gen. amer. 3.
p. 288. t. 263. Andrómeda myrtifolia, Willk. herb. Branch-
lets angular. Leaves 6-7 lines long. Bractees minute at the base
of the pedicels. Corollas scarlet, with ovate, obtuse,
revolute teeth. Stigma ciliated, hardly thicker than the style.

Bracamoros Agarista. Tree 10 to 15 feet.

7 A. Sprengeli; leaves ovate-oblong, obtuse, mucronate,
coriaceous, with revolute margins, glabrous on both surfaces;
racemes axillary, drooping.  h. S. Native of Brazil, within
the tropic. Andrómeda revoluta, Spreng. neu. end. 2. p. 131.
syst. 2. p. 291. Young leaves and young branches rather
downy.

Sprengel's Agarista. Shrub.

8 A. eucalyptoides; glabrous; leaves on long pedioles,
oblong, acuminate, obliquely rounded at the base, with
revolute margins; racemes lateral, approximate towards the tops
of the branches.  h. G. Native of Brazil, in the Rio Grande do
Sul. Andrómeda eucalyptoides, Cham. et Schlecht, in Linæa.
Leaves ½ inch long. Corolla urceolate, 3 lines long, with ob-
tuse spreading teeth, scarlet? Ovarium pubescent.

Eucalyptus-like Agarista. Shrub or small tree.

9 A. fulchra; glabrous; leaves petiole, ovate, mucronate,
coriaceous, with revolute margins; racemes secund, axillary
and terminal, glabrous, approximate at the tops of the branches;
ovary glabrous.  h. G. Native of Brazil, within the tropic.
Andrómeda fulchra, Cham. et Schlecht. in Linæa. 1. p. 541.
Branches angular. Leaves more than an inch long, larger
than those of A. nummulària. Style length of corolla. Corolla
urceolate, with short obtuse spreading teeth, scarlet.

Fair Agarista. Shrub 1 to 2 feet.

10 A. nummalaria; leaves on short pedioles, cordate, broad-
ovoate, rather retuse, mucronate, coriaceous; racemes axillary
and terminal, and are, as well as the young branches, hispid;

ovary downy.  h. G. Native of the south of Brazil, in the
province of Rio Grande do Sul. Andrómeda nummulària,
Cham. et Schlecht., in Linnaea, 1. p. 520. Leaves shining above, ciliated with long stiff hairs on the nerves beneath, and margins while young. Larger leaves 8 lines long. Racemes approximate at the tops of the branches. Calyx hairy. Style exerted. Corolla urceolate, with short, obtuse, reflexed teeth, scarlet.

**Money-wort-leaved Agarista.** Shrub 1 to 2 feet.

11. *A. neriifolia*; quite glabrous; leaves petiolate, oblanceolate, acute, ovate at the base, coriaceous; panicle terminal, composed of numerous racemes; ovary glabrous. \textsuperscript{*} S. Native of Brazil, within the tropic. *Andrómeda neriifolia*, Cham. et Schlecht., in Linnaea, 1. p. 522. Leaves 3 inches long, shining above and paler beneath. Racemes second; flowers drooping. Corollis urceolate, with short, obtuse, hardly spreading teeth, scarlet. \textsuperscript{*} Calycine segments finely ciliated.

**Nerium-leaved Agarista.** Shrub 2 feet.

12. *A. oleifolia*; leaves on short petioles, oblong, subacuminate, mucronate, acutish at the base, or rounded, with reflexed margins, flat, glabrous, coriaceous; racemes axillary, length of leaves; calycine segments ovate, acuminated, acute; corollas oblong; ovarium glabrous. \textsuperscript{*} S. Native of equinoctial Brazil. *Andrómeda oleifolia*, Cham. in Linnaea, 8. p. 504. — Flowers scarlet, with white filaments and yellow anthers. There are varieties of it having the inflorescence either hairy or glabrous.

**Olive-leaved Agarista.** Shrub 6 to 10 feet.

13. *A. serrulata*; leaves subimbricated, almost sessile, spreading, stiff, ovate, cordate, acute, reticulately veined, with reflexed margins, and serrulate-ciliate near the margin above, very scabrous, hairy on the nerve beneath as well as the branches, inflorescence, and calyces; racemes terminal, and from the axis of the upper leaves, and much exceeding them; calycine segments ovate, acuminated, acute or lanceolate, one-half the length of the corolla; ovary glabrous. \textsuperscript{*} S. Native of Brazil, within the tropic. *Andrómeda serrulata*, Cham. et Schlecht. in Linnaea, 8. p. 506. Corollas scarlet, with obtuse spreading stamens.

**Serrulat-leaved Agarista.** Shrub 2 to 3 feet.

14. *A. pistrix*; branchlets bluntly angular; leaves on short petioles, ovate-cordate, acute in the young state, and obtuse in the adult state, always mucronate, coriaceous, marginated, clothed with fine white tomentum beneath, as well as the branchlets, inflorescence, and calyces; racemes terminal and axillary, exceeding the leaves; calycine segments broad, ovate, acuminated, acute, spreading; corollas downy; ovary glabrous with white tomentum. \textsuperscript{*} S. Native of Brazil. *Andrómeda Pistrix*, Cham. in Linnaea, 8. p. 508. Leaves 15 lines long. Corollas ovoid, coriaceous, scarlet, much larger than those of *A. pulchra*. Style woolly at the base.

**Whale Agarista.** Shrub.

15. *A. chlorantha*; leaves on short petioles, ovate-cordate, obtuse, mucronate, coriaceous, glabrous, with revolute margins; branches, inflorescence, and calyces downy; racemes terminal and axillary, a little longer than the leaves; calycine segments narrow-ovate, acuminated, or lanceolate, acute, longer than the third part of the corolla, which is ovoid-cylindrical; ovary downy or villous. \textsuperscript{*} S. Native of Brazil. *Andrómeda chlorantha*, Cham. in Linnaea, 8. p. 508. A box-like shrub, with the habit of *A. Trachomerovia* and *A. revoluta*. Corollas white, green at the apex, glabrous.

**Green-flowered Agarista.** Shrub 6 to 10 feet?

16. *A. fulchella*; leaves on short petioles, cordate, ovate-oblong, mucronate, marginated, rather coriaceous, flat, pubescent on the midrib beneath while young, as well as the petioles, branchlets, and inflorescence; racemes terminal and axillary, 3-8-flowered, a little longer than the leaves; flowers on long pedicels; calycine segments broad-ovate, acuminated, acute. \textsuperscript{*} S. Native of Brazil. *Andrómeda fulchella*, Cham. in Linnaea, 8. p. 509. Like *A. neriifolia* and *A. pulchra*, but differs much in the inflorescence. Leaves \(\frac{1}{2}\) inch long. Young branches angular. Racemes crowded at the tops of the branches.

**Neat Agarista.** Shrub.

17. *A. pyrifolia*; leaves ovate, acuminated, quite entire, and as, as well as the panicle, glabrous. \textsuperscript{*} S. Native of the Mauritis. *Andrómeda pyrifolia*, Pers. ench. 1. p. 481. — Tree 20 feet high, with sulcately striated bark. Flowers obscure, purple.

**Pear-leaved Agarista.** Tree 20 feet.

18. *A. ilicifolia*; leaves cordate, broad, coriaceous, slightly toothed; racemes axillary and terminal, crowded at the tops of the branches. \textsuperscript{*} S. Native of Peru. *Andrómeda ilicifolia*, Pers. ench. 1. p. 481. Leaves on short petioles, ovate and quite entire when young, but when larger and older furnished with a few distant teeth at the base.

**Holly-leaved Agarista.** Shrub.

19. *A. eriophylla*; leaves roundish-ovate, omentose on both surfaces, and terminated by a gland, quite entire; racemes terminal, second, bracteate; corollas ovate. \textsuperscript{*} G. Native of Brazil, on the mountains. *Andrómeda eriophylla*, Vand. fl. bras. spec. Pers. ench. 1. p. 482.

**Woody-leaved Agarista.** Shrub.


**Anastomosing Agarista.** Shrub.

**Cult. Agarista** is a genus of most showy and elegant shrubs, well worth the cultivator's care. Peat and sand is the best soil for them; and cuttings not too young will strike root in sand under a hand-glass, in a moderate heat. Although the species are said to require the stove, they would probably be better if treated as greenhouse plants.

**XXXVIII. DIPLECOSIA** (from \textit{diplo} double, and \textit{cos} covering; in reference to the double covering, the calyx and calyculus.) Blum. bijdr. 857.

**Lin. Syst.** Decándria, Monogynía. Calyx 5-cleft, girded by a calyculus at the base, which is composed of 2 combined bracteas. Corolla campanulate, with a 5-cleft reflexed limb. Stamens 10, inclosed, inserted in the calycine disk; anthers bifid at the apex. the lobes undivided. Style erect; stigma truncate. Capsule subglobose, depressed, inclosed in the calyx, which is baccate, 5-celled, and dehiscing irregularly. Seeds numerous, cuneate, compressed, fixed to fleshy prominent receptacles.—Parasitical shrubs. Leaves scattered, coriaceous. Flowers solitary or in fascicles, axillary. Corollas pale-greenish. This genus is intermediate between *Andrómeda* and *Gaillthéra*. It differs from the latter in the structure of the corolla and anthers; and from the first in the baccate calyx and dehiscence of the fruit.

1. *D. pilosa* (Blum. bijdr. 858.) leaves ovate-lanceolate, acuminated, strigose above and pilose beneath, as well as the branchlets; pedicels solitary or twin. \textsuperscript{*} S. Native of Java, on Mount Salak, in woods, where it is called by the natives Kila Ge Daichjula.

**Pilose Diplecosia.** Shrub.

2. *D. latifolia* (Blum. l. c.) leaves oval, acutish at both ends, with recurved margins, glabrous; pedicels fascicled. \textsuperscript{*} S. Native of Java, upon trees on the mountains.

**Broad-leaved Diplecosia.** Fl. Year. Shrub par.
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3 D. heterophylla (Blum. l. c. p. 558.) leaves oblong or lanceolate, acuminate at both ends, nearly veinless, glabrous, dotted beneath; pedicels fascicled. \( \gamma \). S. Native of Java, on the higher mountains, on the west side of the island.

\( \vartheta \). \( \beta \). leaves cuneate-oblong, acutish or obtuse.

Variable-leaved Diploecia. Fl. Year. Shrub par.

Cult. For culture and propagation, see Agarista, p. 838.


Lin. syst. Decandra, Monogyna. Calyx 5-cleft. Corolla ovate, with a short 5-cleft limb (f. 140. h.). Stamens 10, inclosed; anthers bifid at the apex; lobes biaristate (f. 146. e.). Style 1; stigma obtuse. Hypogynous scales 10, obsolete or connate at the base. Capsule depressedly globose, 5-celled, 5-furrowed, covered by the calyx, which is sometimes baccate; valves septiforous in the middle. Placenta adnate to the base of the column. Seeds numerous, covered by a reticulated testa.

Small trees or shrubs. Leaves alternate. Flowers axillary and terminal, racemose, rarely solitary; pedicels bracteolate. Corolla white, rose-coloured, or scarlet. Filaments usually hairy.

* Flowers axillary, solitary. Peduncles or pedicels beset with some imbricated bracteas at the base.

1 G. procumbens (Lin. spec. 565.) stem procumbent; branches erect, naked at bottom, but with crowded leaves at top; leaves ovate, acute at the base, finely and ciliately toothed; flowers few, terminal, nutant. \( \gamma \). H. Native of North America, in dry woods, on mountains, and in sandy plains from Canada to Virginia. Andr. bot. rep. 116. Kalm. amoen. 3. p. 14. t. 1. f. 6. Duham. arb. 1. p. 286. t. 138. Loddi. bot. cab. t. 82. Sims. bot. mag. 1986.—A little shrubby plant, resembling seedling plants of Kalmia latifolia. Flowers white. Berries red, eatable, and known by the name of partridge berries. The leaves, if properly cured, make a most excellent tea, for which reason it is likewise known by the name of Mountain Tea.


2 G. reftens (Blum. biijdr. p. 587.) stem creeping, rather pilose; leaves minute, rather pilose beneath, ovate, acute, coriaceous; peduncles axillary, 1-flowered. \( \gamma \). G. Native of Java, on the top of Mount Gede.

Creeping Gaultheria. Fl. Year. Shrub.

3 G. nummularioides (D. Don. prod. fl. nep. p. 150.) branches filiform, procumbent, very bristly; leaves cordate, mucronulate, nearly sessile, naked above, but hirsut from hairs beneath and on the margins; pedicels axillary, very short, solitary. \( \gamma \). H. Native of Nippal, on the Alps. Shrub much branched. Flowers drooping. Pedicels and calyces glabrous. Calyce segments broad-ovate, mucronulate, with prominent margins. Corolla ovate, longer than the calyx.

Money-wort-like Gaultheria. Shrub procumbent.

4 G. euskofilla (Willd. in nov. act. berol. vol. 4.) stem erect; branches hairy; leaves roundish-ovate, obtuse, toothed, coriaceous, sebaceous; flowers from dots beneath; pedicels filiform. \( \gamma \). S. Native of Caraccas. Branches hairy, erect.

Box-leaved Gaultheria. Shrub.


Anastomosing Gaultheria. Shrub.

6 G. purpurascens (H. B. et Kunth, nov. gen. amer. 3. p. 282.) procumbent? branchlets and leaves clothed with bristly hairs; leaves elliptic-oblung, acute at both ends, serrulat, 1-nerved, purplish beneath; flowers axillary, solitary. \( \gamma \). G. Native of New Granada. Hairs or bristles dark purple. Leaves green above. Peduncles or pedicels bracteate at the base. Fruit drooping.

Purples-leaved Gaultheria. Shrub procumbent.

7 G. myrtioides (H. B. et Kunth, l. c. p. 283.) branches and leaves glabrous; leaves oblong, acute, obtuse at the base, crenated at top, shining above; flowers axillary, solitary. \( \gamma \). G. Native of New Granada, near the town of Almaguer. Branchlets angular. Peduncles downy, furnished with imbricated bracteas at the base. Corollas ovate-globose, glabrous, white.

Myrside-like Gaultheria. Shrub.

8 G. myrtioides (Cham. et Schlecht, in Linnea. vol. 1. p. 533.) branches beset with bristles, as well as the under sides of the leaves and calyces; leaves broad- lanceolate, with the margins ciliately serrulat and somewhat reflexed; flowers axillary, solitary, on short pedicels near the tops of the branches. \( \gamma \). G. Native of Brazil, within the tropic. Scales at base of pedicels ciliat. Corolla urceolate, pilose inside, glabrous outside, with reflexed teeth. Filaments dilated at base.

Myrtle-like Gaultheria. Shrub \( \frac{1}{2} \) to 1 foot.

9 G. cilla (Cham. et Schlecht, in Linnea. 5. p. 120.) shrubby, glabrous; flowers axillary, solitary; peduncles downy, bracteolate at the base; leaves coriaceous, nearly sessile, lanceolate, acute, sharply serrulat; teeth setigerous in the young state. \( \gamma \). G. Native of Mexico, on Mount Oritzaba, along with Solanum tuberosum; and at Chiconquica and Malpays de Joya. Leaves \( \frac{1}{4} \) inch long. Flowers white. Berries black. Ciliated-leaved Gaultheria. Shrub.

* * * Racemes axillary and terminal at the tops of the branches. Pedicels bracteate.

10 G. shallon (Parsh. fl. amer. sept. 1. p. 283. with a figure) procumbent, hairy; leaves ovate, subcordate, serrated, glabrous on both surfaces; racemes secund, bracteate, clothed with rusty down. \( \gamma \). H. Native of North America, on the falls of the Columbia, and near the Western Ocean. Hook. bot. mag. t. 2843. Lindl. bot. reg. 1411. Loddi. bot. cab. 1372. Brancheswarted, clothed with rusty down while young. Leaves broad, abruptly acuminate. Pedicels scaly. Corolla white, tinged with red, downy, urceolate, with a closed limb. Berries globose, acutish, fleshy, purple. — This plant grows in the shade of close pine forests, where hardly any thing else will grow, which makes it a very desirable shrub for plantations. The berries of the Shallon are much esteemed by the natives, on account of their agreeable flavour.

FIG. 140.
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12 G. punctata (Blum. bibd. p. 826). leaves lanceolate, terminated by a gland, serrated, dotted beneath, glabrous as well as the branches; racemes panicled, terminal; calyces ciliated. ὶ. G. Native of Java, very common on the top of Mount Gede, where it is called by the natives Tjatonge-wangie.

Dotted-leaved Gaultheria. Shrub.

13 G. leucocarpa (Blum. bibd. p. 856) branches and leaves glabrous; leaves ovate-oblong, long-acuminate, bluntly serrated; racemes axillary and terminal, drooping; calyces a little ciliate. ὶ. G. Native of Java, in woods on the higher mountains, where it is called Zanigid badas by the natives.


14 G. Sprengelii; leaves oblong, rounded at both ends, callous at the apex, quite entire, with revolute edges, hispid on both surfaces; branches hairy; racemes terminal, straight, rounded, clothed with ciliate hairs. ὶ. S. Native of Brazil, where it was collected by Sello. G. hispida, Sprengel, syst. 2. p. 288. but not of R. Br.

Sprengel's Gaultheria. Shrub.

15 G.? Bracteata; branches beset with rusty hairs; leaves ovate-acute, obscurely dentilicate, shining above and rusty beneath; racemes terminal, simple; corollas and calyces hairy. ὶ. G. Native of Quito, near the Crater of Tungragua, and on Mount Chimbora. Andromeda bracteata, Cav. icon. 6. p. 42. t. 502. f. 1. Hairs on the under side of the leaves, bulbous at the base. Leaves 1½ inch long, and 1 inch broad. Bractæ at the base of the pedicels concave, ovate-acute, and the pedicels are bibracteate. Stamina 10, villous; anthers biaristate at the base. Corollæ tubular, pale red, with erect ovate-acute teeth.

Bracteeate Gaultheria. Shrub. ½ foot.

16 G. elliptica (Cham. in Linneæ. 8. p. 502) racemes, corollæ, and capsules, downy; bractæ and calyces ciliated, the rest of the plant glabrous; leaves elliptic, acute at both ends, mucronate, margined, rather coriaceous, finely and equally serrulleted, smooth and shining above, and beset with black dots beneath, reticulately veined; racemes terminal and axillary, forming a panicle; bractæ ovate- orbicular, obtuse, concave, at first imbricated, and therefore the racemes appear strobile-formed. ὶ. S. Native of the south of Brazil, where it was collected by Sello. Very like G. acuminata, Cham. in Linneæ. 5. p. 126. and G. vernalis, Popp. pl. chil. excis. 3. no. 119. Prostrate and rooting. Corollæ ovate-ureceolate, inflatæ, downy outside and villous inside.

Elliptic-leaved Gaultheria. Shrub creeping.

17 G. acuminata (Schlecht. et Cham. 6. p. 126. and 7. p. 534) shrubby; glabrous; flowers racemose, axillary; leaves on short petioles, ovate, acuminate, acute, finely serrulleted, coriaceous, reticulately veined, discouloured, full of black dots beneath, but scabrous on both surfaces from elevated dots; serra- tures mucronate. ὶ. G. Native of Mexico, on Serra Colorado; and at St. Salvador and Malpays de Joya. Flowers white. Fruit black. Leaves ¾ inches long.

Acuminated-leaved Gaultheria. Shrub.

18 G. reticulata (H. B. et Kunth, nov. gen. 3. p. 284) branches and leaves glabrous; leaves oblong, acutish at both ends, serreolated, crenulleted, shining above; racemes crowded at the tops of the branches, axillary and terminal; corollæ glabrous. ὶ. G. Native of the Andes of Quito, between Ona and Lonza, in Paramo de Saraguru. Andromeda reticulata, Humb. proo. p. 39. Leaves terminated by a sessile gland, shining above. Racemes involucrated by some bractæ at the base, downy. Corolla ovate, tubular, white, glabrous. Fruit capsular.

Reticulated-leaved Gaultheria. Shrub.

19 G. cocinea (H. B. et Kunth, l. c. p. 284) branches rather pilose; leaves roundish-ovate, acutish, rounded at the base, denticulately, glabrous, shining above and dotted beneath; racemes terminal and axillary at the tops of the branches; corollæ clothed with glandular hairs. ὶ. S. Native of Caracas, on Mount Avila. Andromeda cocinea, Humb. proo. p. 39. Leaves with black dot-like glands beneath. Racemes involucrated by imbricate bractæ at the base. Flowers secund, on long pedicels; pedicels clothed with glandular hairs. Brac- teæ at the base of the pedicels concave, coloured, glandularly ciliated. Corollæ ovate, scarlet, clothed with glandular hairs. Fruit capsular.

Scarlet-flowered Gaultheria. Shrub.

20 G. odorata (Humb. trav. 1. p. 397. and 599. nov. gen. 3. p. 285. Pers. excl. 1. p. 482) branches beset with glandular viscid hairs; leaves ovate-oblong, acuminate, ciliate, corollæ at the base, sharply denticulately, glabrous and shining above, and scabrous from dots beneath; racemes axillary and terminal at the tops of the branches; corollæ pilose. ὶ. S. Native of New Andalusia, on Mount Tumiriquirí; and on the southern declivity of Mount Silla de Caracas, where it is called Pejo by the natives; and of Mexico, at Cuesta Grande de Chiconquía. G. scabra, Wildl. herb. Shrub much branched. Leaves aromatic, 2 inches long, glandularly ciliated while young. Racemes involucrated by some bractæ at the base. Flowers secund, nutant. Pedicels beset with glandular hairs as well as the rachis. Bractæ red, lanceolate, length of pedicels. Corollæ ovate, pale red. Fruit capsular.

Sweet-scented Gaultheria. Shrub 4 to 5 feet.

21 G. cordifolia (H. B. et Kunth, nov. gen. amer. 3. p. 285. t. 261) branches clamy, hispid; leaves ovate, acute, corotate, denticulately, rugose, glabrous and shining above, but hairy beneath; racemes axillary and terminal at the tops of the branches; corollæ clothed with clammy hairs. ὶ. G. Native of New Granada, on the Andes near Almaguer and Pansitara, in rather frigid places. Branches twining, ex Bonpl. Leaves ½ inches long. Pedicels and flowers beset with glandular hairs and clammy. Bractæ oblong, acute, concave, ciliated with glandular hairs, and clothed with adpressed hairs outside, longer than the pedicels. Calyx clammy, clothed with glandular hairs. Corollæ ovate, scarlet or purple.

Heart-leaved Gaultheria. Shrub.

22 G. rigida (H. B. et Kunth, l. c. p. 286) branches puberulous; leaves ovate-oblong, acute, corolate at the base, sharply denticulately, glabrous, but a little ciliated; racemes axillary and terminal at the tops of the branches; corollæ glabrous. ὶ. S. Native of the province of Cuman, on Mount Cocollar. Andromeda rigida, Humb. trav. p. 397. Leaves terminated by a sessile gland. Racemes involucrated by many imbricate bractæ. Bractæ oblong, concave, ciliated, glabrous, coloured, longer than the pedicels. Pedicels and rachis downy. Corollæ ovate, scarlet.

Stiff Gaultheria. Tree small.

23 G. tomentosa (H. B. et Kunth, l. c. p. 287. t. 262)
branches and under sides of leaves clothed with rusty tomentum; leaves glabrous and shining above, lanceolate-oblong, acute, obtuse at the base, with quite entire revolute margins; racemes axillary and terminal at the tops of the branches; corolla tomentose. H. S. Native of the Andes, about Quito, in Paramo de Saraguru. Leaves tomentose on both surfaces while young. Pedicels and calyces clothed with rusty down. Bracteae tomentose, ovate-oblong, much shorter than the pedicels. Corolla ovate.

**Tomentose Gaultheria.** Tree 10 to 15 feet.

24 G. ferruginea (Cham. et Schlecht, in Linnaea, 1. p. 524.) leaves ovate-cordate, acute, shining above, with serrulately scabrous margins, clothed with rusty tomentum beneath, as well as the racemes and flowers. H. G. Native of Brazil, within the tropic. Leaves often cordate at the base. Racemes bracteate, erect, rising from the axils at the tops of the branches, the whole forming a panicule. Corolla 3 lines long, with erect teeth.

**Rusty Gaultheria.** Shrub.

25 G. Escara (Willd. in nov. act. soc. berol. 4.) leaves ovate-cordate, acute, toothed, scabrous, reticulately veined beneath; racemes axillary, simple; calyx and bracteae clothed with glandular hairy. H. S. Native of Caraccas. Calyx baccate, black.

**Scabrous Gaultheria.** Shrub.

26 G. erecta (Vent. hort. cels, p. 5. t. 5.) leaves ovate, mucronate, clothed with rusty hairs; branches and racemes clothed with glandular clammy hairs. H. G. Native of Peru. Leaves with revolute denticulated margins.

**Erect Gaultheria.** Shrub.

27 G. hispida (R. Br. prod. p. 559.) leaves long-lanceolate, serrulately pilose beneath as well as on the petioles; branchlets hispid; racemes axillary and terminal, shorter than the leaves; rachis and pedicels downy; calyxes baccate; fruit and ovaries glabrous; stem erect. H. F. Native of Van Diemen's Land. Corollas white.

**Hispid Gaultheria.** Shrub erect.

28 G. Rupestris; racemes simple, bracteate; corollas campanulate; leaves oblong, serrulately. H. F. Native of New Zealand. Andromeda rupestris, Forst. prod. no. 195. Nearly allied to the preceding.

**Rock Gaultheria.** Shrub erect.

29 G. Antipoda (Forst. prod. no. 186.) leaves roundish-ovate, serrate-toothed, glabrous, reticulately veined; branches downy; stem diffuse; racemes panicled, rather hairy; corollas glabrous. H. F. Native of New Zealand. Flowers white. H. Antipodal Gaultheria. Shrub.

**Cult.** The species are ornamental: they thrive best in a heat soil, and are readily increased by dividing or by layers. The greenhouse species should be treated as other hardy greenhouse shrubs.


**Lin. Syst. Decândria Monogyânia.** Calyx large, 5-parted, furnished with 3 bractees at the base. Corolla salver-shaped, with a 5-parted spreading limb; tube villous inside. Stamens 10.


1 E. refens (Lin. spec. 565.) branches, petioles, and nerves of leaves very hairy; leaves cordate-ovate, quite entire; corollas cylindrical. H. H. Native from Canada to Carolina, on shady rocks and in stony woods, sides of hills and roots of pines. Andr. bot. rep. 102. Lam. ill. t. 367. f. 1. Lodde. bot. cab. 160.—Pluk. alm. t. 107. f. 1. Flowers white, tinged with red, very fragrant.

**Creeping Epigaea.** Fl. May, July. C1t. 1736. Shrub creeping.

2 E. cordifolia (Swartz, prod. 73. fl. ind. occ. 2. p. 842.) stem erectish, strigose; leaves cordate, roundish, hispid, serrated, convex; corollas ovate. H. S. Native of Guadaloupe and Cayenne. Lam. ill. t. 367. f. 1. Flowers white.

**Heart-leaved Epigaea.** Shrub erectish.

**Cult.** E. repens is a beautiful procumbent shrub: it will thrive only in peat soil and shady situations, and, being rather tender, should have a hand-glass or frame placed over it in frosty weather; indeed, it grows best under a hand-glass or frame the whole year: it is increased by layers or separating the rooted shoots; or by cuttings, which root readily in sand with a hand-glass over them. For the culture of E. cordifolia see Agarista, p. 838.


1 P. serpyllifolia; H. H. Native from Canada to Pennsylvania. Mr. Nuttall has observed this plant north-westward of Lake Michigan; and, as Mr. Pursh very justly remarks, abounding where evergreens are predominant, keeping pretty constant pace with the northern forests of pines, larches, and fir, growing always amidst sphagnum. Vaccinium hispidulum, Lin. spec. 500. Michx. fl. 6. bor. Amer. 1. p. 228. t. 25. Gaulthîria serpyllifolia, Pursh. fl. Amer. sept. 1. p. 283. t. 13. A´rbutos filiformis, Lam. dict. 1. p. 228. Berries white, produced in inconsiderable quantities. They are aromatic, not very acid, and rather hispid than agreeable. The shrub has the same aromatic taste and smell as Gaulthîria procumbens.

**Wild Thyme-leaved Snowberry.** Fl. April, May. Cit. 1815. Shrub creeping.

**Cult.** See Oxyccoccus, p. 858, for culture and propagation.


**Lin. Syst. Decândria, Monogyânia.** Calyx 5-parted. Corolla so deeply 5-parted as to appear pentapetalous. Stamens 10, inclosed, or nearly so; anthers behind, at length inflexed pendulous and obverse, corolla, mucronate at the apex, mutic. Ovarium free. Style straight. Stigma trifid. Capsule girded by the calyx, 3-celled, with a loculicidal dehiscence; cells many-seeded. Shrub or trees. Leaves alternate. Racemes terminal, solitary or panicled. Flowers bracteate, white.


**Alder-leaved Clethra.** Fl. July, Sept. Cit. 1791. Shrub 1 to 4 feet.
2 C. tomentosa (Lam. dict. 2. p. 46.) leaves cuneate-obo-vate, acute, finely serrated at top, clothed with white tomentum beneath; racemes spicate, simple, bracteate, villously tomentose. H. Native of Virginia and Carolina, in swamps. Wats. dend. brit. t. 39. C. alnifolia, b, pubescens, Ait. hort. kew. 2. p. 73. C. Incana, Pers. ench. 1. p. 482. This is a very distinct species, although it has been considered by some as a mere variety of the preceding.

Tomentose Clethra. Fl. July, Oct. Clt. 1731. Shrub 3 to 4 feet. 3 C. scabra (Pers. ench. 1. p. 482.) leaves broad, cuneate-obo-vate, acute, scabrous on both surfaces, coarsely serrated; racemes hooked; racemes spicate, subpanicled, bracteate, finely tomentose. H. Native of the western parts of Georgia, where it was collected by Mr. Lyon.


4 C. Paniculata (Ait. hort. kew. 2. p. 73.) leaves narrow, cuneate-lanceolate, acute, acuminate serrated, glabrous on both surfaces; panicle terminal, elongated, composed of racemes, and clothed with white tomentum. H. Native of Carolina.


Acuminated-leaved Clethra. Fl. July, Oct. Clt. 1806. Tree 10 to 15 feet. 6 C. Brasiliensis (Cham. in Linnae. 8. p. 510.) leaves oblong, obtuse, rather retuse, acutish at the base, cuneate, glabrous above and tomentose beneath, almost quite entire, or serrately-toothed at the apex; teeth and apex mucronate; racemes forming panicles at the tops of the branches, tomentose; segments of corolla fringed; genials inclosed. S. Native of tropical Brazil. The leaves vary much in form and size. Tomentum of a rusty-colour.

Brazilian Clethra. Shrub, or tree.

7 C. Pagifolia (H. B. et Kunth, nov. gener. amer. 3. p. 289.) arboreous; leaves obvate, sharply and remotely toothed, coriaceous, glabrous; racemes clustered at the tops of the branches. S. Native of South America, in woods near Bonavista, between Caracas and La Victoria. Young branches angular, and densely clothed with rusty down. Leaves 3-4 inches long, paler beneath. Racemes clothed with rusty tomentum. Corollas white, about the size of those of the lily of the valley.

Beach-leaved Clethra. Tree.

8 C. Sicolor (H. B. et Kunth, l. c. p. 289.) arboreous? leaves oblong, coarsely and undulate crenated, coriaceous, glabrous above, but clothed with white tomentum beneath; racemes in fascicles at the tops of the branches. S. Native of South America, near Santa Fe de Bogota. Cuellaria floribunda, Willd. herb. Branchelets angular, clothed with rusty down, intermixed with stiff hairs, as well as the racemes. Leaves 3-4 inches long, having the teeth intermixed with gland-formed dentilications, while young having a few dot-formed stipitate hairs above. Corollas white.

Two-coloured-leaved Clethra. Tree.

9 C. Emmanuel (H. B. et Kunth, l. c. p. 290. t. 264.) arboreous; leaves elliptic-oblong, quite entire, coriaceous, glabrous above, but clothed with white tomentum beneath; racemes in fascicles at the tops of the branches; staminens hardly inclosed.

9 S. Native along with the preceding. Cuellaria rugosa, Wildl. herb. Branches glabrous, brown. Flowers sub-sectund, nutant, about the size of those of C. alnifolia. Pedicels, calyces, and rachis clothed with rusty tomentum. Corolla white, having the segments emarginately 2-lobed, and lacinately fringed at the apex.

Fringed-flowered Clethra. Tree.


11 C. obovata (Ruiz et Pav. fl. per. 4. t. 381.) leaves oblong, wrinkled, denticulate. G. Native of Peru, in forests about Cuchero. Cuellaria obovata, Ruiz et Pav. syta. t. 103. Racemes long, fascicled at the tops of the branches. Branches and leaves downy. Flowers small.—A tall tree. The wood is very hard, and is made into utensils by the natives.

Obovate-leaved Clethra. Tree tall.

12 C. Revoluta (Ruiz et Pav. fl. per. 4. t. 380. f. a.) leaves oblong, denticulated, revolute and excavated at the base. G. Native of Peru, in forests towards Pilleo. Cuellaria revoluta, Ruiz et Pav. syta. t. 103. Branches, leaves, and racemes downy. Racemes simple, fascicled at the tops of the branches.

Revolute-leaved Clethra. Tree 30 feet.


14 C. Tinifolia (Swartz, fl. indica. occ. 2. p. 845.) arboreous; leaves oblong-lanceolate, quite entire, hoary beneath; racemes spike-formed, paniced at the tops of the branches, tomentose. G. Native of the south of Jamaica; also of Mexico, near Chiconiquaco. Tinus occidentalis, Lin. spec. 530. Volkmehria. P. Browne, jam. 214. t. 21. f. 1. Sloan, jam. 2. p. 86. t. 198. f. 2. Flowers white. Snoke calls this tree Bastard Locust tree.

Laurestine-leaved Clethra. Clt. 1825. Tree 12 to 14 feet.

15 C. Arboridea (Ait. hort. kew. 2. p. 73.) leaves oblong, attenuated, lanceolate, glabrous on both surfaces, serrated; racemes spike-formed, paniced at the tops of the branches; calyce segments obtuse. G. Native of Madeira. Simas, bot. mag. 1057. Flowers white. There are several varieties of this species; a smaller variety, and a variegated-leaved one.


Cult. All the species of this genus are very ornamental. The hardy kinds thrive best in peat earth, or a very light sandy loam: they are dwarf shrubs, and are therefore well fitted for the front of shrubberies, where the soil will suit. By layers is the usual mode of increasing them, but they also strike root readily from cuttings in sand under a hand-glass. The greenhouse kinds are well adapted for large conservatories, and they thrive in the same kind of soil recommended for the hardy species. Cuttings taken from wood not too ripe will strike root readily in sand under a hand-glass. All may be raised from seeds, which in most of the species ripen in plenty.

Tribe II.

RHODODENDRONE (so called because the genera contained in it agree with Rhodora, or Rhododendron, in particular characters).

**XLIII. RHODODENDRON** (from βοδος, rhodon, a rose, and δένδρον, dendra, a tree; in reference to the terminal bunches of flowers, which are usually red). Lin. gen. no. 543. Schreb. gen. no. 746. Gardn. fruct. 1. p. 304. t. 63. Juss. gen. 158. D. Don, in edinb. phil. journ. prod. fl. nep. p. 152.—Azâleas species of authors.—Rhôdora, Lin.—Châmerophodondrons, Tournef. inst. t. 373.

Lin. syst. Pentâ-Deçâdria, Monogyniâ. Calyx 5-parted. Corolla somewhat funnel-shaped, or campanulate; rarely rotate or 5-parted; limb 5-cleft, somewhat bilabiate; upper lip the broadest, and usually spotted. Stamens 5-10, usually exserted, declinate; anthers opening by 2 terminal pores. Capsule 5-celled, 5-valved, rarely 10-celled and 10-valved, as in *R. arboreum*, with a sepaticial dehiscence at the apex. Placentas simple, angular. Seeds compressed, scrobiform, winged.—Shrubs or trees, usually evergreen. Leaves alternate, quite entire, terminated by a spatulate apex, or yellow gland. Flowers terminal, corymbose, showy.


1 R. Po'nticum (Lin. spec. 562.) leaves oblong-lanceolate, glabrous on both surfaces, attenuated towards the thick petioles, with a streak on the upper surface, of a wide lanceolate form; racemes short, corymbose. ʒ. ʒ. Native of Asia Minor, at Pontus; and of Gibraltar, Iberia, and Caucasus, in wet places in beech and elder coppices. Pall. fl. Ross. 1. p. 43. t. 29. Jacq. icon.ตาร. t. 75. Lam. ill. 364. Curt. cot. mag. 650. Leaves sometimes becoming fervicent incridescent. Corolla purple, large, with ovate, acute, or lanceolate segments. Calyx minute, 5-toothed, somewhat carilaginous. This is a very common plant, of which there are a great many varieties. The most remarkable are those with white, red, or bluish flowers, and striped leaves. Tournefort has related that the flowers of this species were reputed to impart a noxious quality to honey; this Gildendi-stadt contradicts, and imputes it to *Azâleas Pontica*.

Var. β, obtusum (Wats. dand. brit. t. 162.) leaves subcorulate, coriaceous, obtuse; calyx very short, unequally and undulate crenate. ʒ. ʒ. Native of Pontus. Shrub 3-4 feet high.

Flowers purple.

Var. γ, myrtifolium (Lodd. bot. cab. 908.) leaves small; flowers purplish. ʒ. ʒ. Native of Gibraltar.

Var. δ, Smithii (Sweet fl. gard. n. s. t. 50.) leaves lanceolate, clothed with white tomentum beneath; corymbs many-flowered; ovary tomentum, 10-celled; flowers of a rosy purple, approaching to crimson, elegantly spotted with black. ʒ. ʒ. A hybrid, raised by Mr. Smith, of Coombe Wood, from the seed of *R. Ponticum*, impregnated by the pollen of *R. arboreum*.


2 R. Maxim (Lin. spec. p. 563.) arborecent; leaves elliptic-oblong, acute, convex, bluntish at the base, whitish or rusty beneath, glabrous; calyces segments oval-obtuse: segments of corolla roundish. ʒ. ʒ. Native from Canada to Carolina, on the mountains near rivulets and lakes. Sims, bot. mag. 951. Lam. ill. 364.—Schmidt, aubr. t. 121.—Mill. fig. 229.—Catseb. car. 3. t. 17. f. 2. Flowers pale red, in umbelate corymbs, studded with green, yellow, or purple protuberances. Largest Rhododendron or American Rose-bay. Fl. June, Aug. ʒ. Clt. 1736. Shrub 10 to 15 feet.

3 R. purp’reum; arboreous; leaves large, oblong-elliptic, flattish, acute, bluish at the base, green and glabrous on both surfaces; segments of corolla oblong, obtuse. ʒ. ʒ. Native of Virginia and Carolina, on the highest mountains, near lakes. R. maximum γ, purpurânum, Pursh, fl. Amer. sept. 1. p. 297. Flowers large, purple. Calycine segments obtuse. This shrub approaches near to *R. Ponticum*, but it differs in its foliacous calyx, and otherwise. It grows to an immense size; its stem is often found 16 inches and more in diameter, and its foliage triple the size of any other species. Purple-flowered Rhododendron. Fl. May, June. Clt. 20 feet.

4 R. Pur’shii; arborescent; leaves cuneate-lanceolate, flat, glabrous, tapering gradually to the base, paler beneath; calyces segments oval, obtuse; segments of corolla roundish-oblong. ʒ. ʒ. Native of New Jersey and Delaware, in shady cedar swamps. R. maximum β, album, Pursh, fl. Amer. sept. 1. p. 297. Flowers white, smaller than those of *R. maximum*.


5 R. Macroph’yllum (D. Don, mss. in herb. Lam.) leaves lanceolate, acute, glabrous on both surfaces, as well as the peduncles, rounded at the base; ovary bristly. ʒ. ʒ. Native of the north-west coast of America, where it was collected by Menzies. Petioles an inch long. Leaves 7-8 inches long. Flowers copious, smaller than those of *R. maximum*, white. Calycine lobes short, rounded. Filaments glabrous.

Long-leaved Rhododendron. Shrub.

6 R. Catawbiense (Michx. fl. bor. Amer. 1. p. 258.) leaves short-oval, rounded, and obtuse at both ends, glabrous, of a different colour beneath; calyces segments elongated, oblong. ʒ. ʒ. Native on the high mountains of Virginia and Carolina, particularly on the head waters of the Catawba River. Sims, bot. mag. 1671. Lodd. bot. cab. 1176. Flowers purple, disposed in umbellate corymbs.

Var. β, Russellianum (Sweet fl. gard. n. s. t. 91.) leaves oblong, finely tomentose beneath; corymbs many-flowered; flowers of a bright rosy red, approaching to crimson. ʒ. ʒ. A hybrid, raised from the seed of *R. Catawbiense*, impregnated by the pollen of *R. arboreum*, by Mr. Russell, of Battersea.


7 R. Brachye’rum (D. Don, mss. in herb. Lam.) leaves elliptic-oblong, obtuse, clothed with rusty tomentum beneath, rounded at the base; ovaries 5-celled, and are as well as the peduncles hairy. ʒ. ʒ. Native of Japan. Petioles half an inch long. Leaves 5 inches long. Calycine lobes very short, roundish, revolute, callous. Style elongated. Stigma clavate.

Short-fruit Rhododendron. Shrub.

8 R. Chrys’anthum (Lin. syst. 465. suppl. 237.) leaves acutish, attenuated at the base, oblong, glabrous, reticulately veined, and of a rusty colour beneath; flowers and buds clothed with rusty tomentum; pedicles hairy; calyx hardly any; segments of the corolla rounded; ovary tomentose. ʒ. ʒ. Native of Siberia, on the highest mountains, and of Caucasus. Pall. itin. append. p. 729. no. 87. t. n. f. 1-2. fl. Ross. 1. p. 44. t. 30. Wood. med. bot. 453. t. 149. Fl. Plen.$$ p 2 $$

**FIG. 141.**
par. lond. t. 80.—Gmel. sib. 4. t. 54. R. officinale, Salisb. p. 121. t. 54. Branches decumbent, beset with rusty stipuliformed scales. Flowers handsome, large, drooping, revolute, rather irregular, yellow. Stigma 5-lobed. The plant and its effects were first described by Gmelin and Steller, who mention it as used in Siberia for the cure of rheumatism: with us it is used in decoction as a substitute for *Cocculus.* (F. 141.)


10 R. FERRUGINEUM (Lin. spec. 562.) leaves oblong, attenuated at both ends, glabrous, shining and green above, but thickly beset with rusty dots beneath; calyce segments dentately ciliated. F. H. Native of the Alps of Europe, as of Switzerland, Austria, Savoy, Dauphiny, and Piedmont, where this and *R. hisitum* terminate ligneous vegetation, and furnish the shepherds with their only fuel. Jaqc. obs. 1. p. 26. t. 16. fl. austr. 3. t. 255. Lodg. bot. cab. 65. —Lob. icon. 366. Leaves like those of the box-tree, when young ciliated with a few hairs at bottom. Flowers of a beautiful rose-colour or scarlet, disposed in umbellate corymbs, marked with ash-coloured or yellow dots. Corollas funnel-shaped. Filaments hairy at bottom.

*Var. flori-albo;* flowers white.


11 R. HIRSUTUM (Lin. spec. 562.) leaves ovate-lanceolate or elliptic, acutish, ciliated with rusty hairs on the margins, glabrous above, dotted and hairy beneath; calyce segments fringed, bearded. F. H. Native of the Alps of Europe, as of Switzerland, Austria, Savoy, Dauphiny, &c. Jaqc. austr. 1. t. 98. Sims, bot. 1835. Lodg. bot. cab. 479. —Lob. icon. 408. Very like *R. ferrugineum.* Flowers pale red or scarlet, disposed in umbellate corymbs. Corollas funnel-shaped.

*Var. variegatum;* leaves edged with yellow.


*Bristy Rhododendron. Fl.? Clt. 1825. Shrub ½ to 1 ft.*

Sect. II. BoBAM (the name of the first species in Nipaul). Limb of calyx 5-lobed. Corolla campanulate. Staminas 10. Ovarium 8 or 10-celled. Leaves coriaceous, evergreen.—Species all natives of India.

14 R. ARBOREUM (Smith, exot. bot. t. 6.) leaves lanceolate, acute, silvery beneath, tapering to the base; pedicels and calyces woolly; segments of corolla 2-lobed, with crenately curved margins; capsule 10-celled, tomentose. F. F. Native of Nipaul, on the mountains at Narainthetty, where it is called *Booram* by the natives. Hook. exot. fl. 168. Lindl. bot. reg. t. 896. Sweet, fl. gard. 3. t. 250. R. purpureum, Hamilt. mss. Tree very showy when in blossom. Leaves 4-6 inches long. Flowers large, scarlet, dotted with black on the upper lip inside, disposed in dense heads. Stigma capitate, crenulated.


15 R. ALBANUM (Hamilt. mss. Sweet, fl. gard. t. 148.) leaves lanceolate, wrinkled and dark green above, but of a rusty cinnamon colour beneath; alternate filaments toothed. F. F. Native of Nipaul. R. arboreum γ, floribus niveis, D. Don, prod. fl. nep. p. 154. Wall. pl. asiat. var. 2. t. 123. Flowers white, spotted with purple on the upper lip. Dr. Wallich considers this and *R. arboreum,* to be only varieties of each other.


16 R. CINNAMONUM (Wall. cat. no. 760.) leaves lanceolate, acute, obfuse at the base, clothed with intense rusty tomentum beneath; limb of calyx short, callous, 5-lobed; ovarium tomentose, 10-celled. F. F. Native of Nipaul. Very nearly allied to *R. arboreum,* and hardly distinct from that species. Leaves 3-4 inches long. Corolla with wavy crenulate segments, apparently white. Capsule an inch long. Perhaps the same as *R. album.*


17 R. BARBATUM (Wall. cat. no. 757.) leaves oblong-lanceolate, acute, obfuse at the base, yellowish beneath; calyce segments dilated, membranous; ovarium 10-celled, glandular, hispid; petioles and mid-rib of leaves bristly; filaments glabrous, toothless. F. F. Native of Nipaul. Habit of *R. arboreum.* Leaves a span long. Corolla dark red, with broad rounded segments. Ovarium thickly beset with glanduliferous bristles.

Beaded Rhododendron. Tree.

18 R. ? LINEARIFOLIUM (Poir. suppl. ex Spreng. syst. 2. p. 293.) leaves linear, coriaceous, obtuse, with revolute edges, clothed with rusty down beneath; flowers corymbose; calyx minute, obtuse, velvety. F. F. Native of the East Indies.

Linear-leaved Rhododendron. Shrub.

19 R. CAMPAULATUM (D. Don, in wern. mem. 3. p. 409. prod. fl. nep. 153.) leaves elliptic-oblong, mucronate, rusty beneath, rather coriaceous at the base; segments of corolla flat, marginate; ovarium 6-celled, glabrous. F. F. Native of Nipaul, on Gosasingthun, a high mountain to the north of the valley. Lodg. bot. cab. 1844. Sweet, fl. gard. n. s. t. 241. Under surfaces of leaves clothed with fine scaly pubescence, at first of a purplish hue, afterwards changing to nearly white, and finally to a deep ferruginous brown. Flowers corymbose, disposed in corymbose clusters. Pedicels glabrous. Bracteas fringed. Corollas large, pale pink, changing to white, having the upper lip marked with irregular purple spots. Filaments bearded at the base. This species surpasses all others in the size of its flowers, except one found in Java by Dr. Horsemield.

20. **R. formosum** (Wall. pl. rar. asiat. 3. p. 3. t. 207.) leaves lanceolate, acute, attenuated at the base, beset with rusty dots beneath; segments of corolla entire, flat; filaments bearded; ovary 10-celled. _FLOWERS_ Native of Nipal. Leaves an inch and a half long. Flowers about the size of those of _R. Ponticum_, white, suffused with red. Limb of calyx short.

Shoqy Rhododendron. Shrub.

**Sect. III. Pogonanthum** (from πωγόν, pagon, a beard; and ἀνθος, anthos, a flower; throat of corolla woolly inside). Limb of calyx short, 5-lobed. Corolla salver-shaped, with a cylindrical tube, and a spreading limb. Stamens 8, inclosed. Ovary 5-celled.—Leaves evergreen, coriaceous.


**Sect. IV. Leiphtherum** (from λιφτε, lepis, a scale; and φερω, phero, to bear; leaves covered with small scales.) Limb of calyx dilated, 5-lobed. Corolla campanulate or rotate. Stamens 10. Ovary 5-celled.—Leaves membranous, sometimes deciduous.

22. **R. lepidotum** (Wall. cat. 758.) every part of the plant is beset with ferruginous scale-like dots; leaves spatulate or lanceolate, attenuated at the base, beset with round scale-like dots, as well as the branchlets, ferruginous beneath; calycine segments rounded; corollas short, campanulate, lepidoptered, with roundish entire lobes; capsules also lepidoptered; filaments woolly at the base. _FLOWERS_ Native of Nipal. A widely-branched shrub, with the habit of _R. Dauricum._ Leaves of a thinner texture, about an inch long. Flowers as well as the capsule covered with round rust-coloured scales. Flowers deep pink, solitary or 2-5 together, terminal, on short filiform pedicels.

_Scaly-dotted Rhododendron._ Shrub 2 to 3 feet.

23. **R. Lapponicum** (Wahl. fl. succ. p. 249.) shrub branched, procumbent; branches divaricate; corollas rotately funnel-shaped; leaves oblong, obtuse, stiff, beset with foveolate dots, yellowish and lepidoptered beneath. _FLOWERS_ Native of the Arctic regions of Europe, Asia, and North America. Azalea Lapponica, Lin. fl. succ. p. 64. spec. 214. fl. lapp. ed. Smith. p. 59. t. 6. f. 1. Hook. bot. mag. 3106. Young branches obscurely pubescent, warted. Leaves deep green above, pale green and at length yellowish beneath, thickly beset with hollow dots on both surfaces, which are covered by umbilicate permanent scales. Flowers crimson, disposed in umbellate corymbs, 5-6 together, surrounded by large dotted scales or bracteas. Calyx covered with yellow scales, ciliated. Segments of corolla unequal, undulated. Stamens 5-8, equal in length to the corolla. Stigma capitate, 5-lobed. Filaments hairy at the base.


24. **R. Dauricum** (Lin. spec. 562.) deciduous; leaves oblong, attenuated at both ends, glabrous, lepidoptered from rusty scales, particularly beneath; limb of calyx 5-toothed; corollas rotatory. _FLOWERS_ Native of Siberia, peculiar to the alpine tracts of Eastern Asia; it appears first at the mouth of the river Yenesei, and beyond that, especially from the river Uda, in the pine woods, it begins to be common; but about the Baikal it is most abundant, and extends through the deserts of the Mongols to China and Thibet; at the Lena it becomes more rare, and beyond that it is much dwarfer, with more slender flowers and narrower leaves. Pall. fl. ross. 1. p. 47. t. 32. Andr. bot. rep. t. 4. Curt. bot. mag. t. 636. Lodd. bot. cab. 605.—Amm. ruth. 181. t. 21. Roots knobbed, bound by fibres. Stems twisted and knobbed in the wild state. Petioles downy. Leaves dotted on both surfaces, but ferruginous beneath; before the fall in autumn they become of a dusky red colour. The flowers rise before the leaves from the tops of the branches, from buds which are composed of concave downy scales. Corollas purple.

_Var. β, atraiirens** (Ker. bot. reg. t. 194.) evergreen; leaves deep and shining above. _FLOWERS_ Native of Siberia. Sims, bot. mag. 1888.


**Sect. V. Chamecistus** (from χάμης, chamai, on the ground; and _cistus_, the rock-rose: plants with the habit of species of Helianthemum). Limb of calyx foliaceous, 5-cleft. Corolla rotate. Stamens 10. Ovary 5-celled.—Leaves small, membranous, evergreen.


26. **R. Chamecistus** (Lin. spec. 562.) leaves oblong-lanceolate, attenuated at both ends, stiffish, glandularly ciliated; peduncles usually twin, and are as well as the calyxes beset with glandular hairs. _FLOWERS_ Native of the Alps of Europe; as of Austria, Carniola, Mount Baldo, and near Salzburg; and in Eastern Siberia. Jacq. fl. austr. 3. t. 217. Curt. bot. mag. t. 488. Lodd. bot. cab. 1491.—Mich. gen. 225. t. 106.—Plank. phyt. t. 25. f. 4. Corollas rotate, pale purple. A dwarf tufted shrub, with small leaves, about the size of those of a species of _Helianthemum._


**Sect. VI. Tsutsutsi** (the Chinese name of the first species). Limb of calyx foliaceous, 5-cleft. Corolla campanulate. Stamens 5-10. Ovary 5-celled.—Leaves membranous, evergreen, hispid from pili.

27. **R. Indericum** (Fl. gard. n. s. 128.) branches strigose; leaves cuneate-lanceolate, finely crenulately, strigose, attenuated at both ends; calycine teeth long-lanceolate, obtuse, ciliated, spreading; flowers terminal, solitary or twin, deciduous. _FLOWERS_ Native of China. Much cultivated in Japan for the sake of its elegant flowers. Azalea Indica, Lin. spec. 214. Thurb. jsp. 84. Sims, bot. mag. 1480. Lodd. bot. cab. 275.—Herm. lugdub. 152. t. 153. Tsut-sutsi, Kœmpf. amoen. 814. t. 146. Flowers showy, scarlet or red.

_Var. β, pulechrum** (Fl. gard. n. s. 117.) calyx very hairy, with subulate segments; leaves elliptic, acute; flowers deciduous, terminal, 2-3 together. _FLOWERS_ A hybrid between _R. Indericum_, impregnated by the pollen of _R. Indicum_. R. Indicum, var. γ, Smithii, Sweet, Hort. brit. 2. p. 348. Corollas large, of a deep rosy purple, spotted with deep red inside.

_Var. γ, ignéscens** (Sweet, fl. gard. n. s. 128.) The four lower segments of the corolla flame-coloured, and the superior one liliac, and obscurely dotted. _FLOWERS_ Native of China.
Var. \(\varepsilon\), aurantiacum; flowers of orange-red colour. \(\varepsilon\). G. Native of China.

Var. \(\gamma\), latum (Sweet, l. c.) flowers double, yellow.

Var. \(\delta\), variegatum (Blum. bijdr. 851.) leaves obvate, covered with white strigose bristles; flowers rose-coloured, variegated with white, \(\varepsilon\). G. Native of China.

Var. \(\eta\), spatulatum (Blum. bijdr. 852.) leaves spatulate, mucronate, beset with rusty stigae; flowers rose-coloured. \(\varepsilon\). G. Native of China and Japan.

28 R. \(\zeta\), scabra; leaves ovate, mucronulate, acute at the base, ribbed beneath, beset with adpressed bristles, as well as the branchlets and peduncles; flowers deciduous; filaments papillate; anthers coriaceous at the base; stigma dilated. G. Native of Japan, in woods on mountains. R. maximum. Thumb. fl. jap. p. 181. Flowers deep rose-coloured, campanulate, usually twin. Lobes of corolla oblong, obtuse, twice longer than the tube. Stamens exerted. Calyx segments oval, obuse, ciliolate. Leaves \(1\frac{1}{2}\) to 3 inches long, coriaceous. Corolla 5 inches in diameter.

Sect. FOURTH. Rhododendron. Shrub.

29 R. \(\kappa\), macranthum; leaves opposite or 3 in a whorl, obvate or lanceolate, mucronulate, shining, clothed with adpressed bristles; flowers pentandrous; calyces segments lanceolate, acute, deeply toothed, bristly; filaments glabrous. G. Native of Japan. Azalea macranthum, Bunge, in mem. acad. petersb. 2. p. 115. R. niten, D. Don, MSS. Stems several, rising from the rootstock, 2-4 feet long, procumbent, naked. Branches fascicled, leafy at the tips, beset with adpressed silvery bristles, which change to brown, as well as the calyces. Flowers solitary or in pairs, nearly sessile, involucrated by bracteas. Corollas large, of a brilliant salmon-colour, glabrous outside; the limb spreading with oblong blunt lobes; the upper lobes marked with deeper coloured spots. There is a variety of this species, having the flowers pale pink and striped.

Large-flowered Rhododendron. Fl. May, June. CIt. 1833. Shrub procumbent, 2 to 3 feet.

30 R. \(\lambda\), reticulatum (D. Don, MSS.) leaves broadly ovate, acute, rather coriaceous, sparingly hairy, glaucous and reticulated veined beneath. G. Native of Japan, on the mountains, and has been lately introduced by Mr. Knight, of King's Road, Chelsea. Stems erect, a foot or 3 feet high, stiff. Leaves stiff, \(1\frac{1}{2}\) inch long, rounded at the base, bright green and shining above, beset with a few adpressed bristles as well as the young shoots. Flowers not seen.


31 R. \(\mu\), farkei (Tate, in Sweet. fl. gard. n. s. t. 95.) branches stiff, villous while young, but glabrous in the adult state; leaves stiff, coriaceous, ovate, obtuse, ending in a short cartilaginous mucrone, attenuated at the base, nerved and reticulately veined, hairy on both surfaces, with somewhat recurved ciliated edges; petioles ciliated at the base; flowers terminal, solitary. G. Native of China, from whence it was brought by Capt. Farrer. Calyx pilose, 5-lobed. Corolla spreading, with undulated segments, lilac or pale purple-red. A dwarf deciduous shrub. Flowers deciduous.


32 R. \(\nu\), phoeniceum; hairy; leaves oblong-ovate, tapering into the petioles at the base; flowers collected at the tops of the branches, large, deciduous; stamens short; calyx erect, glan-


Var. \(\psi\), flore pleno (Hook. bot. mag. 2509.) flowers double, purple. Lodd. bot. cab. 1461.

Purple Rhododendron. Fl. May. Cit. 1824. Shrub 3 to 10 feet.

33 R. \(\chi\), lepidophyllum; the whole shrub is hairy; leaves-elliptico-
lanceolate, opaque; flowers by threes at the extremity of the branches, deciduous; calyx erect, glanular and viscid; stamens unequal. G. Native of China, about Pekin. Azalea lepidophyllum, Hook. bot. mag. 2901. Azalea Indica, var. alba, Lindl. bot. reg. t. 811. Lodd. bot. cab. 1253. Rhod. leucan-

thum, Bunge, in mem. acad. petersb. 2. p. 115. Flowers showy, pure white.


34 R. macranthum; much branched; branches pilose; leaves cuneate-oblong, mucronate, clothed with clamyh hairs; flowers in fascicles; calyces segments long-acuminate, pilose; flowers octandrous and deciduous. G. Native of China. Flowers white. Azalea macrantha, Blum. bijdr. p. 853.—Perhaps the same as R. lepidophyllum.

Macronate-leaved Rhododendron. Shrub.

35 R. \(\upsilon\), serrulatum; leaves linear-lanceolate, long-acuminate, with recurved margins, clothed with silky villi on both surfaces. G. Native of Japan. Azalea rosmanifolia, Blum. ex Blum. bijdr. p. 853, but not of Roth. Flowers petandrous.

Burmann's Rhododendron. Shrub.

36 R. \(\upsilon\), mollis; branches pilose; leaves oblong-lanceolate, acute, narrowed at the base, ciliolate, very soft beneath; flowers in fascicles; calyx very short; tube clothed with silky tomen-


Soft Rhododendron. Shrub.

37 R. \(\upsilon\), lourieri; leaves lanceolate, quite entire, rugose about the edges smooth; corolla white, dotted with red, as also the calyx, anthers, and germs. G. Native of Cochinchina. Azalea punctata, Lour. coch. p. 113. Flowers disposed in terminal heads.

Loureiro's Rhododendron. Shrub.

38 R. \(\upsilon\), decumens (D. Don, MSS.) stems decumbent; leaves ovate, acute; flowers petandrous; segments of the calyx ovate, acute, ciliate. G. Native of China, from whence it has been lately introduced by Knight and Tate. Flowers crimson.


39 R. \(\upsilon\), sinense (Sweet, fl. gard. 290.) leaves slowly deciduous, elliptic, acutish, pilosely pubescent, feather-nerved, with ciliated margins, canescent beneath; corollas downy; stamens equal in length to the limb of the corolla. G. Native of China. Azalea Sinensis, Lodd. bot. cab. 855. Flowers flame-coloured, pentandrous.

Var. \(\beta\), flavescens (Sweet, fl. gard. 290.) flowers yellow.


Sect. VII. Pentanthera (from \(\varphi\), pente, five; and \(\alpha\), anthera, an anther; flowers pentandrous). Limb of calyx short, 5-lobed. Corolla funnel-shaped. Stamens 5. Ovarium 5-celled. Leaves deciduous.
40. R. flavum; flowers leafy, clanny; leaves ovate, oblong, pilose, ciliated; corolla funnel-shaped; stamens very long. H. Native of the Levant, at Pontus; Caucasus, Turkey, &c. Azalea Pónica, Lin. spec. 1669. Curt. bot. mag. t. 453. Azalea arborescens, Lin. spec. ed. 1. p. 150.—Buxb. cent. 5. p. 36. t. 69. Flowers fine yellow. Leaves shining. There are a great number of varieties of this species in the gardens, differing principally in the colour of the flowers, and the hue of the leaves. The flowers are of all shades, from yellow to copper or orange-colour. They are sometimes white, (see Sims, bot. mag. 2983.), and are sometimes striped with yellow and red.

**Yellow-flowered Rhododendron.** Fl. May, June. Clt. 1793.

Shrub 4 to 6 feet.

41. R. nudiflorum (Torr. fl. un. st. 1. p. 140.) leaves lanceolate-oblong, nearly smooth and green on both surfaces, ciliated on the margins, having the mid-rib bristly beneath, and woolly above; flowers rather naked, not clanny; tube of corolla longer than the divisions; teeth of calyx short, rather rounded; stamens much exerted. H. Native from Canada to Georgia, on the sides of hills. Azalea nudiflora, Lin. spec. 214. Azalea periclymenoides, Michx. fl. bor. amer. 1. p. 151. This beautiful shrub has a great many varieties, besides those mentioned below, for which see Loud. hort. brit. p. 66 and supplement, among which is one with double flowers. Flowers scarlet, pink, white, striped, variegated, red, purple, &c., disposed in terminal clustered racemes, appearing before the leaves. The variety *prostrata* clearly shows that *Azalea* and *Rhododendron* are not genetically distinct.

**Var. prostrata** (Ait. c.) flowers white; calyx middle-sized. H. Ait. l. c.

**Var. papilionaceum** (Pursh, l. c.) flowers reddish, with the lower segment white; calyx foliaceous. H. Ait. l. c.

**Var. prostrata** (Pursh, l. c.) flowers pale red, 5-parted even to the base. H. Ait. l. c.


**Var. prostrata hort.** (Ait. c.) branches tomentose downy; leaves evergreen or deciduous, oblong, acute, downy while young, but glabrous in the adult state, and recurved at the apex; tube of corolla a little shorter than the segments. H. A hybrid, raised from the seed of *R. nudiflorum*, impregnated by the pollen of a hybrid raised between *R. Ponticum* and *R. Canadense*. Flowers delicate light purple, disposed in terminal racemose corymbs. R. Govenium, Sweet, fl. gard. 3. t. 263.

**Var. rubrum** (Lodd. bot. cab. t. 51.) flowers red. H. Native near Philadelphia.

**Naked-flowered Rhododendron.** Fl. April, June. Clt. 1734.

Shrub 3 to 4 feet.

42. R. viscosum (Torr. l. c.) leaves oblong-obovate, acute, smooth and green on both surfaces, ciliated on the margins, having the mid-rib bristly; flowers clanny, leafy, hairy; tube of corolla as long as the segments; teeth of calyx short, rounded; stamens hardly longer than the corolla. H. Native from Canada to Georgia, in swamps and shady woods. Azalea vicosá, Lin. spec. 214.—Plit. alm. 106. t. 161. f. 4. Catesb. car. 1. t. 57. Flowers white, sweet-scented, in terminal clusters, downy. There are a great number of varieties of this species, see Loud. hort. brit. p. 66., varying in the colour of the flowers, and otherwise. The flowers are white and red, and variegated with these colours. There is a downy variety with red flowers figured in Lodd. bot. cab. t. 441.

Var. ornatum (Sweet, fl. gard. n. s. 137.). A hybrid raised from the seed of *R. viscosum* rubescens, fertilized by the pollen of *R. Ponticum*.


Shrub 2 to 4 feet.

43. R. calendulaeaceum (Torr. l. c.) leaves oblong, pubescent on both surfaces, at length hairy; flowers large, not clanny, rather naked; teeth of calyx oblong; tube of corolla hairy, shorter than the segments. H. Native from Pennsylvania to Carolina. Azalea calendulaeae, Michx. fl. bor. amer. 1. p. 156. Lodd. bot. cab. 1394. A nudiflora, var. coerulea, Ait. hort. kew. 310. Flowers yellow, red, orange-coloured, and copper-coloured. Sims, bot. mag. 172. Lodd. bot. cab. 1394. or flame-coloured. Ker. bot. reg. 145. Said to be the handsomest shrub in North America. There are a great many varieties of it, varying in the colour of the flowers. See Loud. hort. brit. p. 66.

**Var. spectabile.** (Sweet, fl. gard. n. s. t. 10.) A hybrid between *R. calendulaeaceum* and one of the red varieties of *R. nudiflorum*. There are also two kinds of this; one with a flesh-coloured corolla, having the upper segment orange-coloured, edged with flesh-colour, called *R. Morterii carnea*; and another called *R. Morterii*, var. praeclara, with pale copper-coloured flowers, tinged with blush.

**Marygold Rhododendron.** Fl. May, June. Clt. 1806.

Shrub 2 to 6 feet.

44. R. arboreum (Torr. l. c.) leaves obovate, rather obtuse, smooth on both surfaces, glaucous beneath, ciliated on the margins, having the mid-rib almost smooth; flowers not clanny, leafy; tube of corolla longer than the segments; calyx leafy, with the segments oblong and acute; filaments exerted. H. Native of Pennsylvania, on the sides of rivulets near the Blue Mountains. Azalea arboreum, Pursh, fl. amer. sept. 1. p. 153. Flowers large, reddish; leaves of flower-buds large, yellowish brown, surrounded with a fringed white border.

**Arborescent Rhododendron.** Fl. May, July. Clt. 1818.

Shrub 10 to 20 feet.

45. R. nittidum (Torr. l. c.) branches smoothish; leaves oblongate, rather mucronate, coriaceous, smooth on both surfaces, shining above, having the nerve bristly beneath, with revolute ciliated margins; flowers clanny, leafy; tube of corolla a little longer than the segments; calyx very short; filaments exerted. H. Native from New York to Virginia, in deep mossy swamps on the mountains. Azalea nittida, Pursh, fl. amer. sept. 1. p. 153. Ker. bot. reg. 414. Flowers white, tinged with red. Leaves dark green, shining, smaller than any other species of the present section.

**Shining-leaved Rhododendron.** Fl. June, July. Clt. 1812.

Shrub 2 to 4 feet.

46. R. hispidum (Torr. l. c.) branches straight, very hispid; leaves long-lanceolate, hispid above, and smooth beneath, glaucous on both surfaces, ciliated on the margins, having the nerve bristly beneath; flowers very clanny, leafy; tube of corolla wide, scarcely longer than the segments; teeth of calyx oblong, rounded; filaments exerted. H. Native of New York and Pennsylvania, on the borders of lakes on the highest part of the Blue Mountains. Azalea hispida, Pursh, fl. amer. sept. 1. p. 154. Wats. dendr. brit. 6. Azalea viscosa, var. glauca, Ait. hort. kew. 1. p. 310. Flowers white, with a red border, and a tinge of red on the tube, which makes them appear to be of a rose-colour before expansion. Stamens sometimes 10. This species may be distinguished from the rest of the present section by its bluish appearance.


Shrub 10 to 15 feet.

47. R. vicicola; leaves oblong, clothed on both surfaces with fine hoary pubescence, not bristly on the nerve; flowers small,
not clammy, naked; tube of corolla hardly longer than the segments; calyxes very short: having one of the segments linear, and 4 times longer than the rest; filaments exerted; branches hispid. \( \varphi \). H. Native of Carolina and Georgia, on barren sandy hills. Azalea bicolor, Pursh, fl. amer. sept. 1. p. 153. Azalea nudiflora, var. bicolor, Ait. Hort. kew. 1. p. 319.—Trew. chret. t. 48. Flowers slender and smaller than the rest, of a pale rose-colour, or nearly white, with a deep red-coloured tube.


48 R. glauc'æum; branches hispid; leaves oblongate, acute, glabrous on both surfaces, glaucous beneath, ciliated on the margins, having the mid-rib bristly; flowers very clammy, leafy: tube of corolla twice longer than the segments; calyx very short; filaments about equal in length to the segments of the corolla. \( \varphi \). H. Native from New England to Virginia, in swamps of a clayey soil. Azalea glauca, Pursh, fl. amer. sept. 1. p. 154. Lam. ill. p. 493. Wats. dendr. brit. 5. Azalea virid'cosa, var. floribunda, Ait. Hort. kew. 1. p. 319. Flowers white, very fragrant. The shrub is dwarfer than other species of the present section, and flowers in great abundance. Nutall considers this as only a variety of \( A. \) virid'cosa, differing in nothing but in the under sides of the leaves being glaucous.


49 R. can'escens; leaves ovate-oblong, downy above, and tomentose beneath, not bristly on the middle nerve; flowers not clammy, nearly naked; tube of corolla hardly shorter than the segments; teeth of calyx very short, rounded, obtuse; stamens hardly exerted. \( \varphi \). H. Native of Lower Carolina, on the banks of rivers; and of Virginia, on the mountains of the Cacapoop Springs, near Winchester. Azalea canescens, Michx. fl. bor. amer. 1. p. 150. Wats. dendr. brit. 116. Flowers rose-coloured.


50 R. spec'içùm; branches hairy; leaves lanceolate, ciliatet, acute at both ends; calyx pubescent; corolla silky, with obtuse, ciliatet, lanceolate, undulate segments; stamens exerted. \( \varphi \). H. Native of North America. Azalea speciosa, Willd. enum. p. 10. Lodg. bot. cab. 624. Wats. dendr. brit. 116. A coc'china, Lodg. Flowers scarlet and orange-coloured. There are several varieties of this species, varying in the shape of the leaves and the colour of the flowers; see Loud. hort. brit. p. 66. Lodg. bot. cab. 1255.

Showy Rhododendron. Fl. May, June. Ct.? Shrub 3 to 4 feet.

Sect. VIII. Rhodôra (from \( \text{'pòvov, rhôdon, a rose; colour of flowers.} \) Limb of calyx 5-toothed. Corolla bilabiata; upper lip broadest, and 2-3-foet; lower one bidentate. Stamens 10. Capsule 5-celled, 5-valved.—Leaves deciduous. Habit of last section.


Cult. Of all the genera in existence, Rhodôdendron comprises the most handsome, elegant, and showy shrubs, well fitted for adorning shrubberies, or to be grown singly on lawns. All the species grow best in peat soil, or very sandy loam, or vegetable mould; they are either increased by layers or by seeds. When raised in the latter way, the seeds must be sown early in the spring, in flat pans or pots, filled with peat earth, and covered very slightly; the pots or pans should then be set in a close frame, or at the front of a hot-house, till the plants come up, watering them very slightly when dry; and as soon as the seedlings have grown high enough to be laid hold of, they should be planted out into other pans or pots, filled with the same kind of mould; after which they may stand in a close frame for a few days, until they have struck fresh roots, and afterwards hardened to the air by degrees. The smaller kinds of Rhodôdendron may be propagated freely by cuttings, taken off from young wood, and planted in sand, placing a bell-glass over them. There are now in the gardens a great many hybrid kinds of Rhodôdendron, and are still increasing in number; some of which outvie the species in splendour. The species natives of Nipaul, China, and Japan, in mild winters, would probably succeed in the open air, but they will not survive a severe winter without protection; they are therefore best kept in pots, and placed among other greenhouse or frame plants. \( R. \) arbôreum and \( R. \) album are among the most showy of the species, and are well adapted for conservatories, or to be placed in large tubs in the greenhouse. Young cuttings of the tender kinds, if torn off close to the stem, and planted in a pot of sand, will strike root readily; the pot should be plunged in heat under a hard-glass.

XLIV. VIREYA (named by Blume after M. Virey, a French physician). Blum. bijdr. p. 854.

Lin. syst. Decândria, Monogynía. Calyx small, obsolesc 5-toothed. Corolla subcampanulate, or funnel-shaped, regular, 5-lobed, adnate to the disk of the calyx. Stamens 10, inserted in the calycine disk; alternate filaments the shortest; anthers oblong, bursting inwardly, naked, dehiscing by two pores at the apex. Style filiform; stigma capitata, 5-furrowed. Capsule silique-formed, 5-angled, 5-celled. Placenta 5-lobet. Seeds numerous, expanded into a bristle-formedawn at both ends.—This genus differs from Rhodôdendron in the calyx being small, and in the stamens not being attached to the corolla in any way.—Mostly parasitical shrubs. Leaves scattered and verticillately, quite entire, coriaceous, covered with scaly dots beneath. Flowers disposed in terminal fascicles.

* Corollas subcampanulate.

1 V. Java'xîca (Blum. bijdr. 854.) leaves oblong-lanceolate, clothed with fine rusty dots beneath; flowers showy, deep orange. \( \varphi \). G. Native of Java, at the foot of Mount Salak, where it is called by the natives Gaga Mirha. Fl. \( \beta \); flowers citron-coloured, smaller. Java Vireya. Fl. Year. Shrub.

2 V. \( \alpha' \)îla (Blum. bijdr. 855.) leaves lanceolate, densely clothed with rusty scales beneath: flowers white, middle-sized. \( \varphi \). G. Native of Java, on Mount Salak, parasitical upon trees. Rhodôdendron album, Blum. cat. hort. buitenz. p. 72. White-flowered Vireya. Fl. Year. Shrub.

* * Corollas funnel-shaped.

3 V. tubifîôra (Blum. bijdr. p. 855.) leaves lanceolate, densely clothed with rusty dot-like scales beneath; flowers scarlet. \( \varphi \). G. Native of Java, on the higher mountains. Tube-flowered Vireya. Fl. Year. Shrub.

4 V. Celeb'esca (Blum. l. c.) leaves broad, lanceolate, clothed with rusty dot-like scales beneath; flowers scarlet. \( \varphi \). G. Native of the Celebes, in mountain woods. Celebes Vireya. Fl. Year. Shrub.

5 V. ret'u'ra (Blum. bijdr. p. 856.) leaves spathulate, retuse, with recurved margins, beset with rusty dots beneath; branches
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rough; flowers scarlet.  G. Native of the west of Java, on high mountains.

"Retuse-leaved" Vireya. Fl. Year. Shrub.

Cult. For culture and propagation, see Agarista, p. 838.


Lin. syst. Dodecándria, Monogynía. Calyx deeply 7-cleft. Corolla so deeply 7-cleft as to appear of 7 petals, spreading. Stamens 14, hypogynous; anthers obverse or pendulous, awnless. Ovarium free, 7-furrowed. Style elongated; stigma depressedly capitate, 7-furrowed. Capsule depressedly globose, girded by the permanent calyx, and terminated by the style, 7-celled, 7-valved, with a septical dehiscence; cells many-seeded.

—Elegant alpine shrubs; with scattered, crowded, quite entire, coriaceous leaves; racemos or corymbos, bracteate flowers. Corollas usually purple.

1 B. Resinosó (Mutis, amer. 1. t. 8. Lin. syst. 443. suppl. 246.) branches downy; leaves ovate, smooth; corymb terminal, simple; pedicles downy; corollas resinous and viscid; filaments downy near the base.  G. Native of New Granada. Branches proliferous. Leaves an inch long. Corollas purple.

Resinosó-flowered Bejaria. Shrub 3 to 5 feet.


3 B. Glauca (Humb. et Bonpl. pl. aequin. 2. p. 118. t. 177.) glabrous; leaves oblong, obtuse, glaucous beneath; racemes terminal and axillary; pedicles somewhat fastigiate.  G. Native of South America, in the alpine region of the province of Venezuela, near the top of Silla de Caracas. Shrub much branched; branches angular. Corolla flesh-coloured, glabrous; filaments glabrous.


4 B. Coarctáta (Humb. et Bonpl. pl. aequin. 2. p. 125. t. 121.) branches clothed with pubescent tomentum; leaves oblong, glabrous, glaucous beneath; corymb terminal, simple; peduncles, pedicels, rachi, and calyces clothed with rusty tomentum.  G. Native of Peru, in cold places near the city of Caxamarcá. Shrub much branched. Flowers purple. Filaments glabrous, but dilated and pubescent at the base.

Coarctató-corymbos Bejaria. Shrub 4 to 5 feet.

5 B. Grandifóra (Humb. et Bonpl. pl. aequin. 2. p. 122. t. 119.) leaves ovate, glabrous above, but clothed with rusty tomentum beneath, as well as the pedicels, pedicels, rachi, calyces, and branchlets; corymb terminal, branched a little, many-flowered.  G. Native of the province of Quito, in cold places between Luxá and Oná, in Paramo de Saraguri; and near Alto de Pulía, and Víncuca. Shrub much branched; branches subverticillate. Corollas purple, about the size of those of Dictamnus albus. Filaments glabrous, but dilated and ciliated at the base.

Great-flowered Bejaria. Shrub 3 to 4 feet.

6 B. Estuans (Mutis, in Lin. fl. suppl. 247. mant. 242. Humb. et Bonpl. pl. aequin. 2. p. 120. t. 118.) leaves elliptic, rather glabrous above, but downy and glaucous beneath, while young clothed with rusty tomentum, and ciliated with glands; coryps terminal, simple; peduncles, pedicels, rachi, calyces, and branchlets clothed with clammy glandular hairs.  G. Native of New Granada, near Gonzanama. Much branched; branchlets subverticillate. Flowers smaller than those of the preceding, purple. Filaments villous at the base.

Heating Bejaria. Shrub 10 to 15 feet.

7 B. Lepidófora (Humb. et Bonpl. pl. aequin. 2. p. 124. t. 120.) leaves oblong, somewhat mucronate, with revolute edges, glaucous beneath, beset with glandular hairs on both surfaces along the middle nerve; racemes terminal; peduncles, pedicels, rachi, branchlets, and calyces clothed with clammy glandular hairs.  G. Native of South America, on the top of Silla de Caracas. Shrub much branched; branchlets purplish. Flowers about the size of those of B. glauca, purple.

Lem-leafed Bejaria. Shrub 3 to 4 feet.

8 B. Caxamarcaénsis (H. B. et Kunth, nov. gen. amer. 3. p. 294.) branchlets pilose; leaves oblong, glabrous above, pubescently hairy and glaucous beneath; corymb terminal, simple; peduncles, pedicels, and rachi, clothed with rusty pilose tomentum; calyces hairy.  G. Native of Peru, on the Andes, about Caxamarcá. A much-branched shrub. Flowers size of those of the preceding, purple; petals narrow.

Caxamarcá Bejaria. Shrub 3 to 4 feet.

9 B. Lanceolóta (Ruiz et Pav. fl. per. 4. t. 1513. f. b.) branches and racemes hairy; leaves ovate-lanceolate; corymbs simple, racemose; pedicels short.  G. Native of Peru, on the high hills of Rodos Pillao and Huassa-Huassi, where it is called Rosa-Rosa, or Rosa Huaygutta. Acúnna lanceoláta, Ruiz et Pav. syst. p. 124. Flowers purple or rose-coloured.


10 B. Oblónga (Ruiz et Pav. fl. per. 4. t. 1513. f. a.) leaves oblong, with revolute margins; flowers corymbose; pedicels long.  G. Native of Peru, in the province of Tarma, at Churupalána, and of Panatallahu, at Acomaya and Macora, where it is called Rosa-Rosa, from the copious rose-coloured flowers. Acúnna oblíonga, Ruiz et Pav. syst. p. 123. Flowers purple or rose-coloured. Branches, petioles, and corymb downy. Coryps compound.

Oblóng-leaveded Bejaria. Shrub 4 to 5 feet.

Cult. For culture and propagation see Agarista, p. 838. Extremely elegant plants, with the habit of some species of Rhododendron, and are therefore well worth the cultivator’s care.

XLVI. HYMENANTHES (from ἱμήν, hymen, a membrane; and ἀνθός, anthos, a flower; in reference to the thin corollas). Blum. bijdr. 862.

Lin. syst. Dodecándria, Monogynía. Calyx small, obliquely denticulate. Corolla campanulate, with a short compressed tube, and a 7-parted limb; segments of the limb imbricated. Stamens 14, hypogynous: alternate ones shortest. Anthers fixed by the back, mutic, opening by 2 pores at the apex. Ovarium free, girded by a nectariferous tumid margin at the base. Style long; stigma obtuse, 7-crenated. Capsule oblong, 7-celled, 7-valved, many-seeded.—Nearly allied to Bejaria, but differs from it in the small calyx and monopetalous corolla.

1 H. Japónica (Blum. l. c.) shrub a little branched; leaves subverticillate, 3 to 4 in a whorl, petiolate, oblong, acutish, narrow at the base, quite entire, coriaceous, glabrous, reticulated above, veinless and yellowish beneath; flowers disposed in dense, terminal, bracteate spikes.  G. Native of Japan, from whence it was received by Blume under the name of Rhodódenron máxima.

Japan Hymenanthes. Shrub.

Cult. For culture and propagation see Agarista, p. 838.

Linn. syst. Decândria, Monogynia. Calyx 5-parted. Corolla salver-shaped; under side of limb producing 10 cornute proteruberances, and as many cavities on the upper side, in which the anthers lie, or are concealed. Capsule 5-celled, many-seeded; dissections marginal.—Evergreen shrubs, with alternate or ternately verticillate leaves. Flowers disposed in terminal, racemose, compound corymb; but in one species the flowers are solitary and axillary. Pedicels long, 1-flowered, trichotomous at the base; external bracteate originating from the rachis. Buds naked. Anthers opening by two oblique truncate pores.—This genus is considered poisonous, and is often fatal to cattle.

1 K. latifolia (Lin. spec. 560.) leaves on long petiolo, scattered, or 3 in a whorl, oval, coriaceous, smooth and green on both surfaces; corollas terminal, downy, and viscid. \( ^{3} \). H. Native from Canada to Carolina, on the sides of stormy hills. Curt. bot. mag. 175. Bigel. med. bot. p. 193. Wangh. amer. t. 25. f. 50.—Catesb. car. 2. t. 98.—Trew. fl. t. 38. f. 1.—Pluk. mant. t. 379. f. 6. A very elegant shrub when in flower; in America it is called Laurel, and on the mountains Calico-bush. Flowers red. It is not improbable that the deleterious honey in Philadelphia might have been collected by the bees from the flowers of the Calico-bush, which in some places pervades, in rocky woods and depressed summits of mountains, almost in a similar manner with Calliuna vulgaris of Europe.


2 K. angustifolia (Lin. spec. 561.) leaves petioloate, scattered, or 3 in a whorl, oblong, obtuse, rather rusty beneath; corollas lateral; bracteas linear; peduncles and calyces clothed with glandular pubescence. \( ^{3} \). H. Native from Canada to Carolina, in bogs, swamps, and sometimes in dry mountain lands. Curt. bot. mag. 321. Lodd. bot. cab. 502.—Catesb. car. 2. t. 17. f. 1.—Trew. ehrh. t. 38. f. 2. Flowers dark red. The plant is known by the name of Sheep Laurel in North America, being considered very poisonous when fed upon by sheep. There are several varieties of this species besides the one mentioned, differing in the size of parts, and in the deeper and lighter shade of the corolla. See Loud. hort. brit. p. 171.

Var. \( ^{3} \). ovata (Pursh, fl. amer. sept. 1. p. 296.) leaves broader; stem taller. \( ^{3} \). H. Native of New Jersey, on the mountains.


3 K. glauca (Ait. hort. kew. ed. 2. p. 64.) branchlets 2-edged or triquetrous; leaves opposite, on short petiolo, oblong, smooth, glaucous beneath, with revolute edges; corollas terminal, compound, bracteate; pedicels and calyces glabrous. \( ^{3} \). H. Native of Kogs in Canada; and on the borders of mountain lakes of New York and Pennsylvania; and of the Island of Sichua. Curt. bot. mag. 177. Lam. ill. t. 363. Lher. strip. nov. 2. t. 9. Lodd. bot. cab. 1508. K. polifolia, Wangh. act. soc. heral. 8. p. 129. t. 5. A very handsome upright small shrub, with pale red flowers. According to Nuttall, the flowers are disposed in terminal compound corollas, each corollas composed of 3 raceme corollacymbules; and the pedicels and calyces are said by him to be clothed with powdery viscid pubescence.

Var. \( ^{3} \). rosmarinifolia (Pursh, fl. amer. sept. 1. p. 296.) leaves linear, more revolute on the margins, and having under the surface green. \( ^{3} \). H. Mr. Pursh discovered this species in a bog near Albany, and is inclined to think it a distinct species.


4 K. cuneata (Michx. fl. bor. amer. 1. p. 257.) leaves scattered, sessile, cuneate-oblong, glandularly pubescent beneath, minutely awned at the apex; corollas terminal, corymbosus; peduncles axillary, solitary, 1-flowered, longer than the leaves. \( ^{3} \). H. Native of Carolina, on the mountains. Branches twiggy. Leaves deciduous. Flowers white, red at the bottom, disposed in sessile, lateral, fastigate clusters.


5 K. thuruta (Walt. fl. carol. 138. Michx. fl. bor. amer. 1. p. 257. Curt. bot. mag. 138.) branches, leaves, and calyxes very hairy; leaves opposite and alternate, almost sessile, elliptic; peduncles axillary, solitary, 1-flowered, longer than the leaves. \( ^{3} \). H. Native of South Carolina and Georgia, in barren pine-woods. K. ciliata, Bartr. f. 18. 19. A beautiful little shrub, but difficult to cultivate. Leaves small, like thyme. Flowers large, red.


Cult. Handsome shrubs when in blossom. They grow best in peat soil, and are increased either by layers or by seeds. When raised by seeds, they are reared and otherwise treated in the manner recommended for Rhododendron, which see, p. 848.


1 M. flabriovia (Smith, icon. inn. 1. p. 56. t. 55.) corolla urceolate, with rounded lobes; leaves and branches hairy. \( ^{3} \). H. Native of the north-west coast of America, particularly on the Columbia River; and of the Island of Stichua. Lam. ill. t. 255. M. urceolæ, Salisb. par. lond. no. 44. Leaves ovato-lanceolate. Flowers of a rust-colour.


Three-flowered Menzie'sia. Shrub tall.

Cult. For culture and propagation see Azalea, p. 851.

XLIX. AZALEA (from azaiaes, azaleos, dry, arid; habita-

Lin. syst. Pentändria, Monogény. Calyx 5-parted. Corolla short, campanulate, 5-cleft. Stamens 5, equal, shorter than the corolla; cells of anthers opening by a terminal pore. Style straight, inclosed. Capsule 5-celled: with 5 cloven-pointed valves, whose inflexed edges form the double partitions.—A small, evergreen, glabrous, procumbent shrub, with the habit of *Thyme*. Leaves opposite, small, elliptic, glabrous, with revolute margins. Flowers pedicellate, rising in fascicles from the axils of the upper leaves, small, red.


Cult. This small shrub grows well in a peat border, or in pots in sandy peat earth; it is easily increased by layers or by seeds.


Cult. For culture and propagation see Lédum below.

L. LÉDUM (λέδος, ledon, was a name applied by the ancients to a plant producing the substance called Ludanum, and now known by the name of Cistus Lédum; in foliage, the Lédum of modern botanists agrees with the plant of the ancients). Lin. gen. 546. Gært. fruct. 2. p. 145 t. 112. Juss. gen. 159. Nutt. gen. amer. 1. p. 275.


—Dwarf evergreen shrubs. Leaves coriaceous, with revolute margins, and tomentose on the under surface. Flowers white, disposed in terminal corymes; pedicels bracteate at the base. Shrubs exhaling a peculiar scent when bruised.

1 L. *palus* (Lin. spec. 561.), leaves linear, with revolute margins, clothed with rusty tomentum beneath; stamens 10, longer than the corolla. H. Native of Canada, in swamps, and round the mountain lakes of New York; in Kotzebue's Sound, &c.; also of the north of Europe, as of Denmark, Silesia, &c. Oed. fl. dan. 1031. Duh. arb. 1. t. 67. Schmidt, arb. 163. Lodd. bot. cab. 560. Lédum Silesiacum, Clus. pan. 68. Rosmarinum sylvestre, Cam. epît. 546. Flowers white. Leaves resembling those of *Rosmary*.


2 L. LATBFÖLJUM (Ait. hort. kew. 2. p. 65.) leaves linear-oblong, with replicate margins, clothed with rusty tomentum beneath; stamens 5, about the length of the corolla. H. Native of Canada, in sphagnum swamps; Greenland, Labrador, Newfoundland, Hudson's Bay. This or the preceding species has lately been found in Ireland. Jacq. icon. 5. t. 1464. Schmidt, arb. t. 164. Lam. ill. t. 363. f. 1. Lodd. bot. cab. 534. L. Greenländicum, Retz, obs. 4. p. 26. Fl. dan. t. 567. L. palustre, Michx. fl. bor. amer. 1. p. 259. Flowers white. A larger and broader leaved shrub than the last; commonly called *Labrador Tea*; and the leaves are said to be a good substitute for it. Bees are very fond of the flowers.


3 L. *canadense* (Lodd. bot. cab. 1049.) leaves ovate petiolate, white beneath; flowers disposed in terminal umbellate corymes, large. H. Native of Canada, in swamps. Flowers white.


Cult. A peat soil, or very sandy loam answers best for the species of this genus; and they are readily increased by layers and seeds. The seeds should be sown, and the seedlings afterwards managed in the manner recommended for *Rhododendron*, p. 848.

Tribe III.


Lin. syst. Octo-Decandria, Monogyny. Calyx 4-5-toothed (f. 142. a.) Corolla urceolate or campanulate (f. 142. b.), or more or less deeply 4-5-cleft; limb reflexed. Stamens 8-10, hypogynous. Anthers 2-horned (f. 142. d.), dehiscent at the summits, and sometimes furnished at the back with 2 spreading spurs or bristles. Style longer than the stamens; stigma obtuse. Berry globose (f. 142. c.), depressed at top, 4-5-celled (f. 142. f.), many-seeded.

—The species of *Vaccinium* are mostly confined to Europe and North America, but are peculiarly abundant in the latter country. They are suffrutescent, shrubby, gemmaceous plants. Bud-scales generally permanent, on the base of the small branches. Leaves alternate, membranous, often beset with resinous dots, either permanent or deciduous. Flowers pedicellate, either solitary, simply racemose, or tufted, drooping, inodorous, generally very elegant, tinted with various shades of red or pink, never blue, scarcely yellowish.

5 q 2
Berries black, purple, bluish, or red, generally eatable, though not always pleasant, nor wholesome in a crude state. The species of this genus were all understood by Linnaeus, who therefore has led all following authors astray. In reviewing the whole, we find something to add, though we have many specimens that are dubious. We are obliged to follow the distribution of Linnaeus, into the evergreen and deciduous species, though some uncertainty must always attend that character respecting species known from dried specimens only.

§ 1. Leaves deciduous.

* Pedicels 1-flowered, usually solitary, rarely twin or fasciculated.

1 V. Myrtillus (Lin. spec. 498.) pedicels solitary, 1-flowered; leaves serrated, ovate, smooth; stem acutely angular, smooth; calyx hardly divided. H. Native on heaths, stony moors, and mountain woods throughout most parts of Europe, especially the more northern; plentiful in Britain. Dr. Sibthorp gathered it on the Bithynian Olympus. It is common on the hills in the Island of Unalaschka. Smith, engl. bot. 456. Fl. dan. 974.—Ger. emac. 1415. Math. valgr. 1. p. 210. Cam. epit. 135. Corolla globose, generally 5-cleft, of a very delicate waxy pink hue. Berries the size of currants, bluish black, covered by a mealy bloom, eaten in tarts or with cream, or made into jellies, in the north and west of England and Scotland. In Devonshire the berries are eaten with clotted cream; in Poland they are ripe in July, and being mixed with wood strawberries, and eaten with new milk, are considered a great delicacy. They may be successfully cultivated in a shady border, in bog earth. The fruit is sometimes sent into Norfolk from Devonshire. The juice of them has been employed to stain paper or linen purple. In autumn the wood game chiefly live upon the product of this shrub. Mr. Menzies brought from the west coast of North America what can scarcely be considered more than a gigantic variety, 7 or 8 feet high, larger in every part, with less distinctly serrated leaves.

Myrtle-like or Common Bilberry, or Bleaberry. Fl. May. Britain. Shrub ½ to 2 feet.


Chamiso's Whortle-berry. Shrub 1 foot.

3 V. ovalifolium (Smith, in Rees' cyclo. no. 2.) pedicels solitary, 1-flowered; leaves elliptic, obtuse, pointless, entire, smooth, strongly veined beneath; stem angular; calyx hardly divided. H. Native of the north-west coast of America, where it was collected by Mr. Menzies; and in the Island of Sitka by Bongard. Branches smooth, less acutely angular than in the foregoing species. Leaves ½ inch long. The flowers seem to agree with those of V. myrtillus in colour and structure, except that the corolla is more ovate. Berries black, crowned, cup-shaped, with a slightly 4-lobed calyx.

Oval-leaved Bilberry. Shrub 10 to 12 feet.

4 V. Parvifolium (Smith, in Rees' cyclo. no. 3.) pedicels solitary, 1-flowered, clavate while bearing the fruit; leaves elliptic, obtuse pointed, entire, smooth, glaucous and slightly veined beneath; stem acutely angular; calyx hardly divided. H. Native of the north-west coast of America, where it was collected by Mr. Menzies; and in the Island of Sitka by Bongard. Branches smooth, as acutely angled as in V. myrtillus. The leaves agree most in shape with V. ovalifolium, but are not a quarter the size, even when full grown. The berries are red, and make excellent tarts. They appear to be smaller than the last, and crowned with a similar calyx.

Small-leaved Bilberry. Shrub 8 to 10 feet.

5 V. Geminiflorum (H. B. et Kunth, nov. gen. amer. 3. p. 267.) flowers axillary, twin, drooping, deciduous; leaves oblong, bluish, crenulated, reticulately veined, rather membranous, glabrous; anthers furnished with 2 awns on the back. F. Native of Mexico, between Omitlan and Moran. Habit and stature of V. myrtillus. Branches angular, downy. Leaves 8-10 lines long, paler beneath. Corolla campanulate, ventricose at the base, with short orovate blunt segments. Filaments membranous, glabrous.

Twin-flowered Whortle-berry. Shrub 1 foot.

6 V. Nitium (Thunb. jap. 155.) pedicels solitary, 1-flowered; leaves ovate, serrated, hairy all over, as well as the young branches. H. Native of Japan, on the hills between Miao and Jedo. Branches terete. Flowers on very short stalks.

Hairy Bilberry. Fl. April. Shrub 2 to 3 feet.

7 V. Ulmo'no'sum (Lin. spec. 499.) pedicels somewhat aggregate, 1-flowered; leaves ovate, entire, smooth; branches terete. H. Native of Sweden, Germany, Siberia, Switzerland, Savoy, Scotland, and the north of England; as well as in the more northern parts of America, and on its west coast; and in the Island of Sitka, on marshy mountain heaths and alpine bogs. Smith, engl. bot. t. 581. Fl. dan. 231. Myrtillus grandis. Baul. hist. 1. p. 518. Taller than the Common Bilberry, and of a more glaucous hue. Leaves glaucous beneath. Flowers flesh-coloured, with 8 long-horned stamens. Berries large, juicy, black, covered with a mealy bloom; they are eatable, but not either very grateful or wholesome. A variety with slightly pointed leaves was published by an apothecary at Berne, in 1787, as V. mucronatum, an imaginary species.


8 V. Calycinum (Smith, in Rees' cyclo. no. 7.) pedicels solitary, 1-flowered; leaves obovate, serrated, smooth, with downy ribs; branches angular; calyceine segments deep, ovate. H. Native of the Sandwich Islands, in woods upon lofty mountains. Leaves ½ inch long, and near an inch wide. Corolla oblong, with 5 angles.

Large-calycized Bilberry. Shrub 2 to 3 feet.

9 V. Angustifolium (Ait. hort. kew. ed. 2. vol. 2. p. 326.) pedicels scattered, mostly solitary, 1-flowered, naked; leaves lanceolate, nearly entire, downy at the ribs and margins. H. Native of Canada, about Hudson's Bay and Labrador. Berries large, bluish black, known by the name of Bluets. V. myrtilloides, Michx. fl. bor. amer. 1. p. 234. Michaux says this species has the habit of V. myrtillus; its leaves being membranous, of a narrow lanceolate form.


Willowy Whortle-berry. Shrub creeping.

11 V. Essef'torum (Michx. fl. bor. amer. 1. p. 234.) flowers
Native corolla. 

**Flowers in sessile tufts.**

12. *V. gale'zans* (Michx. fl. bor. amer. 1. p. 232.) flowers on very short stalks, in sessile tufts; leaves sessile, lanceolate, wedge-shaped, slightly serrated, downy; calyx pointed; corollas ovate, much contracted at the mouth; style prominent. H. Native of Virginia and Carolina, in shady woods and swamps. V. galif'ormis, Smith, in Rees' cyclo. no. 16. Flowers small, yellowish-white. Berries small, globular, black. Michaux describes this shrub as having the aspect of *Myrica Gale*, with slightly downy branches. Leaves varying. The pedicels shorter than the flowers, burst from a bud, composed of numerous crowded scales.


13. V. *tenu*llum (Ait. hort. kew. ed. 2. vol. 2. p. 328.) flowers in dense sessile tufts; leaves nearly sessile, ovate-lanceolate, acuminate, finely serrated, smooth, except the rib and margins; branches angular, with a downy line on each side; calyx of 5, deep, acute segments. H. Native from New England to Virginia, on dry hills, on a gravelly soil. Wats. dendr. brit. 35. V. Pennsylvanicum, Lam. dict. 1. p. 74. Michx. fl. bor. amer. 1. p. 232. A low, very branching shrub. Corollas pale red, or white. Berries large, bluish, extremely sweet, and agreeable to eat. The mountains of Pennsylvania produce an immense variety of this species, in size and shape of the fruit, leaves, and flowers. Leaves sometimes an inch long.


14. V. *ligustrinum* (Michx. fl. bor. amer. 1. p. 283.) flowers nearly sessile, in tufts; leaves nearly sessile, erect, lanceolate, mucronate, finely serrated, veiny, downy; corolla longish, ovate; branches angular. H. Native from Pennsylvania to Virginia, in dry woods; common on the mountains. Pursh, fl. amer. sept. 1. p. 238. exclusive of the syn. of Wild. A straight shrub. Leaves membranous, furnished with conspicuous, often purplish veins. Scales of the flower-buds often purplish. Corollas purplish-red. Berries black. The leaves vary extremely in shape and size. The *V. ligustrinum* of Linnaeus is a nomenity, or rather no *Vaccinium*, according to Smith, being the very same plant with *Lyonia paniculata*.


***Flowers disposed in racemes.***

15. V. *pa'llidum* (Ait. hort. kew. ed. 2. vol. 2. p. 355.) racemes bracteate; corolla cylindrically bell-shaped; leaves ovate, acute, finely serrated. H. Native of North America, from whence it was said to have been sent, in 1772, to Kew Gardens, by Dr. Samuel Martin; but Mr. Pursh never met with it.


16. V. *arbo'reum* (Marsh. in Michx. fl. bor. amer. 1. p. 230.) pedicels axillary and solitary, or terminal and racemose, naked; leaves ovate, acute, with slight glandular serratures, polished above, and rather downy beneath; corollas bell-shaped, acute; stamens the length of the tube. H. Native from North Carolina to Florida, in dry woods on the rocky banks of rivers. V. diffusum, Ait. hort. kew. ed. 2. vol. 2. p. 356. A large shrub, sometimes 20 feet high, very elegant. Corollas white, tinged with red. Berries globular, black, almost dry. Branches terete, downy while young. This species joins the solitary flowered species with the racemose flowered species; the axillary flowers being solitary and pedicellate, and the terminal ones racemose.


17. V. *stamineum* (Lin. spec. 498.) racemes downy, with oval bracteas as long as the flowers; anthers biaristate on the back, twice as long as the spreading bell-shaped corolla; leaves elliptic, acute, entire, glaucous and rather downy beneath. H. Native from New England to Florida. Andr. bot. rep. 263. V. album, Pursh, fl. amer. sept. 1. p. 235. V. elevatum, Banks, herb. Lod. cat.—Pluck. mant. 22. phyto. t. 329. f. 3. Trunk 2 feet high, with numerous green branches, which are downy while young. Leaves 1½ or 2 inches long, on very short downy stalks. Flowers decandrous, copious, white, having linear or nearly linear anthers, which are spurred near the base. Berries greenish or white, called *Deer-berries*. The bracteas resemble the leaves, but are much smaller. The *V. album*, Lin. is *Xylosteum citatum*, Pursh, fl. amer. sept. 1. p. 161.; and therefore there is no wonder that subsequent investigators could never ascertain the *V. album* of Linnaeus. We must notice another error of Linnaeus, to prevent mistake. He cites, under *V. stamineum*, the proper figure of Plukenet, but with a wrong synonyme or definition. Here also it falls to our lot to correct him respecting another of Kalm's plants, *V. mucronatum*, which has ever remained as unintelligible as *V. album*. His described specimen is certainly a pomaceous plant.

*Var. β*; (H. B. et Kunth. nov. gen. amer. 3. p. 267.) leaves larger, ciliated on the nerves beneath and margins. H. Native of Mexico, in woods between Pachuca and Real del Monte. Shrub ½ foot. Corolla campanulate, white.


*Var. β, hámile* (Wats. dendr. brit. t. 32.) flowers white; anthers red; pedicels solitary, axillary; shrub ½ foot high.


ERICACEÆ.

LI. Vaccinium.

Vaccinium Crassifolium (Thunb. fl. jap. 156.) racemes axillary, longer than the glabrous, acute, serrated leaves; bracteas lanceolate, serrate; pedicels furnished with 2 awl-shaped bracteoles. \(\text{H.} \) Native of Japan, in the Island of Nippon. Branches smooth, angular while young. Racemes 2-3 inches long; pedicels secund, drooping. Corollas cylindrical, white. The leaves may be evergreen.

Branclate-flowered Whortle-berry. Shrub.

26 V. ciliatum (Thunb. fl. jap. 156.) racemes axillary, longer than the ovate, bristly, nearly entire leaves; bracteas lanceolate, smooth. \(\text{H.} \) F. Native of Japan, &c. where it is called Sasa-jebus. The stem is smooth, and the branches villous. Leaves 1-2 inches long, unequal. Flowers red, unilateral.

Ciliate-flowered Whortle-berry. Shrub.

27 V. frondosum (Lin. spec. 499.) racemes loose; bracteas ovate, not half so long as the slender pedicels, which bear 2 small linear bracteoles in the middle; leaves obovate-oblong, obtuse, entire, smooth. \(\text{H.} \) Native from New Jersey to Carolina, in open woods. Andrz. bot. rep. 140. V. glaicum, Michx. fl. bor. amer. 1. p. 231. Flowers small, almost globular, white. Berries large, blue, globular, edible, called by the country people Blue Tangles. Branchlets tereate, smooth, and slender. Leaves 2-3 inches long, glaucous beneath, and sprinkled with minute resinous dots. Racemes lateral from the former year’s wood. Flowers drooping, greenish-white, shaped like those of the Lily of the valley, but smaller; anthers included.

Var. \(\beta\), vernístum (Ait. hort. kew. ed. 2. vol. 2. p. 357.) leaves lanceolate, acute at both ends. \(\text{H.} \) H. frondosum, \(\text{H.} \) \(\text{β.} \) lanceolatvum, Pursh. fl. bor. amer. 1. p. 786.


28 V. resinosum (Ait. hort. kew. ed. 2. vol. 2. p. 357.) racemes leafless, viscid, downy, with lanceolate bracteoles on the pedicels; leaves obovate-lanceolate, bluish, entire, covered with resinous dots; calyx in 5 deep ovate segments, longer than the ovary. \(\text{H.} \) Native from Carolina to Virginia, in woods, and on mountains frequent. Curt. bot. mag. t. 1288. Andromeda haccata, Wangh. amer. t. 90. f. 69. Branches tereete, downy when young. Leaves usually 1½ inch long, bright green on both sides, rather viscid. Racemes lateral from last year’s wood, drooping. Flowers greenish-yellow. Berries black, eatable.

Var. \(\beta\), rubescens (Pursh. fl. amer. sept. 1. p. 286.) corollas redish. \(\text{H.} \) Curt. bot. mag. 1288.

Var. \(\gamma\), lutescens (Pursh. l. c.) leaves lanceolate; flowers redish-yellow. \(\text{H.} \) V. parvicefórum, Andr. bot. rep. 125.


29 V. arctostaphylos (Lin. spec. 500.) racemes lateral; bracteas all at the base of the pedicels; leaves elliptic, acute, minutely serrated, hairy beneath; stamens as long as the corolla, which is bell-shaped, with very hairy filaments; calyx slightly 5-lobed. \(\text{H.} \) H. Native on the coast of the Black Sea, where it was gathered by Tournefort, who describes it as a shrub about the height of a man, with a trunk as thick as a man’s arm. Young branches downy on two opposite sides. Leaves 2½ inches long. Racemes from the wood of the preceding year, below the fresh leafy shoots, drooping, rather hairy, each composed of 8-10 pendulous flowers, of a dirty white color, tinged with purple. Anthers spurred at the base. Corollas bell-shaped, hairy. Tournefort judges this to be, with great probability, the \(\alpha r k o t o s t æ f o l e, \) or Bear’s Grape, of Galen. What the var. \(\beta\) of Linnaeus may be, we know not, as nothing answerable to it is to be found in Tournefort’s Corollarium.


30 V. pyaphiliuM (Smith, in Rees’ cyclo. no. 22.) racemes lateral; bracteas all at the base of the pedicels; leaves ovate-
lanceolate, acute, serrulate, smooth on both surfaces, except the mid-rib; stamens nearly as long as the bell-shaped corolla, with smooth slightly fringed filaments; calyx 5-lobe. \( \frac{1}{2} \) F. Native of Madeira, on the loftiest part of the island, where it forms impenetrable thickets. V. arctostaphylos, Andr. bot. rep. t. 30. Curt. bot. mag. 974. V. Madèrens, Link. enum. I. p. 375. Corollas larger than those of the preceding, pale green, with a purple tinge; sometimes it appears to be all over purple externally. The Caucasian plant, discovered by Pallas, is said not to differ from that of Madeira. Pallas says the berries are black, juicy, eatable, and gratefully acid; and he sometimes found the flowers 4-cleft.


31 V. cylindraceum (Smith, in Rees' cycl. no. 23.) racemes lateral; bracteas serrated, all at the base of the pedicels; leaves elliptic-lanceolate, acute, serrulate, quite smooth, except the base of the mid-rib; stamens half the length of the cylindrical corolla, with hairy filaments; calyx slightly 5-toothed. \( \frac{1}{2} \). Native of the Azores, on the mountains, where it is called *Uva de Serra,* or Mountain-berry. Apparently arborescent. Branches downy on the opposite sides. Racemes numerous, rising from the wood of the preceding year. Flowers drooping, nearly an inch long, apparently red or purple.

*Cyldrical* flowered Bear's Grape. Shrub or tree.

32 V. lepidophorum (Polil, pl. bras. 2. p. 36. t. 123.) racemes axillary and terminal, loose, downy; flowers unilateral; leaves sessile, linear, attenuated at the base, ciliated, glabrous above, but yellowish-brown beneath, with the nerves downy. \( \frac{1}{2} \). G. Native of Brazil, in the province of Minas Geraes, on the higher mountains, in dry places. Stem dark, hoary. Leaves deciduous. Bracteas of two forms, acute, ciliated. Corolla white, glabrous, having the teeth reflexed.

*Ledum-leaved* Whortle-berry. Shrub 1 foot.

§ 2. Leaves evergreen.

* Flowers racemose.

33 V. meridionale (Swartz. f. ind. occ. p. 676.) racemes erect, downy; bracteas coloured, solitary, ovate, at the base of the pedicels; leaves ovate, crenated, smooth; stem arborescent. \( \frac{1}{2} \). G. Native of Jamaica, on the Blue Mountains. Tree with a very straight trunk and hard wood. Branches downy when young. Leaves 1 inch long. Flowers drooping, reddish-white. Corollas ovate, quadrangular before expansion, contracted at the mouth, with 4 acute, recurved segments. Stamens 8, as long as the corolla: their filaments hairy in the middle. Berries roundish, juicy, pleasantly flavoured, pale red, resembling those of *V. vitis-idaea.* The flowers are rarely 5-cleft, and decandrous. Racemes rising from the top of the wood of the preceding year.


34 V. confertum (H. B. et Kunth, nov. gen. amer. 3. p. 265. t. 250.) racemes axillary, solitary, short, sessile, drooping, about equal in length to the leaves; leaves ovate elliptic, bluntish, crenulated, coriaceous, glabrous; flowers decandrous; anthers mucous. \( \frac{1}{2} \). H. Native of Mexico, on high mountains near Moran and Cerro de Oyamel. Branchlets angular, glabrous. Leaves 3-6 lines long, beset with scattered, brown, minute dots beneath. Pedicels bibracteate at the base. Corolla campanulate, white, with ovate, acute, recurved segments.

*Crowed-leaved* Whortle-berry. Shrub 1 foot.

35 V. floribundum (H. B. et Kunth, nov. gen. amer. 3. p. 266. t. 221.) racemes terminal and axillary, drooping, much longer than the leaves; leaves oblong, acute, coriaceous, glabrous, crenulated; flowers obovate, angular and decandrous; anthers mucous. \( \frac{1}{2} \). G. Native of Peru, on the mountains near Caixa marca. Branchlets angular, downy. Leaves 6-7 lines long, besprinkled with a few black dots beneath. Corolla campanulate, white, having a quadrifid or quinquifid limb, with oval bluntish segments. Flowers about the size of those of *V. vitis-idaea.* Filaments membranous, ciliated. Racemes approximately at the tops of the branches (f. 142.)

*Bundle-flowered* Whortle-berry. Shrub.

36 V. luzcastrum (Cham. in Linnœa. 7. p. 524.) arborescent; branches angular, sometimes downy; leaves coriaceous, on short petioles, oval-lanceolate, acute, glabrously serrated, having the petioles and mid-rib downy above, the rest glabrous; racemes secund, rising from the branches of the preceding year, leafless; flowers drooping; corollas unciately campanulate; anthers bizarinate. \( \frac{1}{2} \). F. Native of Mexico, below St. Salvador. Flowers white. Fruit black and edible. Nearly allied to *V. meridionale.*


37 V. caraccasianum (H. B. et Kunth, nov. gen. amer. 3. p. 266.) racemes axillary, twice longer than the leaves; flowers secund, obovate or decandrous; leaves elliptic, acute, crenated, coriaceous, glabrous, shining above; anthers bizarinate on the back. \( \frac{1}{2} \). H. Native on the southern declivity of Mount Silla de Caraccasa. Branchlets angular, glabrous. Leaves shining above, 9-10 lines long. Racemes crowded at the tops of the branches. Corolla campanulate, glabrous, reddish-white, with a 4-5-parted limb; segments ovate, acuminate. Filaments membranous, ciliate.


38 V. vitis-idaea (Linn. spec. 500.) racemes terminal, drooping, with ovate concave bracteas, which are longer than the pedicels; leaves ovate, revolute, minutely toothed, dotted beneath; corolla bell-shaped. \( \frac{1}{2} \). H. Native of dry, barren, stony woods and heaths in the north of Europe; plentiful in Scotland, Westmorland, Derbyshire, and Wales. Mr. Pursh says it occurs on rocks near the sea-coast, from Canada to New England; but the American plant is more robust than the European, with considerably larger leaves. Lodd. bot. cab. 616. It has also been found in the islands of Kamschatka, Unalaska, and St. Lawrence. Smith, engl. bot. 598. Fl. dan. t. 40. Lodd. bot. cab. 1025. — *Vitis-idaea* rubra, Cam. epit. 136. Root creeping, woody. Stems ascending a span high; young branches terete, downy. Leaves like those of box, but darker. Flowers pale pink, 4-cleft, obovate. Anthers without spurs. Berries blood-red, acid, astringent, and bitter, less palatable in tarts than either the Cranberry or Bilberry, but excellent in a robb or jelly, for colds and sore throats, as well as to eat with roast meat; to which latter purpose this jelly is universally applied by the Swedes, and forms a sauce to venison which is thought superior to currant jelly. In Wales it is used with roast mutton. It may be cultivated in a moist shady border of bog-earth, like the Bleaberry.
**Excerpt from a natural history text on Ericaceae, specifically mentioning Vaccinium.**

**Cow-berry or Red Whortle-berry.** Fl. June. Britain. Shrub ½ foot.

39 V. MYRTIFOLIUM (Michx. fl. bor. amer. 1. p. 229.) creeping, quite smooth; leaves petiolate, oval, shining, revolute, sparingly and minutely toothed; racemes axillary, nearly sessile, of few flowers; corolla bell-shaped, somewhat inflated, minutely 5-toothed; anthers without dorsal horns. h. H. Native of Carolina. Michaux describes the berries as small, globose, crowned by the calyx, black, on short stalks.


40 V. calyculatum (Andr. bot. rep. t. 105.) racemes lateral and terminal, corymbose; bracteas shorter than the pedicels; leaves elliptic, crenated, smooth, paler and veiny beneath; corolla bell-shaped; stem diffuse. h. H. Native of Carolina. Curt. bot. mag. 1152. A hairy shrub, requiring some shelter from our variable winters and springs. Leaves not an inch long, with a little minute pubescence on the mid-rib and petioles. Flowers 5-cleft, decandrous, prettily variegated with pink and white, drooping, on red corymbose stalks. Stamens hairy.


41 V. villosum (Smith, in Rees’ cyc1. no. 29.) racemes longer than the leaves; pedicels, calyx, corolla, and lanceolate bracteas densely hairy; leaves elliptic, entire, revolute, coriaceous, with a blunt point, hairy on the upper side. h. F. Native of Mexico, from whence specimens were sent by Mutis to Linneæus. Branches densely hairy when young. Leaves crowded, an inch long, on thick downy petioles, scarcely hairy beneath, except on the mid-rib. Racemes towards the ends of the younger branches, axillary, drooping, very hairy. Pedicels bracteolate. Corolla purplish, with 5 hairy angles, and as many recurved teeth. Perhaps a species of Gaylussacia.

Villos Whortle-berry. Shrub.

42 V. stitifolium (Andr. bot. rep. t. 480.) racemes terminal, corymbose; bracteas shorter than the pedicels; leaves elliptic-obovate, acute, crenated, smooth and shining; corollas cylindrical. h. H. Native of Carolina. Curt. bot. mag. 1550. Stems either erect or diffuse. Leaves ½ to 1 inch long, paler and veiny beneath. Pedicels, bracteas, and calyx very smooth, of a shining red or purple colour. Calyx of 5 broad, or rather shallow segments. Corollas ovate, oblong, white or pink, with 5 slight spreading teeth, decandrous. The branches are downy on two opposite sides.


43 V. schlechtendalii; racemes elongated, erect, and are as well as the pedicels, peduncles, and ribs of leaves on the under surface, downy; leaves rather coriaceous, permanent, with the nerves and veins prominent on both surfaces, lanceolate or ovato-lanceolate, acute, adpressedly serrated, callymously mucronate at the apex as well as the serratures, and running into the short petioles, at the base; fructiferous branches nearly leafless. h. F. Native of Mexico, near Jalacingos, in woods. Vaccinium, nov. spec. Cham. et Schlecht. in Linnaea. 6. p. 395. An erect, much-branched, evergreen, smoothish shrub. Leaves 2 inches long, and 9 lines broad. Bracteas linear, acute, caducous; calyx bifracteate at the base. Berries drooping, umbonate, crowned by the minute calycine teeth.

Schlechtendal’s Whortle-berry. Shrub.

44 V. buxifolium (Salisb. par. t. 4.) racemes axillary, of few flowers; leaves petiolate, obovate, toothed or crenated, smooth on both surfaces; stems tufted; corollas roundish-ovate; filaments glandular; stigma capitulate. h. H. Native of the western parts of Virginia, near Winchester and the Sweet Springs. Curt. bot. mag. 928. Loddi. bot. cab. 648. V. brachytherum, Michx. fl. bor. amer. 1. p. 234. A handsome little shrub, in stature and general aspect, resembling V. vitis-idaea. The leaves are, however, smooth, even, and not dotted on the under side. Corollas globular, contracted at the mouth, not bell-shaped. Stamens 10. Anthers spursless at the base, discharging their pollen by lateral, not terminal apertures. Flowers white, delicately striped with red.


45 V. ovatum (Pursh, fl. amer. sept. 1. p. 290.) racemes axillary and terminal, bracteate, short; leaves on short petioles, oblong, ovate, acute, revolute, serrated, smooth, coriaceous; corolla cylindrical, campanulate; calyxes acute. h. H. Found by Governor Lewis on the banks of the Columbia River, and by Mr. Menzies on the north-west coast of America. Hook. et Arn. in Beech. voy. pt. bot. p. 144. Shrub much branched; branches hairy, as well as the petioles. The foliage is like that of Pernettya mucronata.


46 V. canadense (Richards. in Franklin. 1st journ. append.) leaves lanceolate, quite entire, downy; racemes terminal; flowers fasciculate; style inclosed. h. H. Native of Arctic America.

Canadian Whortle-berry. Shrub.

47 V. scabrum (Pohl. pl. bras. 2. p. 37. t. 124.) racemes terminal and axillary, longer than the leaves, beset with glandular hairs; leaves on short petioles, oblong, mucronate, with revolute ciliated edges, sebaceous, having the nerves hispid beneath. h. G. Native of Brazil, in turfy bogs at Registo Velho and Villa de Babacena. Stems many from the same root, leafy at the tops. Leaves scabrous above, and glabrous beneath, permanent. Pedicels pilose, bracteate at the base. Bracteas of two forms, deciduous. Corolla glabrous, campanulate, white.

Scabrous Whortle-berry. Shrub 1 foot.

48 V. montanum (Pohl. pl. bras. 2. p. 38. t. 125.) racemes axillary, bracteate, pilose; leaves on short petioles, oblong-elliptic, mucronate, hardly narrowed at the base, glabrous, but having the nerves on the under side rather pilose. h. G. Native of Brazil, in the province of Minas Geraes, in dry places on Serra de Pinheiro. Leaves permanent, dark green above, and yellowish-green beneath, 8 lines long and 4' broad. Flowers unilateral. Corolla campanulate, glabrous, white.

Mountain Whortle-berry. Shrub diffuse.

**Flowers disposed in scaly tufts, nearly sessile.**


Var. β, lanceolatum (Pursh, fl. bor. amer. 1. p. 290.) leaves lanceolate, acute at both ends.

Var. γ, obtusum (Pursh, l. c.) leaves roundish-ovate.


**Flowers solitary, pedicellate.**

50 V. cereum (Forst. prod. 28.) pedicels axillary, solitary, 1-
flowered, furnished with 2 lanceolate bracteas about the middle; leaves roundish-ovate, serrated; calyx of 5 broad ovate pointed segments.  G. Native of Otaheite and Oahu. Andrómeda céréa, Lin. fl. suppl. 238. Branches terete, slightly downy when young. Leaves mucronate, about an inch long. Corolla ovate-oblong, with 5 angles, and 5 erect small segments. Stamen 10. Anthers with 2 dorsal horns, according to Linnaeus. Perhaps a species of *Pernétya*.

*Waxy Whortle-berry.* Shrub small, ½ foot. 51 V. reticulatum (Smith, in Rees' cyclo. no. 30.) pedicels axillary, solitary, 1-flowered, downy; leaves obovate, more or less serrated, coriaceous, with a blunt point, strongly reticulated on both sides, and nearly smooth.  G. Native of the Sandwich Islands, on the high mountains, in woods, where it was collected by Mr. Menzies. Branches when young angular and downy. Leaves an inch long, with revolute margins. Pedicels bracteless, swelling upwards. Calyx in 4 or 5 deep-ribbed clefted segments, as length involute. Corolla cylindrical, twice as long as the calyx, purple, slightly hairy, with 4 or 5 erect blunt teeth. Style hairy. Berries globular, depressed, nearly smooth.


*Trailing Whortle-berry.* Fl. May, June. Ch. 1827. Shrub creeping.

53 V. penduliflorum (Gand. in Freyc. voy. pt. bot. p. 454.) pedicels axillary, solitary, 1-flowered, elongated, pendulous in the fruit-bearing state; flowers deciduous; calyces clefted lanceolate, one-half shorter than the corolla, which is campanulate and 5-angled; anders awned; branches angular, leafy; leaves oblong, sharply serrated, rather coriaceous.  G. Native of the Sandwich Islands, at the altitude of 500 hexapods. An erect glabrous shrub.

*Pendulous-flowered Whortle-berry.* Shrub. 54 V. meiosphyllum (Herb. Reinw. ex Blum. bijdr. p. 861.) stem shrubby; branchlets puberulous; leaves oval, obtuse, quite entire, with recurved margins, veiny, coriaceous, glabrous; pedicels almost solitary, axillary, 1-flowered; corollas urceolate; anthers mutic; calyx bracteate.  G. Native of the Sandwich Islands, on the lofty mountains, where it was found by Mr. Menzies. The branches are angular, and always smooth, like every other part. Leaves rather longer than the *V. reticulatum*, with less prominent veins. Calyx segments keeled. *Tooth-leaved Vaccinium.* Shrub. 55 V. obtusum (Pursh, fl. amer. sept. 1. p. 290.) pedicels axillary, solitary, 1-flowered, smooth; leaves obovate, with sharp tooth-like serratures, coriaceous, veiny, very smooth; calyx longer than the smooth ovary.  G. Native of the Sandwich Islands, on the lofty mountains, where it was found by Mr. Menzies. The branches are angular, and always smooth, like every other part. Leaves rather longer than the *V. reticulatum*, with less prominent veins. Calyx segments keeled.

*Blunt-leaved Whortle-berry.* Shrub. 56 V. empetrifolium (H. B. et Kunth, nov. gen. amer. 3. p. 263. t. 268.) creeping, quite glabrous leaves approximate, subimbricated, obtuse, quite entire, coriaceous, glabrous; pedicels solitary, axillary, 1-flowered; flowers octandrous; corollas tubularly campanulate; anthers mutic; calyx bracteate at the base.  G. Native of the western declivity of the burning Mount Antisana, between Pintac and Pinautara. Leaves 2½ lines long. Corolla scarlet, glabrous: with ovate, acute, spreading segments. Anthers dehiscing lengthwise. Filaments ciliated.

*Empetrum-leaved Whortle-berry.* Shrub creeping. 58 V. penéoides (H. B. et Kunth, nov. gen. amer. 3. p. 264.) creeping, glabrous; leaves approximate, subimbricated, oblong, acute, obsoletely and remotely crenulat, stiff, glabrous, a little ciliated; pedicels short, axillary, solitary, 1-flowered; flowers octandrous; calyx bracteate; anthers mutic.  G. Native of the province of Quito, at Mount Tunguragua, near Cuchilla de Guandasiva. Leaves 3 lines long. Branches downy. Flowers solitary, on the tops of the branches. Corolla tubularly campanulate, scabrous, with ovate acutis segments. Filaments pilose.

*Penea-like Whortle-berry.* Shrub creeping. 59 V. acumínatum (H. B. et Kunth, nov. gen. amer. 3. p. 264.) arborescent; leaves roundish, elliptic, acute, quite entire, obsoletely 3-nerved, coriaceous, glabrous; flowers axillary, solitary, twin or tern, almost sessile, octandrous; calyx bracteate; anthers mutic.  G. Native of New Granada, in Paramo de Almaguer, and near Pansitara. Branches clothed with rusty hairs, densely leafy. Leaves on short petioles, 3 lines long. Corollas nearly globose, white, with a quadridif refractil limb. Filaments pilose.

*Acuminate-leaved Whortle-berry.* Shrub 10 to 15 feet. 60 V. alaternoides (H. B. et Kunth, nov. gen. amer. 3. p. 265.) arborescent leaves roundish, elliptic, acute, quite entire, obsoletely 3-nerved, coriaceous, glabrous; flowers axillary, solitary, twin or tern, sessile, octandrous; calyx bracteate; anthers mutic, half exserted.  G. Native of the Andes of Peru, near Ayavaca. Branches downy. Leaves 8-9 lines long. Corolla tubularly campanulate, white, with a quadridif revolute limb. Filaments villous.

*Alaternus-like Whortle-berry.* Shrub or small tree.

**LIII.** OXYCOCCUS (from οξυς, oyxys, sharp, and κόκκος, kokkos, a berry; in reference to the sharp acid taste of the berries). Pers. syn. 1. p. 419. Pursh, fl. amer. sept. 1. p. 263. 5 R
Nutt. gen. amer. 1. p. 250.—Vaccinium species of Lin. and others.


1. *O. pallustris* (Petr. ench. 1. p. 419.) stems filiform, creeping; leaves small, ovate, entire, acute, smooth, with revolute margins; pedicels terminal, 1-flowered; segments of corolla oval. B. H. Native of turfy mossy bogs in the mountainous parts of Europe; common in Switzerland, Russia, Scotland, Ireland, and the north of England, as well as in Lincolnshire and the neighbouring part of Norfolk. Mr. Pursh speaks of it as common on the boggy mountains of Northern America, from Canada to Pennsylvania, Island of Unalaska. O. vulgaris, Pursh, fl. amer. sept. 1. p. 263. O. Europeus, Nutt. gen. amer. 1. p. 251. Vaccinium oxyccocus, Linn. spec. 500. Smith, engl. bot. t. 319. Oed. fl. dan. t. 80. Vaccinium oxyccocus, var. a, ovalifolius, Michx. fl. bor. amer. 1. p. 228. Vaccinia palustris, Ger. macr. 1410. Lob. icon. 2. t. 109. Oxyccoccus, Cord. hist. 140. 2 f. 1. Leaves convex, and dark shining green above, and glaucous beneath. Stems reddish. Pedicels few together, about the tops of the branches, red, slightly hairy. Corolla pink, with reflexed oblong segments. Stamens with purple downy filaments and yellow anthers. Berries pear-shaped, globular, often spotted, crimson, with a peculiar flavour, with a strong acidity, grateful to most people in the form of tarts, for which purpose they are largely imported from Russia. Not long since, cranberries from Lincolnshire and the north-west corner of Norfolk were sold in the streets of Norwich by cart-loads; but the extensive inclosures have in many parts destroyed and drained their native bogs. Lightfoot records, that at Longtown, on the borders of Cumberland, not less than 20l. or 30l. worth were sold each market day, for 5 or six weeks together, and dispersed over different parts of the kingdom. In Sweden, these berries serve only to boil silver plate to its due degree of whiteness, their sharp acid corroding the superficial particles of the copper alloy.


2. *O. macrocarpus* (Pursh. fl. amer. sept. 1. p. 263.) stems prostrate, filiform, creeping; leaves elliptic-oblong, nearly flat and obtuse, distantly subserreolated on the margins, glaucous beneath, downy at the points when young: segments of the corolla linear-lanceolate; flower-bearing branches erect, proliferous; pedicels lateral. B. H. Native from Canada to Virginia, in bogs, principally on a sandy soil, and on high mountains. Wats. dendr. brit. t. 122. Vaccinium macrocarpum, Ait. Hort. kew. ed. 1. vol. 2. t. 7. Hook. bot. mag. 2506. Lam. ill. t. 286. f. 4. Vaccinium hispidulum, Wangh. amer. t. 30. f. 67. Vaccinium oxyccocus, var. b, oblongifolius, Michx. fl. bor. amer. 1. p. 228. Points of young leaves, peduncles, and the margins of the calyx and bracteas downy. Berries spherical, red, often remaining throughout the winter. This is a larger and more robust plant than the preceding. Several flowers come forth at the ends of the last year's branches, surmounted by the shoots of the present year. The bracteas are situated in the upper part of the pedicels in this, while in the preceding they are situated at the lower part. The berries are larger, and of a brighter red than the last, and are collected in great abundance for making tarts in America, and exported from thence to Europe; but they always prove here far inferior in quality to the Russian cranberries, however excellent in America. The best way of having American cranberries in Europe is by cultivation in an artificial bog, with great plenty of water, and a first contrived by Sir Joseph Banks. A very few square yards of ground thus employed will yield as many cranberries as any family can use. If allowed to hang until they are full ripe, as late as October, they are even better than the common cranberry, and may be kept dry in bottles throughout the year. Our wild cranberries have generally been gathered too early; as may also be the case with those brought from America. "Wherever there is a pond," Mr. Neill observes, "the margin may, at a trifling expense, be fitted up for the culture of this plant, and it will continue productive for many years. All that is necessary is to drive in a few stakes 2 or 3 feet within the margin of the pond, and to place some old boards within these, so as to prevent the soil of the cranberry-bed from falling into the water; and lay a parcel of small stones or rubbish in the bottom, and over it peat or bog earth, to the depth of about 3 inches above and 7 inches below the surface of the water. In such a situation the plants grow readily; and if a few be put in they entirely cover the bed in the course of a year or two, by means of their long runners, which take root at different points. From a very small space a large quantity of cranberries may be gathered; and they prove a remarkable regular crop, scarcely affected by the state of the weather, and not subject to the attack of insects.

Large-fruited or American Cranberry. Fl. May, July. Ct. 1760. Shrub creeping.


Erect Cranberry. Fl. May, June. Ct. 1806. Shrub 2 feet. Cult. When any of the species are grown for the sake of their berries, they should be planted in an artificial bog, as mentioned under *O. macrocarpus*. But when grown only for having a specimen of the plants, they will grow well in pots filled with peat and sand, having sphagnum set round their roots: the pots should be well drained with sherds, and set in deep pans of water.


Linn. syst. Pentandria, Monogynia. Limb of calyx 5-cleft. Corolla tubular, ventricose at the base; limb 5-toothed. Stamina 10, inserted in the limb of the calyx, included; anthers mucous, drawn out from the top into 2 little tubes. Style erect; stigma depressedly capitately. Drupes nearly globose, clothed by the calyx, 10-celled; cells 1-seeded. Seeds lenticular, smooth. —Evergreen or deciduous shrubs. Leaves scattered, coriaceous, each terminated by a mucroned or gland. Racemes axillary, approximate. Flowers scarlet, bracteate. Very nearly allied to Thibadella, but very distinct.

* Corollas urceolate, or cylindrical.

t. 257.) young branchlets hispid; leaves elliptic or elliptic-oblong, rounded at both ends, terminated by a depressed brown gland, pilosely pubescent on both surfaces with minute scattered glands beneath, toothed at the apex; racemes axillary and approximate at the tops of the branches; flowers and fruit downy. ḡ. S. Native near Caracas, on Mount Avila, and near Santa Fe de Bogota. Corollas scarlet. Calycine segments ovate, acute.

**Box-leaved Gaylussacia.** Shrub.

2 G. *p. inermis* (Pohl. pl. bras. 2. p. 40. t. 126.) leaves imbricated, oval-elliptic, terminate at the apex, terminated by a callous mucrone; calyx and corolla glabrous; bracteas of 2 forms, linear-lanceolate and oblong acute. ḡ. G. Native of Brazil, in the province of Rio Janeiro, at Rio Tijuco, on the mountains. G. buxifolia, Cham. et Schlecht. in Linnaea. vol. 1. p. 528. but not of H. B. et Kunth. Leaves permanent, clothed with yellow down on the nerves beneath. Racemes many-flowered, 2 inches long, downy. Flowers scarlet or crimson.

**Implicated-leaved Gaylussacia.** Shrub 2 feet.

3 G. *p. inermis* (Pohl. pl. bras. 2. p. 41. t. 127.) leaves oblong-elliptic, quite entire, with revolute edges, each terminated by a short callous mucrone, glabrous above, but pilose on the nerves and veins beneath, as well as the calyxes; corollas glabrous; bracteas of 2 forms, linear and oblong, acute. ḡ. G. Native of Brazil, in the province of Minas Geraes, by waysides about Arrayal St. Joao Baptista. Stem branched, hoary. Branches leafy, glabrous, florescente at the tops. Leaves deciduous, remote, green above and yellowish-green beneath, 1 ½ inches long and 8 lines broad. Racemes loose.

**Fair Gaylussacia.** Shrub 2 feet.

4 G. *p. inermis*; branchlets angular, downy; leaves ovate, mucronate, cinereous; flowers axillary, aggregate; teeth of calyx ovate, acute. ḡ. G. Native of Peru. Vaccinium dependens, Ruiz et Pav. in herb. Lamb. Leaves an inch long.

**Dependent Gaylussacia.** Shrub.

5 G. *p. inermis*; branchlets pilose, terete; leaves ovate, acuminate, striated beneath; flowers solitary, nearly sessile; calyx teeth ovate, acute. ḡ. G. Native of Peru. Leaves hardly more than a line and a half long. Flowers scarlet. (v. s. in herb. Lamb.):

**Small-leaved Gaylussacia.** Shrub.

6 G. *p. inermis*; branchlets terete; leaves ovate, acute, pilose; flowers aggregate; calyces teeth ovate, acute. ḡ. G. Native of Peru. Leaves half an inch long. Flowers scarlet.

**Crenated-leaved Gaylussacia.** Shrub.

7 G. *p. inermis* (Cham. et Schlecht. in Linnaea. 1. p. 534.) branches hispid; leaves oblong, retuse, rugose, with revolute margins, scabrous above and hairy beneath, furnished with 2-3 short teeth on each side; racemes decumbent, drooping, 8-10-flowered, beset with glandular hairs; corollas tubularly ureculate, hairy on the angles and at the tops of the segments; young leaves beset with pili, which are tipped with black glands. ḡ. G. Native of Brazil, without the tropic. Filaments ciliated. Calyces teeth narrow, acuminate.

**Rugose Gaylussacia.** Shrub 1 to 2 feet.

8 G. *p. inermis* (Cham. et Schlecht. in Linnaea. 1. p. 533.) branches hispid; leaves nearly glabrous, elliptic, narrowly oval at the base; petioles pruinose, obtusely serrated towards the apex; racemes lateral, secund, drooping; corollas cylindrical. ḡ. G. Native of Brazil, within the tropic. Racemes terminal, or nearly so, and axillary. Flowers dense, secund. Pedicels hispid. Calyces segments short, elliptic, obtuse, ciliate. Corollas pilose or smoothish.

**Rhododendron Gaylussacia.** Shrub.

9 G. *p. inermis* (Cham. et Schlecht. in Linnaea. 1. p. 530.) glabrous or downy; leaves elliptic-lanceolate; racemes terminal, aggregate; corollas cyllindrical; ovarium glabrous. ḡ. G. Native of Brazil, within the tropic, in open sandy places; near Caravellos Freireis. Vaccinium Brasilienis, Spreng. nov. prov. p. 42. syst. 2. p. 212. Leaves obliquely serrated towards the tops, with a few ciliate at the base of the younger leaves. Racemes axillary, erect, secund, bracteate, of a fine crimson colour, as well as the corollas, which are cylindrically urceolate; calyces teeth roundish, acuminate. There are glabrous and downy varieties of this species.

**False-vaccinium Gaylussacia.** Shrub 1 to 2 feet.

10 G. *p. inermis* (Cham. et Schlecht. in Linnaea. 8. p. 494.) leaves obovate-lanceolate, acute, terminated by an obtuse callous point, with serrulated reflexed margins, an inch long; racemes crimson, usually solitary, nearly terminal, erect, exceeding in leaves; calyces segments short, ovate, acuminate. ḡ. G. Native of Brazil, within the tropic. Corolla tubular, ventricose. Young branchlets pilose. Young leaves ciliate. Leaves yellowish beneath, pilose on the petiole and midrib.

**Myrtle-leaved Gaylussacia.** Shrub.

11 G. *p. inermis* (Cham. et Schlecht. in Linnaea. 1. p. 532.) quite glabrous and pruinose; leaves oblong-lanceolate, acuminate, coriaceous, glabrous, reticulately veined, and triple-nerved beneath; racemes axillary, simple, and are, as well as the calyxes, tomentose; pedicels tribrate at the base. ḡ. G. Native of Java, on trees on the mountains. Anthers biastisate on the back, beneath the apex. Stigma truncate, simple. Capsule 10-celled; cells 1-seeded.

**Lanceolate-leaved Gaylussacia.** Shrub.

12 G. *p. inermis* (Blum. bijdr. s. p. 861.) stem parasitical; leaves oblong-lanceolate, acuminate, coriaceous, glabrous, reticulately veined, and triple-nerved beneath; racemes axillary, simple, and are, as well as the calyxes, tomentose; pedicels tribracteate at the base. ḡ. G. Native of Java, on trees on the mountains. Anthers biastisate on the back, beneath the apex. Stigma truncate, simple. Capsule 10-celled; cells 1-seeded.

**Var. β;** branchlets, rachi, and petioles, downy from shorter hairs; bracteas and calyces ciliate; nerves and veins of leaves prominent beneath. ḡ. G.

**Var. γ;** leaves coriaceous, having the nerves and veins hardly conspicuous beneath, quite glabrous in the adult state.

**Dense-flowered Gaylussacia.** Shrub.

14 G. *p. inermis* (Cham. et Schlecht. in Linnaea. 8. p. 498.) leaves sharply serrated in front, ending in a straight mucrone; calyces segments lanceolate, length of the corolla; filaments ciliated, length of anthers. ḡ. G. Native of Brazil, within the tropic. Branchlets, petioles, rachi, pedicels, and ovaries, beset with long spreading white hairs. Inflorescence crimson, glandulariferous. Leaves having the margins and nerves beneath pilose in the young state. Bracteas and calyces pectinately ciliate. Corollas glabrous.

**Myrtle-like Gaylussacia.** Shrub.

15 G. *p. inermis* (Cham. et Schlecht. in Linnaea. 8. p. 499.) branches marked by cicatrices occasioned by the falling of the leaves; leaves nearly sessile, quite entire, usually acute, terminating
each in an inflexed white mucron; flowers pale, clothed with glandular down; bracteas foliaceous, green, length of flowers; bracteoles somewhat foliaceous, lanceolate, situated under the calyxes; calyce segments lanceolate, about a third the length of the corolla; filaments villos, about a fourth the length of the anthers. ½ S. Native of Brazil, within the tropic.

Pale-flowered Gaylussacia. Shrub.

16 G. angustifolia (Cham. in Linnaea. 8 p. 490.) branches, petals, inflorescence, and calyces downy; leaves coriaceous, linear-lanceolate, narrowed into the short petioles at the base, ending each in a callous acute point, with reflexed inconspicuously serrated edges, shining above and russet beneath; racemes axillary, nearly terminal, erect, exceeding the leaves; lower bracteas foliaceous: superior ones coloured; calyce segments ovate, acuminate, or acutely triangular, and are, as well as the bracteas, ciliated; corollas cylindrical, downy on the nerves; filaments villous, shorter than the anthers. ½ S. Native of equinoctial Brazil. Inflorescence coloured.

Narrow-leaved Gaylussacia. Shrub.

17 G. pinifolia (Cham. et Schlecht. in Linnaea. 1 p. 536. and 8 p. 500.) quite glabrous and pruinose; leaves linear, acute at both ends, crenated; peduncles axillary, 1-3-flowered, furnished with small glandularily serrated bracteas; corolla urceolate, with short erect teeth. ½ S. Native of equinoctial Brazil. The young leaves at the tops of the branches and flowers are crimson. Calyceine teeth ovate, acuminate, cuspidate, with glandularly ciliated edges.

Pin-leaved Gaylussacia. Shrub ½ to 1 foot.

* * Corollas campanulate.

18 G. pseudogaultheria (Cham. et Schlecht. in Linnaea. 1 p. 535.) branches straight, hispid; leaves narrow-elliptic, subcordate, searous on both surfaces, obsolesely serrated towards the top; racemes axillary and terminal at the tops of the branches, approximate, second, erect, hispid, bracteate. ½ S. Native of Brazil, within the tropic. Stems rising from the root, biennial or triennial, about a foot high, branched. Flowers white, hardly crimson. Corollas campanulate, with hairy angles. Calyceine teeth narrow, lanceolate. Ovary hairy, glandular.

False Gaultheria Gaylussacia. Shrub 1 foot.

19 G. decipiens (Cham. in Linnaea. 8 p. 500.) branches hairy; leaves coriaceous, elliptic, obtuse, attenuated at the base, obsolesely crenated towards the apex; racemes from the axis of the ultimate leaves, second, erect; calyceine teeth triangular, acuminate; corolla campanulate, pilose on the angles, with erect triangular teeth. ½ S. Native of Brazil, within the tropic. G. buxifolia, Cham. et Schlecht. in Linnaea. 1 p. 528. but not of H. B. et Kunth. Leaves glabrous above, but pubescent on the nerves beneath. Corollas white, campanulate, not scarlet. This species has been referred to G. umbellata by Pohl, but it differs from it in the flowers being campanulate and white, on black, not scarlet.

Deceiving Gaylussacia. Shrub 1 to 1 ½ foot.

20 G. amena (Cham. in Linnaea. 8 p. 501.) branches, petals, and inflorescence downy; calyces glabrous, but are, as well as the bracteas, ciliated with glandular hairs; leaves on very short petioles, ending each in a callous mucron, searated in front, with reflexed margins covered with resinous dots beneath, having the veins and nerves prominent beneath; racemes nearly terminal, erect, elongated; calyceine segments ovate, acuminate; corolla campanulate, glabrous, filaments ciliated, half the length of the anthers; bracteas foliaceous. ½ G. Native of Brazil, within the tropic. Flowers white.

Var. a; leaves ovate-cuneated, rounded. Var. b; leaves narrower, blunt at the base, acute at the apex, oblong or lanceolate.

Pleasant Gaylussacia. Shrub 4 to 6 feet.

21 G. incana (Cham. in Linnaea. 1 p. 536.) clothed with hoary tomentum; leaves oblong, with revolute margins, quite entire; racemes axillary and terminal, approximate at the tops of the branches, secund, erect; corollas campanulate, downy. ½ G. Native of Brazil, within the tropic. Leaves cincinnus above, and white beneath. Calyceine teeth lanceolate. Corolla downy, as well as the filaments.

Hoary Gaylussacia. Shrub 1 foot.

Cult. For culture and propagation see Agarista, p. 538. All the species are extremely elegant when in blossom, and are therefore very desirable plants in every collection.


LIN. SYST. Decandria, Monogynia. Calyx urceolar; limb 5-lobed. Corolla tubular, coactate at the apex and 5-toothed. Stamens 10, inclosed; filaments very short, dilated; anthers 2-celled, shortly spurred at the base, drawn out into two tubes at the apex, near the mouth, opposite a linear sensory. Ovarium 5-celled. Style pentagonal. Stigma linear, peltate. Berry 5-celled; cells many-seeded. Seeds minute, angular, dotted.—Shrubs. Natives of Peru. Leaves evergreen, coriaceous, quite entire, nerves. Flowers drooping, bracteate, disposed in lateral corymbose racemes.

1 T. bracteata (Ruiz et Pav. fl. per. 4. t. 388. ined.) leaves ovate-lanceolate, acuminate, 5-nerved; bracteas large, permanent, coriaceous, 2-lobed; anthers spurred at the base. ½ S. Native of Peru. Branches angular, glabrous. Leaves rounded at the base, 2-3 inches long, petiolate. Flowers disposed in terminal thyrsoid coryms at the tops of the branches. Corollas scarlet, nearly an inch long. Bracteas imbricated. Filaments bearded at the apex.

Braecteata Thibaudia. Shrub.

2 T. mellifera (Ruiz et Pav. l. c. t. 387. f. b.) branches terete, downy; leaves oblong, obtuse, feather-nerved, acute at the base; flowers axillary, corymbose, bracteate; limb of calyx nearly entire; corolla short. ½ S. Native of Peru. Leaves 2-3 inches long, on short petioles, glabrous. Bracteas small. Peduncles downy. Limb of calyx essentially 5-lobed. Filaments glabrous.

Honey-bearing Thibaudia. Shrub.

3 T. punctatifolia (Ruiz et Pav. l. c. t. 387. f. a.) branches oblong-lanceolate, acuminate, 5-nerved, rounded at the base, dished beneath; calyx bluntly 5-lobed; racemes elongated, nodding; bracteas large, oblong, mucronate, adpressed; corollas ventricose; filaments glabrous. ½ S. Native of Peru. Leaves a hand long, glabrous. Petioles short, robust. Branchlets angular. Racemes a span long, many-flowered. Flowers drooping. Corolla ventricose, an inch long.

Dotted-leaved Thibaudia. Shrub.

4 T. coarctata (Ruiz et Pav. l. c. t. 385.) branches angular, glabrous, leaf-lanceolate, acuminate, 5-nerved, rounded at the base; flowers aggregate; bracteas 2-lobed, roundish, coriaceous; calyceine teeth acute; filaments glabrous. ½ S. Native of Peru. T. bicolor, Dunal. in herb. Lamb. Leaves 3-4 inches long, marked with white veins above. Flowers peduncu-
late, subcorysmbose, 5-10 together, drooping. Berries large. 
Corolla 1½ inch long.

Coarctate-flowered Thibaudia. Shrub.

1. T. caudalata (Ruiz et Pav. l. c. t. 386.) branchlets angular; leaves nearly sessile, cordate-oblong, obtuse, dentilicated; racemes few-flowered; bracteas lanceolate, acuminate; calyceine teeth short, acute; filaments glabrous. h. S. Native of Peru. Leaves 4 inches long, feather-nerved. Bracteae permanent, lanceolate, coriaceous. Corolla an inch long.

Wing-stemmed Thibaudia. Shrub.

2. T. elliptica (Ruiz et Pav. l. c. t. 384. f. b.) branchlets angular; leaves elliptic-oblong, with revolute margins; flowers aggregate; calyceine teeth acutish, very short. h. S. Native of Peru. Leaves 3 inches long, attenuated at the base, on short petioles, feather-nerved. Peduncles half an inch long.

Elliptic-leaved Thibaudia. Shrub.

3. T. emarginata (Ruiz et Pav. l. c. t. 384. f. a.) branchlets terete, glabrous; leaves ovateobovate, emarginate, briskly beneath; flowers solitary; calyx oblong-obovate, 5-toothed; corollas conical; filaments glabrous. h. S. Native of Peru. Leaves 1½ inch long, 3-nerved, acute at the base. Corolla ventricose, 3 lines long. Flowers pendulous. Peduncles glabrous.

Emarginate-leaved Thibaudia. Shrub.

4. T. floribunda (H. B. et Kunth, nov. gen. amer. 3. p. 269. t. 254.) branchlets terete, glabrous; leaves lanceolate, acuminate, reticulately veined, glabrous, as well as the inflorescence; racemes axillary, solitary; bracteas imbricated; filaments glabrous. h. S. Native of New Grenada, near Santa Fe de Bogota. Leaves 5 inches long. Calyceine teeth ovate, acute. Corolla ventricose, scarlet.

Bundle-flowered Thibaudia. Shrub.

5. T. longifolia (H. B. et Kunth, l. c.) branchlets pentagonal, glabrous; leaves long-lanceolate, acuminate, obtuse at the base, reticulately and quintuple-nerved, and are, as well as the calyces and corollas, glabrous. h. G. Native of the Andes, about Quindiu, near La Seja. Leaves 6-7 inches long. Racemes axillary, shorter than the leaves. Flowers size and structure of those of the preceding species.

Long-leaved Thibaudia. Shrub.

6. T. falcaria (H. B. et Kunth, l. c.) branchlets terete, glabrous, fuscous; leaves lanceolate, acuminate, falcate at the apex, acute at the base, reticulately and quintuple-nerved, and are, as well as the calyx and corollas, glabrous. h. S. Native of New Granada, near Almaguer. Leaves 8 inches long. Racemes axillary, solitary, shorter than the leaves.

Falcate-leaved Thibaudia. Shrub.

7. T. macrophylla (H. B. et Kunth, l. c. p. 270.) branchlets terete, glabrous; leaves ovate-lanceolate, acuminate, rounded at the base, reticulately quintuple-nerved, and are, as well as the calyx and corollas, glabrous. h. S. Native on the Andes, about Popayan, near Pindamon and Palace. Leaves on short petioles, 8-9 inches long. Racemes axillary, solitary, nearly sessile, 3 or 4 times shorter than the leaves. Corollas large, tubular, white, but red and ventricose below. Calyceine teeth short, acute.

Long-leaved Thibaudia. Shrub 10 feet.

8. T. repesstris (H. B. et Kunth, l. c. p. 270.) branchlets downy, striated a little; leaves lanceolate, blunish, acute at the base, reticulately veined, glabrous above and downy beneath, especially on the nerves; calyces glabrous. h. S. Native of New Granada, in Paramo de Saragura, near Loxa and Alto de Pulla. Leaves 3 inches long. Racemes axillary. Fruit nearly globose, about the size of those of Prunus spinosa.

Roeck Thibaudia. Shrub.

9. T. sitida (H. B. et Kunth, l. c. p. 271.) branchlets trigo-
nal, f glabrous, fuscous; leaves oblong, obtuse, rounded at the base, somewhat quintuple-nerved, shining, and are, as well as the calyces and corollas, glabrous. h. S. Native on the eastern declivities of the Andes, about Quindiu, between Quebrada de Tocheito and La Seja. Leaves on short petioles, 4 inches long, beset with minute dots beneath. Racemes axillary, solitary, almost sessile, 2 inches long, involucrated by large roundish-ovate, obtuse, concave, coloured bracteas at the base.

Shining-leaved Thibaudia. Shrub.

10. T. cordifolia (H. B. et Kunth, l. c. p. 271. t. 255.) branchlets furrowed, resinous, shining; leaves ovate, cordate, obtuse, quinquelobate or septuple-nerved, shining above, and are, as well as the calyces, glabrous; corollas downy. h. G. Native of New Granada, on the Andes. Bracteas oblong, obtuse, coloured, concave. Calyceine teeth ovate, acute. Corolla tubular, ventricose. Racemes axillary at the tops of the branches, sessile, hardly longer than the leaves. Filaments glabrous.

Heart-leaved Thibaudia. Shrub.

11. T. melastomoides (H. B. et Kunth, l. c. p. 275.) branchlets terete, smooth, brown, fuscous; leaves oblong, short-acuminated, rounded at the base, rather cordate, reticulately quinquelobate or septuple-nerved, and are, as well as the calyces and corollas, glabrous. h. G. Native along with the preceding. Leaves having minute scattered dots beneath, 3 inches long, and an inch broad. Racemes axillary, solitary, sessile, shorter than the leaves, covered with the imbricated bracteas before expansion. Bracteas oblong, concave, rounded at the apex.

Melastoma-like Thibaudia. Shrub.

12. T. strobulifera (H. B. et Kunth, l. c. p. 272.) branchlets downy, obsoletely angular; leaves oblong, acuminate, rounded at the base, reticulately triple or quintuple-nerved, and are, as well as the calyces and corollas, glabrous. h. G. Native of New Granada, in frigid places, between Rio Udchupa and Paramo de Saragura, near Loxa. Leaves beset with black dots beneath, reticulately 3-5-nerved, 2½ inches long. Racemes axillary, solitary, sessile, shorter than the leaves, strobiliform before expansion. Bracteas at the base of the pedicels, oblong, rounded and ciliated at top. Corolla tubular, ventricose at the base, red. Calyceine teeth short, ovate, acute. Filaments ciliated.

Strobil-bearing Thibaudia. Shrub.

13. T. scabriuscula (H. B. et Kunth, l. c. p. 273.) branchlets terete, roughish; branchlets angular, downy, fuscous; leaves oblong, acuminate, rounded and subcordate at the base, roughish from dots above, downy on the nerves beneath, and beset with minute black dots between the nerves; calyces, and corollas, downy. h. G. Native about Quindiu, on the Andes. Inflorescence like that of the preceding species.

Roughish Thibaudia. Shrub.

14. T. pursecula (H. B. et Kunth, l. c. p. 274. t. 256.) climbing: branchlets trigonal, hairy; leaves oblong, or oblong-elliptic, acuminate, rounded at the base, reticulately quintuple or septuple-nerved, glabrous above, but downy beneath, as well as the calyces and corollas. h. - S. Native near Caracas, on Mount Avila, between Puerta de la Silla and El P xual: also of New Granada, near Ibague and Boca del Monte. Branches red. Leaves 5 inches long and 2 broad. Racemes axillary, solitary, sessile, covered by the bracteas before expansion, 1 to 1½ inch long. Corolla white-red. Calyces with ovate-oblong, obtuse, spreading teeth. Filaments glabrous.

Downy Thibaudia. Shrub climbing.

15. T. quereime (H. B. et Kunth, l. c. p. 274. t. 256.) branchlets terete, glabrous, brown; leaves oval-elliptic, acumi-
nated, acute at the base, reticulately quintuple-nerved; branches, calyces, and corollas glabrous. \( \frac{\text{A.}}{\text{S.}} \) Native of South America, in the province of Choco, in one place near the town of Cali, towards Cerro de San Antonio, where it is called *Quereme de Cali*. Leaves 3 or 3\( \frac{1}{2} \) inches long. Pedicels trinervate at the base, red. Corollas tubular, ventricose at the base, red. Calyceous teeth ovate, acute, short. The flowers, bracteas, and wood, are very sweet scented when dried, and which scent is easily communicated to water, spirits, or wine. Spirits of wine saturated with this aroma smells like cloves, and is useful in mitigating tooth-ache.

*Quereme Thibaudia*. Shrub 5 to 6 feet.

20 T. *ARDISLEFOLIA* (H. B. et Kunth, l. c. p. 274.) branches terete, glabrous; leaves opposite, sessile, oblong, obtuse, subcordate, reticulately nerved, and are, as well as the branches, calyces, and corollas, glabrous. \( \frac{\text{A.}}{\text{S.}} \) Native of New Grenada, near Fusaguruga, in woody places. Leaves 3\( \frac{1}{2} \) inches long, with diaphanous edges. Racemes axillary, sessile, solitary, pendulous, girded by small imbricated bracteas at the base. Corollas cylindrically tubular, scarlet, with a white limb. Calyceous teeth ovate, acute, ciliated.

*Ardisia-leaved Thibaudia*. Tree 16 to 20 feet. Cult. For culture and propagation see *Agarista*, p. 838. Extremely elegant shrubs when in blossom.

**LVI. AGAPETES** (from ἀγαπέω, agapetos, beloved; in reference to the plants being showy). D. Don, mas. in herb. Lamb. Thibaudia species, Wall and Blume. Ceratos- tùma species, Roxb.


**§ 1. Corollas tubular.**

1 A. *setigera* (D. Don, in herb. Lin. soc.) leaves scattered, lanceolate, petiolate, acuminate, obtuse at the base; flowers disposed in racemose corymbs; peduncles and calyces hispid; filaments bearded; anthers bifid; segments of corolla ovate-oblong. \( \frac{\text{G.}}{\text{S.}} \) G. Native of the East Indies, on the Pundua mountains. Thibaudia setigera, Wall. cat. no. 755. Leaves about 4 inches long, on very short robust pedioles, absolutely denticulate. Flowers numerous, in lateral and terminal corymbose racemes, furnished with bristly hairs. Corolla about an inch long.

*Bristle-bearing Agapetes*. Shrub.

2 A. *VERTICILLATA* (D. Don, l. c.) leaves verticillate, lanceolate, acuminate, finely denticulate, acute at the base; flowers corymbose; peduncles and calyces hispid; corolla glabrous, with short blunt lobes; filaments nearly smooth; anthers bifid. \( \frac{\text{G.}}{\text{S.}} \) G. Native of the East Indies, on the Pundua mountains. Thibaudia verticillata, Wall. cat. no. 755. Leaves on very short pedioles, disposed in interrupted verticillate fascicles. Corolla scarcely an inch long. Stigma almost simple.

*Whorled-leaved Agapetes*. Shrub.

3 A. *LORANTHIFLORA* (D. Don, l. c.) leaves sessile, lanceolate, bluntly acuminate, quite entire; flowers generally solitary; segments of the corolla elongated; anthers emarginate at the apex; filaments and corollas smooth. \( \frac{\text{G.}}{\text{S.}} \) G. Native of the East Indies. Thibaudia lorianthiflora, Wall. cat. no. 754. Leaves 3 inches long, cuneate-lanceolate. Calyx with ovate acute teeth, and is, as well as the peduncles, rather bristly. Segments of corolla ovate at the base.

*Loranthus-flowered Agapetes*. Shrub.

4 A. *VARIGATA* (D. Don, l. c.) leaves on short petioles, lanceolate, acuminate, denticulate, attenuated at the base, veiny; flowers lateral, coriaceous; segments of corolla lanceolate, revolute; filaments bearded; anthers bifid. \( \frac{\text{G.}}{\text{S.}} \) G. Native of the East Indies, on the Pundua mountains. Thibaudia variegata, Wall. cat. no. 751. Leaves 6 inches long. Peduncles and calyces glabrous. Corolla glabrous, an inch long.

*Variegated Agapetes*. Shrub.

**§ 2. Corollas short, ovate.**

5 A. *ACUMINATA* (D. Don, l. c.) leaves petiolate, lanceolate, long-acuminate, toothed; flowers copious, coriaceous, lateral. \( \frac{\text{G.}}{\text{S.}} \) G. Native of Silhet. Thibaudia acuminata, Wall. cat. no. 6297. Leaves a span long. Calyceous segments ovate, mucronate. Calyx and peduncles finely downy.

*Acuminated-leaved Agapetes*. Shrub.

6 A. *SPRENGELII*; leaves petiolate, ovate-lanceolate, acuminate, denticulate, attenuated at the base, woolly; flowers racemose, glabrous; peduncles glabrous; calyceous segments ovate, denticulate; filaments downy; anthers bifid. \( \frac{\text{G.}}{\text{S.}} \) G. Native of the East Indies. Thibaudia Sprengelii, Wall. cat. no. 6298. Leaves 3 inches long. Flowers drooping, from 5 to 7 in a cluster. Corolla ovate-oblong, about 2 lines long.

*Sprengel's Agapetes*. Shrub.

7 A. *SERRATA*; leaves verticillate, petiolate, lanceolate, acuminate, serrate, attenuated at the base; flowers racemose, pendulous, and are, as well as the filaments, glabrous; branchlets chaffy. \( \frac{\text{G.}}{\text{S.}} \) G. Native of the East Indies. Thibaudia serrata, Wall. cat. no. 6299. Leaves 2 inches long, on very short foot stalks. Calyceous teeth very short, mucronate. Corolla ovate-oblong, 2 lines long.

*Serrated-leaved Agapetes*. Shrub.

8 A. *SYMPLOCOSIFOLIA* (D. Don, l. c.) branchlets downy; leaves ovate, mucronate, serrated; flowers and calyces downy; calyx-cine segments rounded, mucronulate; filaments bearded. \( \frac{\text{G.}}{\text{S.}} \) G. Native of Java, on Mount Salak, upon trees. Thibaudia symplocosifolia, Blum. bijd. p. 659.

*Symplocos-leaved Agapetes*. Shrub.

9 A. *ELLIPITICA*; stem parasitical; leaves elliptic-oblong, acutish at both ends, biglandular at the base, coriaceous, veiny, glabrous; racemes secund, finely tomentose. \( \frac{\text{G.}}{\text{S.}} \) G. Native of Java, on the tops of the mountains, where it is called *Prut* by the natives. Thibaudia floribunda, Blum. bijd. l. c.

*Bundle-flowered Agapetes*. Shrub.

10 A. *FLORIBUNDA*; leaves elliptic-oblong, acuminate at both ends, coriaceous, glabrous, veiny; calyces ciliated. \( \frac{\text{G.}}{\text{S.}} \) G. Native of Java, on the top of Mount Burangrang, upon trees. Thibaudia laurifolia, Blum. l. c.

*Laurel-leaved Agapetes*. Shrub parasitical.

11 A. *LORANTHIFLORA*; leaves oblong-lanceolate, acutish coriaceous, glabrous, nearly veinless; racemes leafy, and are, as
well as the calyces, downy. \( \varphi \). G. Native of Java, on Mount Gede, where it is called by the natives Jatro-petel. Thibaedium variegatifolia, Blum. bijdr. p. 860.

*Varingia-leaved Agapetes*. Fl. Year. Shrub.

13 A. *lucida*; stem sometimes parasitical; leaves small, obovate, rather retuse, with recurved margins, coriaceous, glabrous, a little veined; racemes, calyces, and corollas downy. \( \varphi \). G. Native of Java, in the higher waters. Thibaedium lucida, Blum. l. c.

*Shining Agapetes*. Fl. Year. Shrub parasitical.

14 A. *coriacea*; stem parasitical; leaves elliptic or oblong-lanceolate, much acuminate, coriaceous, somewhat 3-nerved, and are, as well as the racemes, calyces, and corollas, glabrous. \( \varphi \). G. Native of Java, on the mountains, upon trees, where it is called *Kiligday* by the natives. Thibaedium coriacea, Blum. l. c.

*Coriaceous-leaved Agapetes*. Shrub parasitical.

15 A. *cuneifolia*; leaves cuneiform, obtuse, sometimes retuse, with recurved margins, coriaceous, nearly veinless, and are, as well as the racemes and calyces, glabrous. \( \varphi \). G. Native of Java, on the higher mountains, in woods. Thibaedium cuneifolia, Blum. bijdr. p. 861.

*Wedge-leaved Agapetes*. Fl. Year. Shrub.

16 A. *myrtoides*; branches downy; leaves ovate-elliptic, bluntish, with recurved margins, coriaceous, nearly veinless, downy on both surfaces at the midrib; racemes glabrous. \( \varphi \). S. Native of the Moluccas, on the tops of the burning mountains. Thibaedium myrtoidea, Blum. bijdr. 861.

*Myrtle-like Agapetes*. Shrub.

Cult. For cultivation and propagation see *Agarista*, p. 388.

LVII. CERATOSTEMA (from *keras*, kera, a horn, and *στεμόν*, stemon, a stamen; in reference to the anthers being bluntly spurred at the base). Juss. gen. p. 163. Ruiz et Pav. fl. per et Chil. vol. 4. ined.

Lin. syst. Decandria Monogynia. Limb of calyx large, 5-parted, foliaceous. Corolla tubular, coarctate at the apex, 5-lobed. Stamens 12; filaments very short. Anthers bluntly spurred at the base; cells elongated at the apex, filiform, almost wholly free, dehiscing by a terminal pore each. Stigma simple, obtuse. Berry 5-celled, many-seeded. Seeds small, angular.—Evergreen shrubs, natives of Peru. Leaves oblong, on short petioles, almost veinless, coriaceous, rounded and subcordate at the base. Flowers almost sessile, lateral and terminal, pedunculate. Corollas large, scarlet.

1 C. *grandiflora* (Ruiz et Pav. fl. per. 4, t. 383. f. b.) branches and peduncles downy; leaves lanceolate or ovate, usually mucronate; calyce segments acuminate; corollas longer than the peduncles. \( \varphi \). G. Native of Peru. Leaves an inch or an inch and a half long, obtuse. *Great-flowered Ceratostema*. Shrub.

2 C. *hirsuta* (Ruiz et Pav. fl. per. 4, t. 383. f. a. ined.) branches and peduncles downy; leaves ovate-oblong, obtuse; calyce segments ovate, mucronate, reticulated; corollas about equal in length to the peduncles. \( \varphi \). G. Native of Peru. C. cordifolia, Dunal, in herb. Lamb. Leaves 1/2 inch long.

*Hairy Ceratostema*. Shrub.

Cult. See *Agarista*, p. 388, for culture and propagation.—Elegant shrubs, worth cultivating in every collection.

**Tribe IV.**


Lin. syst. Decandria Monogynia. Calyx 5-parted. Petals 5. Stamens 10. Anthers dehiscing at the base by 2 holes. Stigma 5-lobed. Capsule 5-celled; valves connected by fine intricate tomentum. Placentas lunate, with simple lobes. Cells many-seeded. Seeds narrow, scobiform, winged at both ends. Embryo transverse. Humble evergreen herbs with wide creeping roots. Leaves petiolate, alternate, smooth, and usually shining, coriaceous, crenulated, toothed or serrated. Scapes erect, furnished with a few scales, usually tripetrous or quadrangular, convolute. Flowers pedicellate, bracteate, pendulous, globose or campanulate, white or red, disposed in terminal racemes. All the *Pyrolæ* are possessed of strong astringent qualities, and were formerly much esteemed for supposed healing properties; they are now wholly disused.

§ 1. Stamens ascending. Style decinate, longer than the petals; stigma annular. Scapes erect. Flowers campanulate, pendulous, racemose, scattered, rarely somewhat secund.

1 P. *rotundifolia* (Lin. spec. 567.) leaves roundish, quite entire or crenulated, shorter than the dilated petioles; scape triquetrous; calyce segments lanceolate, acute; stigma clavate, bluntly 5-toothed. \( \varphi \). H. Native of Asia, Europe, and North America, in old woods, in stony or sandy soil. In Britain, in dry heathy woods, but rare; in the north of England and Highlands of Scotland. Smith, engl. bot. 213. exclusive of the syn. of fl. dan. Lam. ill. t. 367. f. 1. P. grandiflora, Blum. dis. p. 27. t. 3. f. 2.—Riv. mon. t. 137. and 136. f. 2.—Mor. ex. sect. 12. t. 10. f. 1. Leaves numerous. Scapes furnished with 2-3 lanceolate-acute scales. Racemes 10-16-flowered. Pedicels secund, rather remote, scattered. Flowers rather large, milk-white.


2 P. *asarifolia* (Michx. fl. bor. amer. 1. p. 251.) leaves reuniform, coriaceous, repandly crenated, twice shorter than the dilated petioles; scapes acutely triquetrous; racemes many-flowered; calyce segments ovate, acuminate, adpressed; stigma clavate, with an elongated 5-lobed disk. \( \varphi \). H. Native of Canada, in pine woods; and on the mountains of Pennsylvania, in beech woods. Leaves numerous. Scapes furnished with a few scarious convolute scales. Racemes elongated. Pedicels remote, scattered. Flowers greenish-white or yellowish-green, about the size of those of the preceding.


3 P. *chloranthra* (Swartz, in Stockh. trans. 1810. t. 5. Nutt. gen. amer. 1. p. 273.) leaves orbicular, retuse, obsolescently crenulated, twice shorter than the narrow petioles; raceme few-flowered; calyce segments very short, obtuse; petioles oblong; openings of anthers tubular; stigma clavate, with an elongated 5-lobed disk. \( \varphi \). H. Native of Sweden and Upper Canada. Lodd. bot. cab. 1542. P. convoluta, Bart. prod. fl. phil. p. 50. P. asarifolia, Rad. diss. p. 23. t. 4. f. 1. exclusive of the synonyme of Michaux. P. rotundifolia, \( \beta \), nummulária, Muhl. cat. P. minor, Pursh. mss. and perhaps of fl. amer. sept. 1. p. 299. Scapes tetragonal, furnished only with one minute scale in the middle. Pedicels curved, scattered. Flowers cam-
panulate, about the size of those of *P. elliptica*, greenish-white, pendulous.


4 P. occidentalis (R. Br. mss. in herb. Banks, ex D. Don, in wern. mem. 5. p. 232.) leaves roundish, membranous, obsoletly denticulate, twice longer than the simple petals; racemes few-flowered; calycine segments oblong, ob- 
tuse; disk of stigma 5-lobed. 2. H. Native of Sledge Island, 
the north-west coast of America, where it was collected 
by D. Nelson. Leaves numerous, one-half smaller than those 
of *P. minor*. Scapes triquetrous. Pedicels equal in length to 
the bracteas. Flowers globose, pendulous, milk-coloured, size of 
those of *P. rotundifolia*.

**Western Winter-green.** Pl. 1/2 foot.

5 P. elliptica (Nutt. gen. amer. 1. p. 273.) leaves elliptic or 
ovate, membranous, serrulate, longer than the dilated petals; 
racemes few-flowered; bracteas lanceolate, subulate, recurved at 
top; calycine segments very short, ending each in a recurved 
mucron; petals oval; stigma clavate, with an elevated 5-lobed 
disk. 2. H. Native of both Canadas, in woods; and around 
Philadelphia; and in the woods of New Jersey. Rad. diss. p. 
51. t. 5. f. 1. P. ovalifolia, Radd., mss. in herb. Lamb. 
Scapes acutely triquetrous, furnished with a solitary scarious 
node near the base. Pedicels scattered, distant. Flowers campanulate, 
white, with a grateful smell, smaller than those of *P. 
rotundifolia*.

Pl. 1/2 foot.

6 P. dentata (Smith in Rees’ cycl. D. Don in wern. mem. 
5. p. 235.) leaves cuneate-oblong, coriaceous, acute at the base, 
twice as much longer than the narrow petals, having the margin 
remotely toothed or quite entire; racemes elongated, few-flowered, 
rather secur; petals oval; disk of stigma elongated, 5- 
lobed. 2. H. Native of the Island of Nootka, on the north-west 
coast of America, where it was collected by Mr. Menzies. 
Leaves crowded. Scapes angular, naked. Racemes drooping 
at the apex, secur. Flowers campanulate, drooping, milk-
white.

**Toothed-leaved Winter-green.** Pl. 1 foot.

7 P. victa (Smith in Rees, cycl. D. Don in wern. mem. 
5. p. 235.) leaves ovate, mucronulate, coriaceous, somewhat 
serrate, equal to the narrow petals in length, red beneath, but 
dark green, and marked along the veins with whitish bands 
above; racemes many-flowered; petals roundish; stigma clavate, 
with a 5-lobed disk. 2. H. Native of the Island of 
Nootka, on the north-west coast of America; and of Japan, 
the town of Nagasaki. Scapes acutely triquetrous, 
reddish, never convolute, furnished with scarious scales. 
Pedicels scattered. Flowers globose, campanulate, pendulous, 
white.

**Painted-leaved Winter-green.** Pl. 1/2 foot.

8 P. phylla (Smith in Rees’ cycl. D. Don in wern. mem. 
5. p. 237.) leafless; scape angular, furnished with scarious 
seals at the base; racemes many-flowered, rather secur; 
calycine segments ovate, acute, mucronulate; petals roundish; 
disk of stigma elongated, 5-crenated. 2. H. Native of 
Nootka Island, on the north-west coast of America, where it 
was collected by Mr. Menzies. Scapes numerous. Flowers 
globe, pendulous, milk-white. This remarkable species, 
though wholly destitute of leaves, is not, strictly speaking, leave-
less; their place is supplied by a kind of foliaceous scales, of 
a greenish colour. In some of the fine specimens preserved in 
the Banksian herbarium, an approach to leaves may be distinctly 
observed.

**Leafless Winter-green.** Pl. 1/2 foot.

§ 2. Stamens erect, bent towards the pistillum. Style de-
cline, longer than the petals. Stigmas without a ring. Scapes 
erect. Flowers racemose, globose, pendulous, scattered, never 
secur.

9 P. meadia (Swartz, in act. holm. 1804. p. 257. t. 7. Smith. 
engl. bot. t. 1945.) leaves orbicular or roundish-oval, crenu-
lated, coriaceous, equal in length to the dilated petals; scapes 
spiral, acutely triquetrous; racemes many-flowered; calycine 
segments ovate, acute; stigma capitate, bluntly 5-lobed. 2. H. 
Native of Sweden, Scotland, and the north of England, 
among bushes and in woods; very common in Scotland, espe-
cially in mountainous districts. Rad. diss. p. 21. t. 3. P. 
rotundifolia, Fl. dan. t. 110.—Blackw. 594. Huds. angl. 
mon. 138. Leaves numerous. Pedicels scattered. Flowers 
pendulous, white tinged with red, much larger than those of 
*P. minor*.

**Intermediate Winter-green.** Fl. June, July. Britain. Pl. 1 
foot.

§ 3. Stamens erect. Style straight; stigma exanuated, 
or without a ring. Scapes erect. Flowers pendulous, racem-
ose.

10 P. minor (Lin. spec. 567.) leaves roundish or oval, coria-
ceous, repandly crenulate, longer than the petals, which are 
dilated; racemes spicate; bracteas much longer than the peti-
dels; calycine segments very short; style included; stigma flat-
shish, 5-lobed. 2. H. Native of the colder parts of Europe, 
and the north of Asia, on heaths, in bushy places, and in woods; 
in Britain, in mossy woods and thickets, in mountainous 
situations; in Yorkshire, and very common in many parts of 
Durham; woods near Brodie House, and at the Falls of Clyde, and 
many other places of Scotland. Fl. dan. t. 55. Smith,engl. bot. 
—Gmel. sib. 4. p. 128. no. 16. t. 56. f. 1.—Riv. mon. 
t. 136. f. 1. Leaves numerous, mucronulate at the apex. 
Scapes quadrangular, furnished with a lanceolate membranous 
scale in the middle. Racemes spicate, dense. Flowers glo-
bose, with a contracted mouth, white tinged with red. A 
variety of this species has been gathered in the Island of 
Unaschka.

**Smaller Winter-green.** Fl. June, July. Britain. Pl. 1/2 
to 1/3 foot.

11 P. secunda (Lin. spec. 567.) leaves ovate, acute, membranous, sharply serrated, longer than the narrow petals; racem 
secur or unilater; calycine segments round; petals oblong; style exerted; stigma flathish, 5-lobed. 2. H. Native 
of Europe, Asia; and North America, from Canada to New 
Jersey; among bushes and in alpine woods, particularly in 
dry, mossy, pine woods; in Britain, in mossy alpine 
winds; in Yorkshire; in many fir or birch woods in Scot-
land; on the hill of Dunnair; in Darway forest, near Brodie 
House. Fl. dan. t. 402. Smith, engl. bot. t. 517.—Gmel. 
sib. 4. p. 129. t. 56. f. 2. Riv. mon. t. 138. f. 2.—Mor. 
hist. 1. sect. 12. t. 10. f. 4. Stems rather woody. Leaves 
mucronulate. Pedicels bluntly angular. Racemes elongated, 
much-flowered. Flowers campanulate, white, tinged with pale 
green.

**Second-flowered Winter-green.** Fl. June, July. Britain. 
Pl. 1/2 to 1/3 foot.
Cult. All the species of Winter-green are very pretty when in blossom, but are extremely difficult to cultivate in gardens. They grow best in a sandy or gravelly soil, in a shady situation. They should be mulched with moss, and a hand-glass placed over them. They may be increased by division.

LIX. CHIMAPHILA (from χίμα, cheima, winter, and φιλειν, philo, to love; the plants are green in winter). Pursh, fl. amer. sept. 1. p. 300. Nutt. gen. amer. 1. p. 274.—Chimázza, R. Br. in herb. Banks—Pyrola species, Lin. and others.


1 C. corymbosa (Pursh. fl. amer. sept. 1. p. 300.) leaves cuneate-lanceolate, serrated, 4-5 in a whorl; peduncles pubescent, bearing a 5-6-flowered corymb at top; bracteas linear-subulate; appendages of filaments ciliated; style immersed. H. Native of Europe, Asia, and North America, from Canada to Carolina, in sandy and gravelly woods. Pyrola umbellata, Lin. spec. 468. Sims, bot. mag. 7781. Chimázza umbellata, R. Br. in herb. Banks.—Riv. p. 139, t. 2.—Mor. hist. 3. sect. 12. t. 10. f. 5. Root creeping. Plant evergreen, frutescent. Leaves green on both surfaces, acutely and distantly serrated from the middle to the apex. Flowers corymbose, pendulous, at length erectish, greenish-white, tinged with red. Anthers purplish.


Pl. 4 to 1/4 foot.

2 C. maculata (Pursh. fl. amer. sept. 1. p. 300.) leaves lanceolate, acute, with white bands on the upper surface along the nerve and veins, opposite, or 4 in a whorl; peduncles downy, bearing a 2-3-flowered corymb at the apex; bracteoles linear; appendages of filaments woolly; style very short. H. Native of North America, from Canada to Carolina, in sandy or gravelly woods; also on the north-west coast. Pyrola maculata, Lin. spec. 568. Sims, bot. mag. 897. Chimázza maculata, R. Br. in herb. Banks.—Pluk. mant. 157. t. 349. f. 4. Plant suffrutescent, evergreen. Root creeping. Stem procumbent at base and ascending at apex. Lower surface of leaves red. Pedicels and calyces red, clothed with clammy down. Flowers pendulous, white. Anthers yellow. This plant is in high esteem for its medicinal qualities among the Indians; they call it syp-i-seva. Mr. Pursh tells us, that he has witnessed the beneficial effects of a decoction of this plant in a very severe case of hystericis; and he says it is a plant eminently deserving the attention of physicians. We are also informed that its decoction has proved very serviceable in scrofulous diseases.

Spotted-leaved Winter-green. Fl. June. CIt. 1752. Pl. dec. 3 to 4 inches long.

3 C. Mënzieisi (Spreng. syst. 2. p. 317.) leaves alternate, or 3 in a whorl, lanceolate, acuminate, serrated, discoloured; peduncles 2-flowered, glabrous; bracteas broad-roundish; calyces segments elliptic, acute; style distinct. H. Native of the north-west coast of America, where it was collected by Mr. Menzies. Pyrola Menziesii, R. Br. in herb. Banks ex D. Don, in wern. mem. 5. p. 245. Plant suffrutescent, evergreen. Root creeping. Stems ascending, red. Pedicels glabrous. Flowers pendulous, white. Leaves deep green above and red beneath. This species has a striking resemblance to P. maculata.

Menzies' Winter-green. Plant ascending, 2 to 3 inches long.

Cult. See Pyrola, for culture and propagation, above.

LX. MÔNÊSEs (from µονος, monos, alone; flowers solitary on the tops of the scapes). Sal. mss. in Gray, brit. arrang. 2. p. 403. Pyrola uniflora, of authors.


1 M. grandiflora (Sal. mss. in Gray, brit. arrang. 2. p. 403.) flowers solitary, at the top of the scape; cells of anthers elongated and tubular; stigma acutely 5-toothed; leaves orbicular, serrated. H. Native of Europe, Asia, and North America, in alpine mossy woods; in Britain, in alpine woods and by the sides of trickling rills; in the western islands of Harris and Boreras; in a fir wood near Brodie House, by Forres. Pyrola uniflora, Lin. spec. 568. Fl. dan. t. 8. Smith, engl. bot. t. 146.—Moris. hist. 3. p. 505. sect. 12. t. 10. f. 2.—Riv. mon. t. 139. f. 1. Leaves 3, rarely 4 in a whorl, longer than the dilated pedicels. Scape furnished with an ovate scale above the middle. Flowers large, solitary, drooping, white, very sweet-scented. Stamens recumbent.


LXI. CLADOTHÁMUS (from κλάδος, klados, a branch, and θάμνος, thánmos, a shrub). Bongard, in mem. acad. petersb. 2. p. 155. t. 1.—Pyrola fruticosa, Eschol. mss.

Margins of the valves septif erous. Placenta 5-lobe d; lobes roundish. Seeds numerous, small, involved in membraneous aril.—A much branched shrub. Leaves sessile, entire, elliptic or oblong, glabrous, but when young finely cili ated, glaucescent beneath, 1/2 inch long and 5 lines broad. Flowers axillary, solitary.

1 C. pyroliflorus (Bongard, l. c.). H. Native of the north-west coast of America, and of the Island of Sitka.

Pyrola-flowered Cladothamnus. Shrub 4 to 6 feet.

Cult. For culture and propagation see Azalea, p. 851.

Tribe V.


—Leafless parasitical herb.

LXII. HYPOPTYS (from ἵπος, ὕπο, under ; and πτείς, πτής, a pine-tree; the species are parasitical on the roots of pine-trees). Dill. gen. 7. Nutt. gen. amer. 1. p. 270.—Monotropa species, Lin. and others.—Orobanchoides, Tourn. mem. acad. 176.

L. syst. Decándria, Monogynia. Calyx 3 to 5-parted. Corolla permanent, so deeply 4-5-cleft as to appear 4-5 petals; each segment with a cucullate nectariferous base. Stamens 8-10. Anthers small, horizontal, with 2 obtuse horns at their base, at length opening flat. Stigma orbicular, with a bearded margin. Capsule 5-celled, 5-valved. Seeds very numerous, minute, girded by a narrow wing or membrane. —Parasitical upon the roots of trees destitute of proper leaves and verdure. Roots composed of dense imbricating scales. Stems or scales aggregate, simple, furnished with alternate scales. Flowers racemose, pedicellate. Raceme bent at first, but at length erect.—Scent of the whole plant musky.—Habit of Orobanchae.

1 H. Europaea (Nutt. gen. amer. 1. p. 271.) scape spike-flowered; scales and flowers glabrous outside; lateral flowers octandrous. Z. H. Native of many parts of Europe, as Sweden, Denmark, France, Italy, Britain, &c., in woods, where the ground is covered with rotten leaves, at the roots of fir, beech, and oak. In North America, from Canada to Pennsylvania, at the roots of beech and other trees, in shady moist places. With us, in Oxfordshire, in Stoken Church woods, and between Nettle-bed and Henley, Bedfordshire, Buckinghamshire, Berkshire, frequent; Maidstone in Kent; Tring in Hertfordshire; in the beech woods of Sussex; in Selbourne-Hanger, Hampshire; Riley in Gloucestershire; Enville in Staffordshire; Shottesbome and Stoke in Norfolk; in Scotland, but not common. Monotropa Hypopitys, Lin. spec. 555. Smith, engl. bot. t. 69. Fl. dan. t. 232. Hipopitys multiflora, Seop. carp. no. 178. Dill. gies. 99. append. 154. t. 7.—Menz. pug. 3. f. 5.—Pluk. phyt. t. 290. f. 5.—Mor. hist. 3. sect. 12. t. 16. f. 20. The whole plant has a pale yellow or brownish yellow appearance; the American one is much smaller than the European one. In Sweden it is given dry to sheep that are affected with cough.


2 H. hypophysea; race me few-flowered; petals glabrous, jagged, about equal in length to the style, which is quite glabrous. Z. H. Native of Europe, in beech woods. Monotropa hypophysa, Wallr. sched. Monotropa hypophysea, Spreng. syst. 2. p. 517.

Beech Yellow Bird's-nest. Pl. 1/2 foot.

3 H. lanuginosa (Nutt. gen. amer. 1. p. 271.) scape spike-flowered; bracteas and flowers woolly. Z. H. Native of North America, from Pennsylvania to Carolina, in similar places to the preceding. Monotropa lanuginosa, Michx. fl. bor. amer. 2. p. 266. The whole plant is of a light tan colour, downy in every part. Segments of calyx inconstant in number.

Woolly Yellow Bird's-nest. Pl. 1/4 foot.

Cult. The species are not cultivatable.

LXIII. MONOTROPA (from μονος, monos, one; and τροπος, tropeo, to turn; flowers turned one way). Nutt. gen. amer. 271.—Monotropa species, Lin. gen. no. 536. Juss. gen. 430.

L. syst. Decándria Monogynia. Calyx none. Corolla permanent, so deeply 5-parted as to appear 5-petalled; each segment with a cucullate nectariferous base. Stamens 10; anthers reniform, horizontal, with 2 obtuse horns at their base, emitting the pollen near the middle by 2 transverse chinks. Stigma orbicular, naked. Capsule 5-celled, 5-valved. Seeds numerous, minute, surrounded by a wing.—Parasitical plants, mostly upon the roots of trees, destitute of proper leaves and verdure. Root roundish, composed of an agglomeration of intricate succulent fibres, producing many 1-flowered scaly scapes or stems. Flowers at first nutant. Plants white and smooth, destitute of the musky odour of Hypopitys, but having a nauseous liliaceous scent when bruised. Habit of Orobanchae.

1 M. morisoniana (Michx. fl. bor. amer. 1. p. 266.) scapes elongated, very straight, 1-flowered, furnished with distant scales; flower erect. Z. H. Native of Virginia and Carolina, in shady woods, parasitical on the roots of trees.—Mor. hist. 3. sect. 12. t. 16. f. 5. Flowers larger than in the following species, frequently with 12 stamens.


2 M. uniflora (Lin. spec. 555.) scapes short, thick, 1-flowered, furnished with approximate scales; flowers drooping. Z. H. Native from New York to Carolina, parasitical on the roots of trees, in shady moist places. Hook. exot. fl. t. 85. —Pluk. alm. t. 209. f. 2. Catesb. car. 1. t. 36.


Cult. The species are not cultivatable.

LXIV. PTEROSPORÀ (from πτερος, pteron, a wing, and σπόρα, spora, a seed; the seeds are surrounded by a membranous margin or wing). Nutt. gen. amer. 1. p. 269. Lindl. coll. with a figure.

L. syst. Decándria, Monogynia. Calyx 5-parted. Corolla ovate, with a 5-toothed reflexed border. Stamens 10. Anthers excentrically petlate, 2-celled, adnate to the filaments by the margin, bisetose at the base. Capsule 5-celled, imperfectly 5-valved; dissepiments and valves united towards the base, and joined with the central axis. Placenta 5-lobed. Seeds very numerous and minute, each furnished with a terminal wing.—An evanescent annual plant, destitute of verdure, with the habit of Monotropa, to which it is nearly allied. Leaves none. Stem simple, racemose. Flowers numerous, scattered, reddish, resembling those of some species of Andrómeda. Peduncles rather long, 1-flowered, drooping.

1 P. Andrómeda (Nutt. gen. amer. 1. p. 27.) O. H. Native of Upper Canada, near the Falls of Niagara, in clay soils; banks of Seneca lake; and near Albany, in the state of New
York. Plant covered with brownish viscid hairs. Stems brownish red or purple, furnished with lanceolate scales at the base. Peduncles filiform, mutant. Corollas white, with a red border.

*Andromeda*-flowered Pterospora. Fl. July. Pl. 1 to 2 feet.

*Cult.* The plant is not cultivatable.


S. Carolina'na (Ell. fl. car. vol. 2.) O. H. Native of North Carolina, in rich shady woods. Flowers sweet-scented, reddish-white.


*Cult.* The plant is not cultivatable.

END OF VOL. III.