1.

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By William Youatt, V.S.

Enlarged and Re-written by Samuel Sidney.

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NEW YORK: 416, BROOME STREET.
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I have only to add, that if those who remark errors or omissions will kindly communicate with the Editor, care will be taken to embody and acknowledge by name their contributions in the next edition.

S. S.

Central Farmers' Club, Blackfriars,
London, September, 1857.
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CHAPTER I.

THE HOG TRIBE.—GENERAL OBSERVATIONS.

From among the cloven-footed or many-toed animals of the pachydermatous order of mammalia,* man has subjugated and reclaimed only two; viz., the hog and the elephant. With respect to the latter, the subjugation applies only to individuals, not to a race; for, strange to say, the elephant reclaimed and in captivity does not breed—at least as a general rule; hence it is from the wild herds that man recruits his stock; and the obedient beasts which obey the voice of their keeper, labour at his bidding, or astonish an audience by the precision with which they act their rôle in the melodrama, have been captured in their native forests, tamed, and educated. In this point of view the elephant stands alone. All our other domesticated quadrupeds—the horse, the ass, the hog, the ox, the dog, the camel, the sheep, the goat, the cat—are the descendants of a long line of ancestry in a state of servitude. Of many of these (at so remote a period has their subjugation been effected, and so much has cultivation, carried on age after age, altered their original characters) the wild type, if it be yet extant, cannot be possibly recognized. From no such line of hereditary bond-slaves does the domestic elephant proceed. Each individual is, in truth, a captive—it was

* The horse and ass are solidungulous Pachydermata.
born free: when it perishes, its place must be supplied by another captive. So much with regard to the elephant.* We need not say that the domestic hog, unlike the elephant, forms no exception to the general rule. It is the descendant of a race long since subjugated; yet one thing is remarkable, in all past ages and at the present day—while a race of domesticated swine has been and is kept under surveillance, the wild type whence this race sprung has maintained itself in its native freedom, the fierce denizen of the forest, and one of the renowned beasts of "venerie." Whatever doubts may exist as to the true origin of the dog, the horse, the ox, and others, or as to whether their origin is yet extant or not, these doubts do not apply to the domestic hog; its wild source still exists, and is universally recognized: like the wolf, however, it has been expelled from our island; but, like the wolf, it roams through the vast wooded tracts of Europe and Asia. Whether the true wild horse exists in the deserts of Central Asia, is yet a doubt, although we think it does. The fleet wild ass, or onager, is most probably the origin of our despised domestic beast; the paseng or ægagre of the mountains of Central Asia is generally regarded as the wild type of the goat; the wild buffalos still exists in India; the wild origins of the ox and the sheep, the dog, and the cat, are obscure or unknown; the llama of the Andes is the tamed guanaco, but of its Asiatic ally, the camel, no wild type has been discovered; the wild hog is undoubtedly the parent of our domestic breed; of the elephant we need not speak—we have already demonstrated its real position. Such, then, is a summary view of our ordinary domestic quadrupeds, valued for their respective qualities and uses, as far at least as their wild types are

* All our ordinary domestic birds—as the fowl, the goose, the duck, the pigeon, &c.—are the descendants of a reclaimed stock; even so is the canary bird; but the eagles, falcons, and hawks, which the falconer employs, are all trained captives, and breed not in confinement.
concerned. Nevertheless, among those even whose origin is accredited (the llama perhaps excepted), not one affords such certain claims of primeval parentage from a wild stock still extant as the hog. But, what is more, while the supposed or real wild stocks of all others of our domestic quadrupeds have their present localities or geographical boundaries very limited, the wild stock of the hog is most extensively spread throughout Europe and Asia, and has been known, described, and celebrated from the earliest ages, alike by sacred and classical writers; it is the *sus scrofa* of Linnaeus, the *sus aper* of Brisson. Let us here proceed to notice the outstanding characters common to the hog tribe in general.

The *suidae* are robust and massive in their form, low on the limbs, flat-sided, with immense muscular development in the neck and fore-quarters. The head is wedge-shaped, with an elongated snout, terminating in a round or oval disc of cartilage, called in common language the button. This disc is pierced by the nostrils, and possesses great power of mobility, being supplied by several strong muscles; it is, moreover, strengthened and supported by a small extra bone, as in the instance of the mole also, and is used with great facility as an instrument for ploughing up the ground in quest of roots for food. The lower jaw is deep and strong, and the symphysis of the chin is completely ossified, and not, as in ruminants, united by suture. The mouth is wide, opening to a degree almost unparalleled among terrestrial mammalia. The jaws are armed with tusks, which grow to a large size, pass from between the lips, and are weapons of tremendous effect; the tusks of the lower jaw advance before those of the upper, which turn obliquely upwards and outwards. In the peccaries the tusks are but little developed; in the male babirussa those of the upper jaw pierce through the skin of the snout, and are greatly elongated. The eyes are small, but quick and shrewd in expression; the ears are moderate, erect, and pointed. The tongue is elongated and smooth. The tail is short,
slender, and apparently of little utility. The senses of smell, sight, and taste are in high perfection, more especially that of smell, and the olfactory nerves are large. The sense of hearing is acute. In their diet the *suidæ* are omnivorous, vegetable and animal substances being equally acceptable; still it is on vegetable aliment that they chiefly feed. The skin is coarse, covered with bristles, and destitute, or nearly so, of the subcutaneous muscular expansion, common to most other animals, termed the *panniculus carnosus*, and so highly developed in the hedgehog. On looking at the skull, we find its base or occipital portion forming a right angle with the obliquely-rising upper surface, and a bold transverse ridge is formed by the union of the occipital to the parietal bones, which latter advance above the frontal bones, and form the most elevated portion of the skull. The nasal bones are prolonged to the end of the snout, and the symphysis of the lower jaw is consolidated. In proportion to the elevation of the occipital bone are the length and strength of the spinous processes of the dorsal vertebrae. Those of the anterior dorsal vertebrae, in particular, are remarkable for their development, and indicate the volume of the muscles for supporting and moving the head. These are the agents by which the dreadful tusks are brought into play. Rushing on his antagonist, the boar strikes obliquely upwards, right and left, with irresistible violence, in a direction harmonizing with that of the tusks, and in the mode best suited for the exertion of the animal’s strength. The neck is short, and with this shortness is necessarily connected that of the limbs, and especially of the anterior pair, otherwise the animal would not, without difficulty, reach the ground with its snout. Their strength must be in proportion to the weight to be sustained, and the weight depends upon the size of the head and the muscular development of the neck and shoulders.

That the wild hog is the source of our ordinary domestic race cannot be disputed; and as little can we
doubt its extreme antiquity. The hog has survived changes which have swept multitudes of pachydermatous animals from the surface of our earth. It still maintains an independent existence in Europe, and presents the same characters, both physical and moral, which the earliest writers, whether sacred or profane, have faithfully delineated. The domestic stock has indeed been more or less modified by long culture; but the wild species remains unaltered, insomuch that the fossil relics of its primitive ancestors may be identified by comparison with the bones of their descendants.

The fossil relics of the genus *sus* have been found in the miocene, and also in the pliocene, deposits of the tertiary system of Lyell. Kaup, for example, has described fossil bones of the genus *sus* from the miocene Eppelsheim sand, in which they were associated with those of the mastodon and dinotherium; and MM. Croizet and Jobert, in their account of the fossils of Auvergne, describe and figure the fossil bones of a species of hog, which, as was satisfactorily proved, must have lived co-existent with and on the same locality as extinct elephants and mastodons. According to these geologists, the facial part of the fossil hog discovered by them is relatively shorter than in the existing species; hence, under the supposition that their fossil animal might have been distinct, they conferred upon it the title of *aper (sus) Avernensis*. How far this distinctiveness is real, yet remains to be seen; at all events, Professor Owen, in his valuable work on British fossil mammalia, places the *sus Avernensis*, with a query, as one of the synonyms of the *cochon fossile* of Cuvier, *sus scrofa fossilis* of Von Meyer (*Palaeologica*, p. 80), *sus priscus* of Goldfuss-(*Nova Acta Acad. Nat. Car.*, t. xi., pt. 2, p. 482), the *fossil hog* of Dr. Buckland, and the *sus scrofa*, Owen, in *Report of British Association*, 1843, p. 228.

With reference to the fossil remains of the hog, Professor Owen thus writes:—"When Cuvier communicated his memoir on the fossil bones of the hog to the French
Academy, in 1809, he had met with no specimens from formations less recent than the mosses, or turbaries and peat-bogs, and knew not that they had been found in the drift associated with the bones of elephants. He repeats this observation in the edition of the Ossemens Fossiles, in 1822; but in the additions to the last volume, published in 1825, Cuvier cites the discovery, by M. Bourdet de la Nièvre, of a fossil jaw of a *sus*, on the east bank of the lake of Neufchatel, and a fragment of the upper jaw from the cavern at Sundwick, in Westphalia, described by Professor Goldfuss.

"Dr. Buckland includes the molar teeth and a large tusk of a boar found in the cave of Hutton, in the Mendip hills, with the true fossils of that receptacle, such as the remains of the mammoth, Spelean bear, &c. With respect to cave-bones, however, it is sometimes difficult to produce conviction as to the contemporaneity of extinct and recent species."

This observation applies merely to cave-bones, and not to such as are imbedded in deposits with other remains.

The oldest fossil remains of the hog, from British strata, which Professor Owen states that he has examined, were from fissures in the red crag (probably miocene) of Newbourne, near Woodbridge, Suffolk:—

"They were associated with teeth of an extinct *felis*, about the size of a leopard, with those of a bear, and with remains of a large *cervus*. These mammalian remains were found with the ordinary fossils of the red crag; they had undergone the same process of trituration, and were impregnated with the same colouring matter, as the associated bones and teeth of fishes, acknowledged to be derived from the regular strata of the red crag. These mammaliferous beds have been proved by Mr. Lyell to be older than the fluvio-marine, or Norwich crag, in which remains of the mastodon, rhinoceros, and horse have been discovered; and still older than the freshwater pleistocene deposits, from which the remains of the mammoth, rhinoceros, &c., are obtained in such
abundance.” To this the Professor adds:—“I have met with some satisfactory instances of the association of fossil remains of a species of hog with those of the mammoth, in the newer pliocene fresh-water formations of England.”

The most usual situations, however, in which the fossilized bones of the hog are met with, are in peat-bogs, often at the depth of many feet, and in association with the remains of the wolf, the beaver, the roebuck, and a gigantic red-deer. Generally they underlie the bed of peat, and rest on shell-marl or alluvium. Of the identity of these bones with those of the ordinary wild hog all doubt has been removed by the most rigorous comparisons; nevertheless, we do not assert that no other species of sus may not have anciently existed, which, like the mammoth and the mastodon, has become extinct. We mean only to say that the bones of the sus scrofa are among the fossil remains of our island and the continent of Europe. Professor Owen gives an excellent figure of the fossil skull of a wild boar, from drift in a fissure of the freestone quarries in the Isle of Portland.

Leaving the wild hog, let us direct our attention more immediately to that breed which, from time immemorial, has been reared in captivity, and valued for the sake of its flesh, prepared in different ways as food for man.

“One of the most singular circumstances,” says Mr. Wilson (Quarterly Journal of Agriculture), “in the domestic history of this animal, is the immense extent of its distribution, more especially in far-removed and insulated spots inhabited by semi-barbarians, where the wild species is entirely unknown. For example, the South Sea Islands, on their discovery by Europeans, were found to be well stocked with a small black-legged hog; and the traditionary belief of the people, in regard to the original introduction of these animals, showed that they were supposed to be as anciently descended as the people themselves. Yet the latter had no knowledge of the wild boar, or any other animal of the hog kind, from which the
domestic breed might have been supposed to be derived. The hog is in these islands the principal quadruped, and is more carefully cultivated than any other. The breadfruit tree, either in the natural state or formed into sour paste, is its favourite food; and it is also abundantly supplied with yams, eddoes, and other vegetables. This choice of a nutritive and abundant diet, according to Forster, renders the flesh juicy and delicious; and the fat, though rich, is not less delicate to the taste than the finest butter. Before the missionary labours, which have proved so successful in these once forlorn and benighted regions, had substituted the mild spirit of Christianity for the sanguinary forms of a delusive worship, the Otaheitans and other South Sea Islanders were in the habit of presenting pigs at the morai, as the most savoury and acceptable offering to their deities which they had it in their power to bestow. They covered the sacred pig with a piece of fine cloth, and left it to decay near the hallowed spot."

The pigs of these islands are evidently of the Cochin-Chinese or Siamese variety, or at least are closely allied to it, and were no doubt introduced at some remote period by the colonists of Malayan origin. Cook found the fowl as well as the hog at Ulietea and others of the Society Islands.

It has been doubted, and not without some reason, whether the domestic breed, so widely spread, is in every country attributable to the same specific origin. Certain it is that the various domestic races offer marked distinctive peculiarities, and if Mr. Eyton be correct, differences not only in the length of the snout, size of the ears, and symmetry of the body, but also in the number of the vertebrae of the spinal column. In the Proceedings of the Zoological Society for February 28th, 1837, p. 23, will be found the following observations by T. C. Eyton, Esq., on the osteological peculiarities to which we have alluded:—"Having, during the last year, prepared the skeleton of a male pig of the pure Chinese breed, brought
THE CHINESE HOG.
over by Lord Northampton, I was surprised to find that a very great difference existed in the number of the vertebrae from that given in the *Leçons d'Anatomie Comparée*, vol. i., ed. 1835, p. 182, under the head either of Sanglier, or Cochon Domestique. A short time afterwards, through the kindness of Sir Rowland Hill, Bart., M.P., I prepared the skeleton of a female pig from Africa; this also differed, as also does the English long-legged sort, as it is commonly called.

"The following table will show the differences in the number of the vertebrae in each skeleton with those given in the work above quoted:—

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"It is possible that some of the caudal vertebrae may be missing.

"The Chinese was imported into this country for the purpose of improving our native sorts, with which it breeds freely, and the offspring are again fruitful. I, this winter, saw a fine litter of pigs by Sir Rowland Hill's African boar, imported with the female I described, the mother of which was a common pig; time will show whether they will be again fruitful.

"From what has been stated, the result appears to me to be, that either of the above three pigs must be considered as distinct species (and which, should the offspring of the two latter again produce young, would do away with the theory of Hunter, that the young of
two distinct species are not fruitful), or we cannot consider osteological character a criterion of species.

"I have been induced to offer the above, not with any desire of species-making, but of adding something towards the number of recorded facts, by which the question what is a species, must be answered."

Here we may be allowed to repeat our own observations on this subject which have appeared elsewhere, and which we may preface by stating our opinion, that closely-allied species may produce offspring fertile inter se, although we have no proof positive of the fact in the case in question; for "when domestication produces decided differences of external form, we see no reason why it should be difficult to admit of the extension of the differences to internal parts also, and especially to the osseous frame-work, on which the form and symmetry of the body so greatly depend, or why the law of variation should be confined in its influence to one part, and restricted from another. If it be admitted that the bones may be somewhat modified in length or stoutness, we see not why it is that a numerical variation in the bones of the vertebral column should be so great a stumbling-block, especially seeing that accidental, and perhaps hereditary, variations are far from being uncommon, both in men and others of the mammalia. We can easily conceive that a portion of the osseous system, offering in almost every species of quadruped some variation in the number of its constituent parts, should be also the most likely to exhibit such variation, where a species long subjected to the modifying influence of human control, has branched out into various breeds or races, distinguished by decided external characteristics. It would be interesting and important to know, whether the numerical ratio of the vertebrae, as given in the foregoing table, is constant in each race: and also whether the same variation does not obtain among others of our domestic animals, divided into numerous breeds or races, as the dog, the sheep, and the goat. The subject has not been
treated so fully and extensively as it deserves. With respect to the caudal vertebrae, indeed, we know that they are subject to great numerical variation in most of our domestic animals; witness the dog and even the common fowl, of which latter, a tail-less breed, perpetuated from generation to generation, is far from being uncommon. What takes place in one part of the spinal column may, we conceive, occur also in another and more important portion, to some if not to so great an extent; and the modification may moreover be transmitted from one generation to another."

Examples of extraordinary modification in other parts of the skeleton, transmissible from generation to generation, may be here adduced in confirmation of our views. Aristotle notices a race of hogs with undivided toes, or rather with hoofs consolidated together; and Linnaeus informs us that a similar variety of the hog is not uncommon in the neighbourhood of Upsal, in Sweden. A still more extraordinary case of modification of the osseous framework, is recorded in the *Proceedings of the Zoological Society for 1833*, p. 16, where will be found the notice of a race of pigs with only two legs, the hinder extremities being entirely wanting. The communication, with drawings of two individuals, was made by Colonel Hallam, who states that these animals were observed "at a town on the coast in the Tanjore country in the year 1795; they were from a father and mother of a similar make, and the pigs bred from them were the same." Thus, then, accidental malformations, either by excess or deficiency, may become transmissible, and so perpetuate themselves.

The sentiments of a writer in the *Penny Cyclopædia*, on the subject of the osteological differences observable in domestic swine, are much in accordance with our own. Undoubtedly, he remarks, such records as those given by Mr. Eyton are valuable, but he thinks that the inference is precipitate; adding, that John Hunter's theories are not so easily done away with, and that osteological cha-
racter will continue to be a criterion of species, notwithstanding the differences set forth. He goes on to say, “By the term pig, we understand the African and Chinese varieties of the hog. *Phacochoerus* cannot be meant, or it would be stated. The pure Chinese breed was imported long ago; and for years its stock, bred from its union with our English varieties, has been known in our farm-yards. The varieties bred by man from the wild hog, are spread all over the world in a domesticated state; and there is no more reason to doubt that the result, a union of an African pig with a Hampshire hog, would be fruitful, than that a breed composed of the Berkshire, Chinese, and Neapolitan, would produce a good litter. Now if we take little or no note of the differences in the caudal vertebrae, for the reason assigned by Mr. Eyton among others, what remain? Differences not exceeding two in the dorsal vertebrae, two in the lumbar vertebrae, and one in the sacral vertebra, after a course of domestication no one knows how long. We know what breeding will do with dogs. Take a greyhound and a true shepherd’s dog, for example, to say nothing of tail-less cats. We know what it will do among poultry: it will take away the drooping feathers of the cock’s tail in those bantams known to fanciers as hencocks (Sir J. Sebright’s breed), and remove the tail-feathers altogether (rumpless fowls); whilst in the top-knotted varieties an osteological difference is produced in the cranium. Man has occasionally an additional lumbar vertebra. This accidental excess was first detected in the negro, and was laid hold of by those who would have made him a different species; but by-aud-by they found a white man with one more vertebra than he ought to have had, and wisely said no more about it.”

We have, then, no solid or sufficient grounds for believing that, widely as the domestic hog is spread, and remote and insulated as are some of the localities in which it has been discovered by voyagers, it is derived from different sources; although, as we have shown,
there are more wild species of the restricted genus *Sus* than zoologists formerly suspected. In making these remarks, we may add, that, as to every general rule there are exceptions, so some are to be found here. The Papuan hog, caught and reared in captivity, is distinct, and it is probable that the domestic hogs of Borneo, and of some of the islands adjacent, are derived from the wild races there indigenous. Be this as it may, we do not mean to insist upon the fact; our subject is the ordinary hog, as we see it in its state of contented domestication in Europe, and especially our own country.

At what period the hog was reclaimed, and by what nation, we cannot tell. As far back as the records of history go, we find notices of this animal, and of the use of its flesh as food. By some nations it was held in abhorrence, and prohibited as food; while among others its flesh was accounted a great delicacy. By the Mosaic law the Jews were forbidden to use the flesh of the swine as food—it was unclean; and the followers of Mohammed, borrowing their ritual from the institutions of Moses, hold the flesh of the hog in utter abhorrence. Paxton, in his *Illustrations of Scripture*, vol. i., says, "The hog was justly classed by the Jews among the vilest animals in the scale of animated nature; and it cannot be doubted that his keeper generally shared in the contempt and abhorrence which he had excited. The prodigal son in the parable had spent his all in riotous living, and was ready to perish through want, before he submitted to the humiliating employment of feeding swine."

We pass over Paxton's description of the hog as the "vilest of animals," because there is no sense in the expression, and its presumed meaning is unworthy of notice. It cannot, however, be doubted, from the passage in Luke (xv. 15), and from others well known, that herds of swine were kept by the Jews, perhaps for sale and profit. Dr. J. Kitto says, "There does not appear to be any reason in the law of Moses why the hog should be held in such peculiar abomination. There seems nothing
to have prevented the Jews, if they had been so inclined to rear pigs for sale, or for the use of the lard. In the Talmud there are some indications that this was actually done; and it was probably for such purpose that the herds of swine, mentioned in the New Testament, were kept, although it is usual to consider that they were kept by the foreign settlers in the land. Indeed the story which accounts for the peculiar aversion of the Hebrews to the hog, assumes that it did not originate until about one hundred and thirty years before Christ, and that previously some Jews were in the habit of rearing hogs for the purposes indicated."

The same writer, in a note upon Luke viii. 32, enters at greater length into this subject. "We have already," he says, "intimated our belief that there was much error in supposing that the law which declared that certain kinds of animals were not to be used for food, should be understood as prohibiting them from rearing, for any other purpose, the animals interdicted as food. There was certainly nothing in the law to prevent them from rearing hogs, more than for rearing asses, if they saw fit to do so: It appears, in fact, that the Jews did rear pigs for sale to their heathen neighbours, till this was forbidden after the principle of refining upon the law had been introduced. This prohibition demonstrates the previous existence of the practice; and it did not take effect till about seventy years B.C., when it is alleged to have originated in a circumstance which occurred between Hyrcanus and Aristobulus, the sons of King Alexander Janneus. Aristobulus was besieging Hyrcanus in Jerusalem; but not wishing to interrupt the services of the temple, he permitted an arrangement under which money was let down from the temple in a box, in return for which the lambs required for the daily sacrifices were sent up. It at last occurred to a mischievous old man, 'who understood the wisdom of the Greeks,' that there would be no overcoming the adverse party while they employed themselves in the service of God; and therefore one morning
he put a hog in the box, instead of a lamb. When half way up, the pig reared himself up, and happened to rest his fore feet upon the temple wall, whereupon, continues the story, Jerusalem and the land of Israel quaked. In consequence of this, two orders were issued by the Council: 'Cursed be he that breedeth hogs;' and 'Cursed be he who teacheth his son the learning of the Greeks.' Such is the origin of the order against rearing hogs, as related in the Babylonian Talmud. One of the enforce-ments of this prohibition is curious, as showing for what purposes besides sale hogs had been reared by the Jews. 'It is forbidden to rear any hog, even though hogs should come to a man by inheritance, in order to obtain profit from its skin or from its fat, for anointing or for light.' From this it would seem that the Jews had been wont to make ointments with hogs' lard, and that they did not exclusively use oil for lights, but fat also, which was probably done according to a method we have often seen in the East, by introducing a wick into a lump of grease, which is set in a lamp, or in a round hollow vessel, made for the purpose; the heat of the kindled wick, as in a candle, gradually melts as much of the fat as is required to feed the flame. The inconvenience of the deprivation of the useful lard of hogs for this and other purposes, seems to have given occasion to an explanation, that the prohibition was not to be understood to imply that the fat of hogs might not be obtained by purchase from the Gentiles. The prohibition of keeping hogs does not appear to have had complete effect, as regulations are made concerning towns in which hogs were kept; and the keepers of swine are mentioned as contemptible and infamous wretches, so that it was a favourite term of abuse to call a person a hog-breeder or a swineherd. Although, therefore, it may be likely that the herds of swine here mentioned were the property of the heathen, who certainly did live with the Jews in the towns of this neighbourhood (the country of the Gadarenes), it is not impossible that they belonged to the Jews,
who kept them in despite of the prohibitions we have mentioned."

Among the ancient Egyptians, although the figure of the hog occurs several times well drawn at Edfou, this animal was held in detestation. "Swine," says Herodotus, "are accounted such impure beasts by the Egyptians, that if a man touches one, even by accident, he presently hastens to the river, and, in all his clothes, plunges himself into the water. For this reason swineherds alone of the Egyptians are not suffered to enter any of their temples; neither will any man give his daughter in marriage to one of that profession, nor take a wife born of such parents, so that they are necessitated to intermarry among themselves. The Egyptians are forbidden to sacrifice swine to any other deities than to Bacchus, and to the moon when completely at full, at which time they may eat of the flesh. When they offer this sacrifice to the moon, and have killed the victim, they put the end of the tail, with the spleen and fat, into a cauld found in the belly of the animal, all which they burn on the sacred fire, and eat the rest of the flesh, on the day of the full moon, though at any other time they would not taste it. Those who, on account of their poverty, cannot bear the expense of this sacrifice, mould a paste into the form of a hog, and make their offering. In the evening of the festival of Bacchus, though every one be obliged to kill a swine before the door of his house, yet he immediately restores the carcase to the swineherd who sold it."

This aversion towards the hog, among the ancient Egyptians and the Jews (we need not here notice the Mahommedans or the Brahminical tribes of India) is very remarkable. Among the Greeks and the Romans the flesh of the swine was held in estimation, although the swineherd attracted little notice from the poet. Why, then, in Western Asia and Egypt, should it have been forbidden? We attribute it entirely to mystical or religious motives, which we are not quite able to appreciate.
The following passage from Griffith’s Cuvier is worthy our consideration, although it does not bring conviction to our mind; it is rather plausible than demonstrative:

"In hot climates the flesh of swine is not good. M. Sonnini remarks that in Egypt, Syria, and even the southern parts of Greece, this meat, though very white and delicate, is so far from being firm, and is so overcharged with fat, that it disagrees with the strongest stomachs. It is, therefore, considered unwholesome; and this will account for its proscription by the legislators and priests of the East. Such an abstinence was doubtless indispensable to health under the burning suns of Egypt and Arabia. The Egyptians were permitted to eat pork only once a year—on the feast day of the moon—and then they sacrificed a number of these animals to that planet. At other times, if any one even touched a hog, he was obliged immediately to plunge into the river Nile, with his clothes on, by way of purification. The swineherds formed an isolated class, the outcasts of society. They were interdicted from entering the temples or intermarrying with any other families. This aversion for swine has been transmitted to the modern Egyptians. The Copts rear no pigs, any more than do the followers of Mohammed. The Jews, who borrowed from the Egyptians their horror of pigs, as well as many other peculiarities, continue their abstinence from them in colder climates, where they form one of the most useful articles of subsistence."

If the hog in warm climates is so unwholesome as food, how happens it that the Chinese rear this animal in such numbers for the table? and how happens it that the hare (if, indeed, this animal be intended) was forbidden by the Mosaic laws as food? Surely the same objection could not apply to this latter animal as to the hog. Whatever the motives might have been, both among the Egyptians and the Jews, which led them to forbid the use of swine’s flesh at the table, a regard to the health of the people was not one. Locusts were permitted by the latter; but
creeping things in general denied, as were also fishes destitute of apparent scales. Among the ancient Greeks and Romans the flesh of the pig was held in great estimation. The art of rearing, breeding, or fattening these animals was made a complete study; and the dishes prepared from the meat were dressed with epicurean refinement, and in many modes. One dish consisted of a young pig, whole, stuffed with beccaficoes and other small birds, together with oysters, and served in wine and rich gravy. This dish was termed Porcus Trojanus, in allusion to the wooden horse filled with men which the Trojans introduced into their city—an unpleasant allusion, one would think, seeing that the Romans boasted their Trojan descent. However, such was the name of this celebrated and most expensive dish, so costly, indeed, that sumptuary regulations were passed respecting it.

Esteemed, however, as the flesh of the hog was by the Greeks and Romans, commonly as the animal was kept, and carefully and even curiously as it was fed, in order to gratify the appetites of the wealthy and luxurious, yet the swineherd, as may be inferred from the silence of the classic writers, and especially of the poets who painted rural life, was not held in much estimation. No gods or heroes are described as keeping swine. Theocritus never introduces the swineherd into his idyls, nor does Virgil admit him into his eclogues, among his tuneful shepherds. Homer indeed honours Eumæus, the swineherd of Ulysses, with many commendations; but he is a remarkable exception. Perhaps a general feeling prevailed, and still in some measure prevails, that the feeders of the gluttonous and wallowing swine became assimilated in habits and manners to the animals under their charge; or it may be that the prejudices of the Egyptians relative to this useful class of men extended to Greece or Italy, giving a bias to popular opinion.

From the earliest times in our own island the hog has been regarded as a very important animal, and vast herds were tended by swineherds, who watched over their safety.
in the woods, and collected them under shelter at night. Its flesh was the staple article of consumption in every household, and much of the wealth of the rich and free portion of the community consisted in these animals. Hence bequests of swine, with land for their support, were often made; rights and privileges connected with their feeding and the extent of woodland to be occupied by a given number, were granted according to established rules. In an ancient Saxon grant, quoted by Sharon Turner in his History of the Anglo-Saxons, we find the right of pasturage for swine conveyed by deed: “I give food for seventy swine in that woody allotment which the countrymen call Wolferdinlegh.” The locality of the swine’s pasturage, as here described, has a somewhat ominous title, referring as it does to the haunt of an animal, from incursions of which, on flocks of sheep and herds of swine, during the Saxon period of our history, both the shepherd and the swineherd had to preserve their respective charges. The men employed in the duties—generally thralls, or born slaves of the soil—were assisted by powerful dogs capable of contending with a wolf, at least until the swineherd came with his heavy quarter-staff or spear to the rescue. In Sir Walter Scott’s novel of Ivanhoe the character of Gurth is a true, but of course somewhat over-coloured picture of an Anglo-Saxon swineherd, as is that of his master of a large landed proprietor a great portion of whose property consisted in swine, and whose rude but hospitable board was liberally supplied with the flesh.

Long after the close of the Saxon dynasty the practice of feeding swine upon the mast and acorns of the forest was continued, till our forests were cut down and the land laid open for the plough; even yet, in some districts, as the New Forest of Hampshire, the custom is not discontinued; and in various parts of the country, where branching oaks in the hedgerows overshadow the rural and secluded lanes, the cottagers turn out their pig or pigs, under the care of some boy, to pick up the fallen
acorns in autumn. Pigs turned out upon stubble fields, after harvest, often find in oak copses, in October and November, a welcome addition to their fare.

The large forests of England were formerly royal property; nevertheless, the inhabitants of the adjacent towns, villages, and farms enjoyed both before and long after the Conquest, under certain conditions of a feudal nature, and probably varying according to circumstances, and the tenures by which lands were held, the right of fattening their swine in these woodlands. The lawful period for depasturing swine in the royal forests extended from fifteen days before Michaelmas, to forty days afterwards, and this was termed the pawnage month. This term was not, however, very strictly adhered to; many herds were suffered to remain in the forest during the whole year, the consequence of which was that numbers became feral, and were not collected by their owners without difficulty. Little damage would be done in the woods by these swine; but, no doubt, like their wild progenitors, they would take every opportunity of invading the cultivated grounds, and of rioting in the fields of green or ripening corn.

CHAPTER II.
THE HOG AS A DOMESTIC ANIMAL.

It has been usual to condemn the domestic hog, in no very measured terms, as a filthy, stupid brute, at once gluttonous, obstinate, and destitute of intelligence. Against this sweeping censure we beg to enter our protest. With regard to the filthiness of the hog in a state of confinement, everything will depend on the trouble taken by its keeper. He may allow the sty or the yard to be covered with filth of every description, as disgraceful to himself as it is injurious to the animals.
In this case the hog is the sufferer; for naturally it delights in clean straw, luxuriating in it with evident pleasure, its twinkling little eyes and low grunt expressing its feelings of contentment. In fact, the hog, so far from being the filthiest, is one of the cleanliest of our domestic quadrupeds, and is unwilling to soil the straw bed of his domicile if anything like liberty be allowed him. It may be here said, Is not the hog fond of wallowing in the mire? Undoubtedly it is; and so are all the genuine pachydermata, as the elephant, the rhinoceros, and tapir. The skin of these animals, thick as it may be, is nevertheless sensitive, and a covering of mud is doubtless intended as a protection to the skin in the heat of summer (the time in which the hog chiefly delights to wallow), both against the scorching rays of the sun and the attacks of myriads of puny but intolerable winged persecutors. No animal delights more to have its hide rubbed and scratched than the hog—a circumstance which every one practically conversant with pigs must have frequently noticed. Passing, one hot day, through a pretty village in Derbyshire, we saw at the door of several cottages a fat pig, exquisitely clean, reposing on a bed of a straw; and we saw, moreover, the cottager's wife in several instances scrubbing the animals with a wisp of straw, or a brush, dipped repeatedly into a pail of water—an operation which the creatures evidently enjoyed—at least they resisted not as they would have done had it not been to their liking. Finer pigs never better rewarded the good management of their owners. No doubt the use of the wisp or scrubbing-brush contributed to their health and comfort. The cottagers affirmed that it made them fatten more kindly.

Now, with respect to the gluttony of the pig, we acknowledge him to be "a huge feeder;" but so is the horse or the ox, and indeed every animal that has to support a bulky carcase; and not only so, but become fat upon vegetable aliment. To a certain extent, indeed, the hog is omnivorous, and may be reared on
the refuse of the butcher's slaughter-house; but such food is not wholesome nor is it natural; for though this animal be omnivorous it is not essentially carnivorous. Vegetable productions, as roots and grain, beechmast and acorns, constitute the staple of its natural diet; hence the refuse of the dairy farm is more congenial to the health of the animal, to say nothing of the quality of its flesh. All animals eat with a keen relish—the hog amongst the rest; besides, his appetite is pampered, the object being to make him fat; and certainly a well-fed plump hog is a more comely-looking beast than the gaunt, lean, flat-sided animals so generally seen in France and Germany. However, if the charge of gluttony be proved against the pig fattening in his sty, it may be equally proved against the ox fattening in his stall. When old, or when oppressed by fat, the hog, it must be confessed, is sluggish and indolent; when young, however, it is lively and energetic and disposed to indulge in sportive gambols, which, for anything we can see, are quite as amusing as those of lambs.

Many extraordinary examples of the docility and intelligence of the too much despised hog are on record. Be it remembered, that it belongs to that group of which the sagacious elephant forms a portion—not that we assert the intellectual equality of the two animals; still, we believe that the hog may be trained to various modes of labour, with far less trouble than is generally supposed. It is not, however, needed for any such purposes; consequently, except in a few isolated instances, its education is utterly neglected; all it has to do is to eat and sleep, and become fat—its utility to man commencing at its death by the knife of the butcher. Yet, even under the disadvantages in which the pig is placed—debarred its liberty, prevented from exercising its natural instincts, and undisciplined in the slightest degree—it manifests both discernment and attachment; it recognizes the voice, and even the footsteps, of its feeder, and is evidently pleased with his notice. Instances of
THE HOG AS A DOMESTIC ANIMAL.

the attachment of pigs to particular persons, and even to other animals, are on record. It is not often, however, that porcine familiarity is encouraged. Setting all prejudice aside, it must be confessed that the animal would be more likely to prove troublesome and annoying than agreeable or welcome. We have, however, heard of persons who have petted pigs, and know many who would abhor to partake of the flesh of one reared upon their own premises—a circumstance not to be wondered at, when we consider that, while alive, the animal not only knew them, but greeted their approach, and displayed unmistakeable signs of attachment.

The senses of smell, taste, and hearing are possessed by the hog in great perfection. It is a common saying that pigs can smell the coming storm; certain it is that they are very sensitive of approaching changes of weather. They become agitated, hurry under shelter, and during the continuance of the storm utter screams, run about with straw in their mouth, or carry it to their sty as if to add to their comfort and defence. This peculiarity has been noticed in ancient times as well as in the present. Dr. Darwin, in his Zoonomia, says, "It is a sure sign of a cold wind when pigs collect straw in their mouths and run about crying loudly. They would carry it to their beds for warmth, and by their calls invite their companions to do the same, and add to the warmth by numerous bed-fellows." At all times pigs are fond of huddling together under the straw, but especially in chilly or windy weather, from which the young in particular appear to suffer much. From this cause litters of pigs farrowed during a severe winter are often greatly thinned, and the survivors thrive with difficulty.

From some ill-understood cause, several domestic animals, as the rabbit, and sometimes the cat, seem to forget all instinctive ties, and, turning upon their offspring, ravenously and unnaturally devour them. This is not unfrequently the case with the sow; and it is
remarkable, that when this revolting act has been once committed its recurrence may be expected; it would seem as if a perversion of the στοργή had taken place. This disposition is not always or necessarily connected with general ferocity, nor even with the fierce anxiety which the sow, with other animals, displays in the protection of her young; it may be that the animal is ordinarily mild and gentle and yet at this juncture becomes madly ferocious. We are not aware whether or not such tragic scenes take place among animals in a state of natural independence; most probably they never do, or but very rarely. Yet in early ages the sow was evidently subject to this morbid propensity; for among the regulations respecting swine laid down by Hoel Dha, one of the good qualities of a sow expressly noticed, is that she do not devour her young ones. The less the sow, after bringing forth her young, is meddled with—the more comfortable her bedding—the more regularly and gently she has been previously managed and treated—the less likely is she to violate one of the great laws of nature.

The wild boar, as we have said, is a dangerous animal; and so, indeed, to a certain extent, is the domestic boar of some of the larger breeds. Instances are not unfrequent of boars turning furiously upon their keepers, especially if interfered with when in company with the female, or if constrained to quit her society.

It is not, however, only at certain times and under certain circumstances that the boar is dangerous: a boar, especially one of the large old breeds, is by no means a safe animal to venture near at any time, and we have more than once seen sows almost equally savage; this, however, is not generally the case.

None of the pachydermata are, as a general rule, remarkable for fertility. The elephant, the rhinoceros, the hippopotamus, &c., appear to produce only a single offspring at a birth, and that after a long period of gestation; for example, the gestation of the elephant is said to extend to twenty months and eighteen days. It
is then not till after a considerable lapse of time that she again becomes pregnant, and she produces only a single young one. The hog-like peccaries produce, according to Azara, only two at a birth. To this rule the swine is a exception. It may be that the wild species are less pro lific than the ordinary domestic variety of the genus su yet they are fertile; but in the ordinary hog this fertil ity is at a maximum. Ordinarily, a healthy sow produces eight, ten, or twelve young ones twice a year. The period of gestation is somewhat variable; Cuvier says, "quatre mois;" others give it as three months, three weeks, and three days; that is, 108 days. According to M. Tessier, out of fifteen sows, one littered in 109 days, and one in 123 days, the latitude being fourteen days; according to others, the range of gestation extends from seventeen weeks, or 119 days, to twenty weeks, or 140 days. According to Desmarest, the wild sow goes with young four mouths and a few days, and produces from three to nine at a birth, suckling them from three to four months. It would appear, then, from these observations, that the period of gestation in the domestic sow varies according to age, constitution, food, and the peculiarities or idio-syncracies of the peculiar breed. Young and weakly sows not only produce fewer pigs, but farrow earlier than those of more mature age and sounder constitution; and, moreover, as might be expected, their offspring are deficient in vigour, often indeed puny and feeble. Here, having trenchd upon the subject, we may advert to the principles upon which the breeding of swine should be conducted. Two great objects are in view, fertility and early fattening. With respect to fertility, we rather advocate moderation than excess, both on account of the strength and health of the mother, and the improve ment of her progeny from a full supply of nutriment. How long a sow should be kept for breeding depends of circumstances; generally speaking, however, after three or four years the most fruitful sows, exhausted in their reproductive energies, evince a great falling off both in
the number and vigour of their young. There are, however, exceptions; and of these, one is recorded by Gilbert White, in Letter lxxv.

"The natural term of a hog's life," he says, "is little known; and the reason is plain—because it is neither profitable nor convenient to keep that turbulent animal to the full extent of its time; however, my neighbour, a man of substance, who had no occasion to study every little advantage to a nicety, kept a half-bred bantam sow, who was as thick as she was long, and whose belly swept the ground, till she was advanced to her twentieth year, at which period she showed some symptoms of age by the decay of her teeth and the decline of her fertility.

"For about ten years this prolific mother produced two litters in the year, of about ten at a time, and once above twenty at a litter; but as there were nearly double the number of pigs to that of teats many died. From long experience in the world this female was grown very sagacious and artful. At the age of about fifteen her litters began to be reduced to four or five; and such a litter she exhibited when in her fatting-pen. She proved, when fat, good bacon, juicy and tender; the rind or sward was remarkably thin. At a moderate computation, she was allowed to have been the fruitful parent of 300 pigs—a prodigious instance of fecundity in so large a quadruped; she was killed in spring, 1775."
CHAPTER III.

BRITISH BREEDS OF HOGS.

There would be very little utility in describing all the varieties of hog which within the last hundred and fifty years have been found in different parts of the kingdom, as the greater number have been, or are rapidly in course of being extinguished in two, or at most three, of the modern breeds. The intercourse between different districts created by railroad traffic, and the competition of agriculture, tend, in so prolific an animal, to spread the few best breeds everywhere. The old English hog was a large, coarse animal, with a broad snout, large flopping ears, low in the shoulder, long in the back, flat-sided, long in the limbs, large-boned, with a thick hide covered with coarse bristles; very like, perhaps a little better than, the old Irish and modern French pig. He was long in coming to maturity, a large feeder, a slow fattener, and hardy; but the sow was very prolific. In fact, this breed was well suited for a rude condition of agriculture, where farms were dotted among wastes and woodlands, where the live stock was obliged to travel far, and to a great extent find food for itself; and when the time of arriving at maturity was of very little importance. In colour they were white or rusty red or black, and often a mixture of those colours.

But Mr. Rowlandson, in the Journal of the Royal Agricultural Society, in his capital Prize Essay "On Pigs," observes, "Notwithstanding these ill qualities, I have witnessed in Lancashire, Yorkshire, and Cheshire, instances where the old breed have, through the effects of better care, shelter, and food, produced a most valuable animal; the thick flop ears having become fine and thin, the bones
a moderate size, the thick coat of bristles converted into a finer description spread more thinly, and the white skin became fine and ruddy,' and this where there could scarcely be a doubt that the animal was the aboriginal one and had never received a cross. Until within a recent period (1850) fine animals of this description were to be found pretty frequently with farmers in the counties named.

They were exceedingly prolific and excellent mothers, suckling from twelve to eighteen, and often giving birth to twenty and even twenty-four; in such cases, the extra number were forced forward and killed as sucking pigs, so as to reduce the number to a dozen. This breed consumes enormous quantities of food for twelve or eighteen months without making progress in proportion; after eighteen months, if put up in fair store order, there is scarcely a breed that puts on more flesh in return for meal; it reaches enormous weights and makes hams of excellent quality.

The nearest approach to this description that we have seen of late years were a gigantic sow, sold to Monsieur Allier, of Petit Bourg, France, for forty guineas, at Chelmsford Royal Agricultural Society's show, in 1856; and a still more enormous hog, nearly as large and much heavier than a fat Kerry cow, was exhibited by William Scott, the celebrated trainer, at the Smithfield show of the same year, not half fat, both of the white Yorkshire breed, which is the same, we believe, as what is also called the Lancashire and Cumberland.

In the north of Scotland a smaller race, with sharp and almost erect ears, greatly resembling the wild boar in form, long existed, and is yet extant. These animals were dusky or brownish-black, wild in their habits, and very hardy. We say were, but, in fact, such is still the race in the Orkneys and Hebrides. They are small, rough, semi-wild beasts, depending principally upon their own means of gaining a subsistence, and are evidently the descendants of a wild stock. Their degeneracy in
size may be attributed to climate and deficiency of nutrition while young; for when brought into more southern districts, and fed in the ordinary way, they rapidly acquire an increase in size, fatten kindly, and return excellent meat.

Sir Walter Scott, in his Journal of a Voyage to the Shetland and Orkney Isles (Lockhart's Life), observes that the hogs of these islands "are an excellent breed—queer-looking wild creatures with heads like wild boars, but making capital bacon."

While young, these pigs often fall a victim to the eagle, which pounces upon them, and carries them off to its eyrie; indeed it is asserted that children are not altogether safe. Speaking of Hoy, one of the Orkneys, Sir Walter Scott, in his Diary, makes the following observations:—"The eagle, with every other ravenous bird, abounds among the inaccessible precipices of Hoy, which afford them shelter, while the moors, abounding with grouse, and the small uninhabited islands and holms, where sheep and lambs are necessarily left unwatched, as well as the all-sustaining ocean, give these birds of prey the means of support. The clergyman told us that a man was lately alive in one of the islands, who, when an infant, was transported thence by an eagle, over a broad sound or arm of the sea, to the bird's nest in Hoy. Pursuit being instantly made, and the eagle's nest being known, the infant was found there, playing with the young eaglets. A more ludicrous instance of transportation he himself witnessed. Walking in the fields, he heard the squeaking of a pig for some time without being able to discern whence it proceeded, until, looking up, he beheld the unfortunate grunter in the talons of an eagle, who soared away with him towards the summit of Hoy. From this it may be conjectured that the island is very thinly inhabited. In fact, we only saw two or three little wigwams."

It is, as we have said, from these shaggy, uncouth animals than the islanders obtain the bristles which they
intertwine into the ropes made purposely for lowering the cragsmen down the face of the most awful precipices.*

These mountain hogs are in tolerable condition after their summer fare, and should be killed in autumn. Occasionally they make inroads upon the patches of corn and commit much mischief, rooting up excavations, says Low, large enough to bury half a dozen of them, which excavations, standing full of water all the winter, do vast hurt to the grounds, though the farmers stiffly maintain the contrary. During the long and rigorous winter these animals must suffer extremely, and in some islands many probably perish.

It seems that this breed, which not a century since was common in the highlands, where vast herds were kept for the sake of sale in the lowlands, is less thoroughly reclaimed than were the old, gaunt, flap-eared breeds of England. The latter had undergone a certain degree of modification long before the improvements effected in modern days. Among these old breeds was one described by Mr. George Culley; it prevailed in Yorkshire and Lancashire; the animals were of large

* This cord is not always safe. "There is yet," says Sir Walter Scott, "a man living—if he can be called so—to whom the following story belongs. He was engaged in catching sea-fowl upon one of the cliffs (of the Shetland Isles) with his father and brother. All three were suspended by a cord, according to custom, and overhanging the ocean at the height of some hundred feet. This man being the uppermost on the cord, observed that it was giving way, as unable to support their united weight. He called out to his brother, who was next to him, 'Cut away a nail below, Willie,' meaning he should cut the rope beneath, and let his father drop. Willie refused, and bid him cut himself if he pleased. He did so, and his brother and father were precipitated into the sea. He never thought of concealing or denying the adventure in all its parts." So true it is that habitual exposure to danger hardens the heart against its consequences, both as they respect ourselves and others. Doubtless the man reasoned thus: "It is better that two lives out of the three should be lost, than all three. I am the uppermost, those below must go; had I been below it would have been my case. The mischance is sad, but it cannot be avoided."
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size, and white, with huge ears hanging over their eyes. "They were very plain, thin, awkward hogs, with very long legs; but what distinguished them most was two wattles or dugs, not unlike the teats of a cow's udder, which hung down from their throats, one on each side." This breed appears to be altogether extinct in our island, and replaced by the still larger white Yorkshire, Lancashire, and Cumberland breeds. To match the stories we read of gigantic hogs we must travel into Hungary and Galicia, where food is unlimited and time of maturity of no value.

Among the early improvers of the domestic swine must be enumerated Mr. Bakewell, the great founder of the new Leicester sheep. Before his time the Leicestershire hogs were of the same coarse, ungainly kind which prevailed generally throughout the midland counties. He commenced as he did with the sheep, by a judicious selection of stock destined for breeding, and by persevering in this system greatly modified the characters of the old race. In due time the Bakewell breed extended into other counties, superseding or influencing the ordinary races. This was the case in Yorkshire, the old breed of which county was of large size, gaunt, greedy, and unthrifty, coarse in the quality of the meat, flat-sided, and huge-boned. By crossings with the new Leicestershire stock great improvement was soon effected; the cross-breed, as was to be expected, lost in size, but gained in every good quality; it became deep-sided, short-limbed, small-boned, and fattened readily. The coarse wiry bristles were exchanged for fine thin hair, and the whole aspect of the animal underwent a transformation. The hogs at about two years old averaged from 30 to 55 or 60 stones of 14 lbs., younger animals weighing in proportion.

Some of the Yorkshire breeders preferred the pure new Leicesters; and these are still reared by judicious farmers, who esteem them as superior to most others, and certainly more profitable than most of the larger kinds. They fatten kindly, often attaining the weight of up-
wards of 30 stones of 14lbs., at the age of sixteen or eighteen months. Other breeds, however, besides the new Leicester, found advocates in Yorkshire; among these the Berkshire, as are also crosses between the Yorkshire and the late Lord Western's improved Essex variety.

The improved Berkshire hog belongs to the tribe of large swine, or perhaps, rather, did; for, well as we know Berkshire, we have not observed for several years any individuals approaching what may be termed an outstanding size. Formerly hogs of pure breed were often found to weigh from 100 to 110 or 120 stones of 8lbs. to the stone; and it is recorded that one bred at Petworth in Sussex measured 7 feet 7 inches from the tip of the snout to the root of the tail, 7 feet 10 inches in girth round the centre, 5 feet round the neck, and 2 feet across the span of the back; height, 3 feet 9 inches. It was remarkable that this huge animal was a moderate consumer of food, his allowance being about two bushels and six gallons of ground oats, peas, and barley, per week.

The present Berkshire breed are moderate-sized beasts, roundly made, short in the limb, and with a short arched neck, with heavy cheeks, sharp ears, an abruptly-rising forehead, short in the snout, well-barrelled, broad-backed, and clean in the limbs. Some, called Berkshire, are sandy coloured or whitish, spotted with black, or half white and half black, a colouring indicative of a mixture of the Neapolitan and the Chinese, as well as of the Suffolk strain; but the true Berkshire are black, with white feet, a white mark in the face, and a little white behind each shoulder.

Around Henley in Oxfordshire on the banks of the Thames, and about Dorking in Surrey, cross-breeds of the Berkshire strain prevail; although in the latter county the improved Essex breed is held in great estimation, and called the new Oxford breed.

There are few counties in England into which the Berkshire breed of pigs has not penetrated; it is everywhere
valued for its excellent qualities, its fair, moderate size, its small bones, its thin sward of skin, its fattening qualities, and the excellence of its flesh. First-rate hogs of this breed have been reared in distant counties; and Staffordshire can boast a strain from the progeny of the Tamworth Boar. Through Middlesex, Hertfordshire, Bedfordshire, and Leicestershire, the Berkshire breed has extended itself, modifying the old races, not without other crossings; indeed, it must be confessed that the modern system of interbreeding renders it difficult to tell the original stock on which the grafts have been made; or rather what strain shows itself the most prominently.

Wiltshire is celebrated, and deservedly, for bacon, as Yorkshire for hams. The old Wiltshire hog was of large size, short-limbed but heavily-boned, long in the body but round and high on the croup. The ears, though large, were pointed. These animals were slow feeders and great consumers of food; nevertheless, when at some cost they were fattened, they produced meat of excellent quality, especially fitted for converting into bacon. They were probably a mere variety of the Berkshire strain, and certainly possessed good qualities; but they are greatly improved, owing to judicious crossings with the Chinese and Neapolitan stocks; and though, as might be anticipated, they are smaller in stature than formerly, they are finer-boned, more compact in contour, far quicker fatteners, and consequently ready for the butcher earlier. At the same time the superior quality of the meat has suffered no decline; indeed, quite the contrary. Wiltshire bacon commands a high price.

He who travels through Hampshire, and looks into the farm-yards, will see some excellent hogs, generally black and middle-sized, with rather a long snout, but compactly made; they are a modification of the old, large-sized Hampshire stock, individuals of which in former days were of huge magnitude, and some carried about for show. This colossal breed is now seldom to be seen; but
it had its good points. When fattened (and time and much food were required to effect this), it returned, by way of repayment, a weighty carcase. As in all such cases, however, the question comes in, Was it profitable—was the repayment for food and time in a just ratio? The answer must be—quick fattening, even with a smaller carcase, a gain of time and of provision being included, is one of the points in which the farmer finds himself the best remunerated. Slow feeders, however weighty their carcase at last, will not be found profitable when all expenses are calculated. As we have said, however, this old breed is seldom, if ever, to be seen; occasionally, perhaps, large-sized hogs, in which the strain of the old race prevails, may be met with, but not generally. The present Hampshire hog is compounded of the old race, and the Essex, the Chinese, and the Neapolitan, with an admixture also of the improved Berkshire.

We have already stated that a semi-wild breed of pigs are peculiar to the New Forest; they are termed forest pigs, and differ materially from the ordinary stock cultivated by the Hampshire farmers. Though far inferior in size to the true wild hog, these animals exhibit much of the characteristics of that animal, and probably owe their origin to a cross between the wild hogs introduced into the forest by Charles I. and some of the ordinary breeds of his period. These animals are heavy in the forequarters, but light and meagre posteriorly; the withers are high, the ears short, the mane thick and bristly, the colour black or brindled; the disposition is fierce and distrustful, and they display extraordinary activity and acuteness. The troops are headed by leaders, which take alarm at the slightest appearance of danger, and are ready on an emergency to act on the defensive. This forest breed, however, is now rarely to be seen in its purity—in fact, it is passing away, or perhaps rather merging into a more domestic and mingled stock, thereby losing its pristine characteristics. We have previously alluded to Gilpin's *Forest Scenery*. From the same work
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We make the following quotation, relative to the semi-wild forest breed as it existed in his time;* it exhibits a striking picture of the woodland swine half reclaimed, with which we may suppose our great forests were formerly replete:

"We well remember," he writes, "an occasion when we had thrown ourselves down at the foot of a great beech tree, whence we looked abroad, from under its wide canopy of foliage, on a small track of sunshine, which, penetrating an opening in the wood, and falling athwart the ground beyond, gave a broader and deeper effect to the surrounding shadows. There was not a breath of air, and not a sound was audible. Calmly we lay in that listlessness of a dreamy musing, which to an idle mind might seem like idleness, but which the philosopher, student, or moralist, knows better how to appreciate.

"Suddenly a sound like that of warlike music, melllowed by distance, came upon our ears. We started so far up from our recumbent position as to lean upon one arm and listen intently, and not without some degree of awe, being almost persuaded that some wondrous fairy pageant was about to gratify our sight.

"The sound increased, and grew harsher as it advanced; and as it drew nearer—yet nearer—the tramp of what might have been imagined to be elfin chivalry accompanied it. At length, while we were yet listening in mute expectation, the leading boar of a large herd of forest pigs came grunting into view, followed by all the musical members of his harmonious detachment.

"Whether it was the cheering, invigorating effects of the sunshine, or whether there was something particularly savoury in the herbage of that spot, we know not; but the grunting swelled into a loud chorus, their snouts became more and more busy, their ears and tails kept up

* The Rev. William Gilpin was born 1724, and died 1804. He was vicar of Boldre, on the borders of the New Forest, during the latter part of his life; and was eminent for piety, learning, and a most cultivated taste. His works are numerous.
one continuous and joyous motion, and their small eyes seemed to flash back the sun’s rays with unwonted eagerness of expression. It was really an interesting sight; and were it not that swine were the subject of it, we should—and truly—say it was as beautiful as interesting. The creatures were in fine condition, their bristles glittered like silver, their bodies were as clean as if they were as regularly washed and combed as a lady’s lap-dog, and they seemed so full of freedom and happiness, that, while looking on them, we felt all the romance of forest life, and recollections of the merry greenwood.

"Wishing to observe and admire them more closely, we sprang up, but in so doing alarmed them; and off they galloped helter-skelter, sauvé qui peut, with a speed that none of the porcine race, not forest born and bred, could equal; and long after every one was out of sight—vanished in the mazes of the woodland—we still heard their retreating trumpets, gradually dying away until lost in the distance."

Few such truly independent herds now exist; but the forest breed has not lost its original characters.

Lincolnshire is one of the counties noted for an excellent breed of pigs. The old race were gaunt, slow-feeding, unprofitable animals, with heavy heads and flat sides; but the improved breed of the present day are well formed, of moderate size, easily fattened, and produce excellent flesh; they are white, with fine skins, and sparingly covered with bristles which are slender; the ears are erect and pointed; the body long, straight, and round. These pigs, deservedly esteemed, may be fattened to about 45 stones (141bs.), and when at the age of a year and a half, many are found to range between 20 and 30 stones. A cross between the Lincoln and Chinese breed, though of diminished size, is found to attain more rapidly to maturity than the pure Lincoln, and fattens quickly upon a very moderate allowance of food.

Norfolk produces excellent pigs, somewhat smaller
THE IMPROVED SUFFOLK HOG.
than those of Lincolnshire, but closely agreeing with them in character; they are well-formed, fatten quickly, and yield fine meat. Besides this breed, a smaller race prevails in many parts of Norfolk, descended, as it would appear, from the Chinese, which it greatly resembles. These pigs are in great estimation; they fatten readily on a small quantity of food, and their flesh is delicate.

In Suffolk the most generally approved breed is a cross between the Suffolk, Berkshire, and Chinese. These animals are rather small, but compact, short-legged and small-headed; the body is round, and they fatten readily. At the age of a year or a year and a half, many are found to weigh from 12 to 15 score, and produce first-rate bacon. The flesh of the sucking-pigs and of the porkers is esteemed for its peculiar delicacy. The favourite breed in Norfolk is derived from the Suffolk, crossed by the Earl of Leicester, of Holkham, with his friend Lord Western's Neapolitans sixty years back.

Besides this breed, which stands first, there is an excellent cross between the Suffolk and Lincoln; the pigs attain to a considerable weight, ranging from 30 to 40 stones (14 lbs.) and upwards; they are hardy, and fatten readily. Another breed is between the Berkshire and Suffolk, and this has its admirers; it is easily kept in good condition, fattens quickly, and makes excellent bacon. It is, however, longer in the leg and less compact in symmetry than the tri-cross between the Suffolk, Berkshire, and Chinese. The improved Lincolnshire race is much valued in Suffolk, as is also the "Improved Essex" breed, established by Lord Western, and improved by Fisher Hobbes, Esq., Boxted Lodge, Essex, who founded his well-known breed on Lord Western's stock. It is black, short-nosed, deep-jowled, short and thick in the neck, with small sharp ears; the limbs are short and fine-boned, the barrel is rounded, the hams very full, the hair is spare and short, the skin fine; some have small wattles or appendages of skin depending from the neck. These animals fatten quickly, grow rapidly, and yield
very superior meat; as porkers they are admirable, the meat being small and peculiarly delicate. The hogs, when fattened, will sometimes weigh 26 or 28 stones (14 lbs.), often 18 or 20. At Salisbury Royal Agricultural Show, 1857, Mr. Fisher Hobbes exhibited one of his improved Essex among the boars of large breeds.

A modification of this breed is often seen in Essex; the pigs, which are generally black and white—the head and hinder parts being black, and the central portion of the body white—are admirable in contour, with a deep round carcass and fine skin, fine in the bone, and full in the hind quarters. The flesh is excellent. The sows produce fine litters, but are said not to make the best nurses. We did not, however, hear this complaint from any of the Essex farmers, during our frequent visits to Rochford and the adjacent country. We suspect, however, that the Essex breed is delicate and requires care, as indeed do all high-bred domestic quadrupeds.

Sussex possesses a breed very much like the last particoloured race, of which it appears to be a variety. These pigs are well-made, of middle size, with a thin skin and scanty bristles; the snout is tapering and fine, the ears upright and pointed, the jowl deep, the body compactly rounded. These pigs arrive early at maturity, and fatten quickly; the bacon hogs averaging the weight of 20 stones (14 lbs.) The flesh is excellent. Their bone, perhaps, is larger than in the Essex breed; but then the improved stocks of this latter race are remarkable for smallness of bone, and we doubt whether they are more bony than the improved stocks of the old Berkshire strain. The breed is undoubtedly valuable, and well adapted for crossing with the Essex, Neapolitan, or Chinese; but the Sussex breed is black.

Sussex once boasted of a gigantic race of black pigs, known by the name of the Rudgwick breed (Rudgwick is a village in that county), some of which were among the largest swine ever reared in our island. As is the case
with all huge breeds, these animals were slow feeders, and, we may add, "huge feeders;" but they yielded an enormous weight of excellent meat. Nevertheless, they saw the day of their decline and fall; they became more and more influenced by the intercrossings of new breeds, till at length the old stock has become obsolete, its celebrity depending upon records and notices of the last century; but its best qualities are returned by the modern black breed.

Bedfordshire has sent some admirable pigs to the great cattle-shows in London. Nevertheless, the animals could not be called truly Bedfordshire as to peculiarity of breed. They were crosses of various kinds, in which, as it appeared to us, the Suffolk strain was prevalent.

In Shropshire, Gloucestershire, Cheshire, Herefordshire, Oxfordshire, and other counties, the old races of pigs have passed away, and crosses with the Berkshire, and also with the Essex and the Chinese, have taken their place. In short, the change is universal; and even in the southern parts of Scotland, where formerly but few pigs were kept, and those of an inferior sort, excellent breeds prevail, and pigs are largely reared by the farmers.

In the Channel Islands—Jersey, Guernsey, Alderney, and Sark—the pig is an important animal, pork being the staple animal food of the islanders during the winter. It is said to be very delicate, even more so than any in England. Almost every cottager keeps a pig, and is enabled to feed it the more easily, as his garden yields an abundant supply of produce. Pork sells at 4d. or 5d. per pound of 26 ozs.

The Channel Islands breed, once gaunt and coarse, and of French extraction, is now greatly improved, and fattens rapidly. The pigs are kept in sties, and fed during the spring and summer months on butter-milk, bran, potatoes, cabbages, and all kinds of vegetables; in the autumn, almost exclusively upon parsnips. Bacon hogs
are generally killed at about twenty months old, and average from 300 to 450 lbs. Sometimes, however, hogs attain to a much larger size; and instances have been known in which they have weighed 640 lbs., or 80 stones, Smithfield weight, exclusive of the offal.

In the Isle of Man, the native breed closely approaches that of the Orkney and Shetland Isles. The animals resemble the wild boar in miniature, and roam about at liberty; yet they fatten readily, and yield excellent meat. Within the last few years, crosses from England have been introduced, and the plan of sty-feeding has been practised; but not, as it would appear, with much success.

Mr. Rowlandson’s close observation of the results of crossing a single well-bred sow with different boars enables us to account in a perfectly satisfactory manner for the many modern varieties of English pigs which we have just enumerated.

He says, “Some years ago I purchased two sows—white sows, moderately covered with bristles—a cross between the Berkshire and Chinese, containing more of the Chinese than the Berkshire, a circumstance I did not particularly admire, as I always found that when the Chinese blood predominated, frame is sacrificed without a corresponding advantage in the propensity to fatten.

“I put them both to a very fine Neapolitan boar, perfectly black and devoid of hair. Now the sows, as far as could be traced, were descended from white pigs. The result was a progeny of white, of black, of mixed white and black, and also of ‘piglings,’ covered with slightly curled bristles, of a brown or brownish red colour, and streaked down the sides with deep-brown stripes, something similar to the tiger. The white pigs turned out very good ones, matured early, fattened on little food, and were something similar to the best types of the cross between the Berkshire and Chinese, not so large, but larger than their mothers. The black pigs approached their size in character, but had a larger frame, and thrrove better than
any of the other kind. The brown pigs had ears somewhat inclined to be pendulous, were of a larger frame and larger body than the others, took a month or six weeks longer feeding, but when killed were much heavier and larger than the rest. I have always considered," says Mr. Rowlandson, "that these brown pigs were typical of the Berkshire breed."

We will add that the white pigs might have stood for any of the improved medium-sized white breeds, Suffolks, Coleshill, or Windsor; and the black for the Improved Essex, which were produced by crossing the old Essex hog with Neapolitan boars, imported more than forty years ago by Lord Western. Mr. Rowlandson, unfortunately, disposed of these three varieties of pigs, retaining only one young sow, "which at an early period showed all the most desirable characteristics of a good pig—her general form was somewhat similar to her Neapolitan sire, but with fuller cheeks, a snout not quite so long but equally fine—in fact, just the animal that might have been expected at an agricultural meeting as an Improved Essex pig." Having removed to Ireland, he put this sow to a rough black Irish boar. She produced a litter of six young ones; one white, which turned out similar in form to the Improved Berkshires, two were of the red-haired description already noticed, three were black, one being similar to the sire, two like the mother. The two like the mother were remarkable for keeping in good condition on a small amount of food; their progeny was of a larger description, having been put to boars of a large breed—they proved a valuable lot, fattening to 14 stones of 14 lbs. within twelve months.

A second litter from the same sow, with a like coarse boar, consisted of nine pigs: viz. four red-striped, a deep brown approaching black; four black, two of the four being like the mother, and two of a coarser make; the ninth was white. This white was similar to the best type of Improved Berkshire, and attained a large size with ordinary food within twelve months; the reddish-
brown ones did not fatten so rapidly nor attain so large a size as the preceding, but they would have gone on at the time they were killed; the coarse black ones were fed two months longer than the others, but when killed fell short by many pounds of the white pig of the same litter; the two black ones that resembled the mother were fat at nine months. All were fed alike, viz. potatoes boiled and then mixed with a little bran, and finished with ground oats and potatoes. After being taken from the mother and ringed, they were allowed to run on a pasture, and otherwise only sparingly fed. Under this treatment, the two black ones that resembled their mother throve the best—in fact, became half fat; the white pig also did well; the two coarse black ones put in size and bone, as did also the four brownish-red ones, but put on no meat until they were put up to feed, when the brownish-red ones gave the earliest appearance of doing well. “This single litter was typical of the various breeds of (British) pigs, with the exception of the large flop-eared variety.” After the second litter was reared, the sow was put to a boar that precisely resembled her in colour, symmetry, size, and breed; having been got by a Neapolitan boar out of a Chinese and Berkshire sow. The progeny, nine in number, were all black, completely resembling their sire and dam; all that were kept for fattening were killed in the intermediate stages from porkers until they were ten months old, at which time they weighed from ten to twelve stones: they were excellent, whether as fresh or pickled pork, ham or bacon. At ten months it was considered more profitable to kill them, and use the food for younger ones, than to carry them on. “Three more litters were had from the same sow by boars of like character, the progeny in every instance resembling the parents. Sows and boars reared and disposed of for breeding, produced young of similar habits and form, with the same tendency to fatten early. In only one or two instances did the red-haired variety reappear.”
BREEDS AND COLOURS OF ENGLISH PIGS.

The following are the breeds and colours of the boars exhibited at the Royal Agricultural Society's Shows in the years 1854, 1855, 1856, and 1857, at Lincoln, Carlisle, Chelmsford, and Salisbury:

Boars of large breeds.

“North Lincolnshire.” White.
“Pure Berkshire.” Black, with white face and feet.
Ditto ditto. Dark spotted.
“True large breed.” White.
“Cumberland.” White.
Ditto. White, with a few grey spots.
“Yorkshire.” Blue and white.
Ditto. White.
“Improved Essex.” Black.
“Lancashire.” White.

Boars of a small breed.

“Cumberland.” White.
“Coleshill.” (Earl of Radnor’s.) White.
“Improved Leicester and Yorkshire.” White.
“Improved Leicester.” Black.
“Improved Essex.” Black.
“Improved Dorset.” Black.
“Small Yorkshire.” White.
“Suffolk.” White.
“Pure Suffolk.” Black.
“Improved Oxfordshire.” Black.
“Salford Breed.” White, and blue spots.
“Sussex.” White.
Ditto. Black.
“Improved Berkshire.” Black and white.
“Improved Hampshire.” Black.
From this list it will be seen that white is, throughout England, the favourite colour; although the greatest improvement introduced into English breeds has been by dark pigs, viz. the Berkshire and improved Essex, which have been crossed with the dark Neapolitan, almost hairless pig, from the forests of Salerno.

The Chinese, and other pigs from the Indian seas, are of all colours, white, black, red, and variegated; and from the white the white breeds have been doubtless improved without losing their distinctive colour.

We have not thought it necessary or useful to name the breeds or colours of the pigs that have gained prizes at the shows of the Royal Agricultural Society; because, after close investigation, we could discover no rule; each decision seeming to rest on the merit of the animal and the fancy of the judges.

**FRENCH VIEW OF ENGLISH PIGS.**

The Count de Gourcy, an enthusiastic French agriculturist, who has visited England several times, mentions in his "Third Agricultural Tour in England in 1851," that "the English laughed at some French pigs sent for sale to Smithfield market, considering them perfectly worthless:" and he mentions the following farms where the piggeries were particularly well managed.

"Mr. Huttey (of Essex), on a farm of 1,500 English acres, feeds about 1,200 young pigs every year, purchased at four or five months old, at from 17s. to 21s. each, and sold at six or seven months old.

"Mr. Tucker, a silk manufacturer at Stratford, in the same county, feeds nearly a thousand young pigs, bought at about the same price, and sold at the same age as Mr. Huttey's. They are fed at first with meal moistened with the wash of distilleries, but in the last month with meal moistened with water only."

Count de Gourcy describes at length Sir John Conroy's celebrated piggery; but as that is now known to have been a complete failure in a pecuniary point of
view, and has been discontinued since his death, there would be no object in translating his description.

At the Cirencester Agricultural College, in 1851—the system may be different now—a hundred pigs were fed every winter on roots boiled and mixed with bean or pea meal. The breeds were the large white Yorkshire, the Improved Essex, known as the New Essex Neapolitans, and—the most esteemed of all these—"a cross between the Berkshire and Essex."

"Mr. Lawrence (the well-known agricultural attorney, of Cirencester) had on his farm some very fine pigs, the result of a cross between a Chinese boar (a very ugly animal, with an enormous head armed with formidable tusks, and a belly trailing on the ground) and Berkshire sows."

At Boxted Lodge, Essex, Mr. Fisher Hobbes informed the Count that sows of his breed "must be fed sparingly before breeding, to prevent their becoming too fat;" and that he sent them into the fields as soon as the little ones were strong enough to follow their mothers.

"At Mr. Charles Randal's farm, Chadbury, near Evesham, he found the best pigs he had seen in his tour; bred from a cross, first between large white Yorkshire boars and Berkshire sows, and the produce crossed again with Improved Essex boars. They were of good size, gave bacon well interleaved with lean, and were very prolific."

The breed which the Count recommended the French farmers to raise for exportation to the English market, at from five to eight months old, were crossed with the Yorkshire or Leicestershire white sows, Improved Essex boars, or the best Berks or Hants sows.

**The Irish Pig.**

The Irish pig, before 1846, would have occupied an important place in such a book as this. The potato rot changed that part of Irish cottage economy. The pigs of Ireland were under a million number in 1855, and, according to Irish statistical returns, decreasing, while
sheep were increasing. But, according to the returns in 1857, the pigs had increased by about 300,000, and the sheep diminished in proportion; a result to be expected as long as potatoes are the principal crop. As to the breeds, they are at least equal to the average of English swine. Those exported from Cork are often capital specimens of Yorkshire and Berkshire, crossed long ago with Chinese and Neapolitan. The old Irish pig is not a bad mother for suckers; put to a good boar, she breeds and rears her dozen with ease.

CHAPTER IV.
FOREIGN BREEDS OF PIGS.

The pigs of the continent have recently attracted attention, in consequence of French, Germans, Bohemians, and Hungarians, having purchased largely at our most fashionable shows both boars and sows, to improve their native stock. They have some good pigs in France of the same sort as our old English breed, which only want attention to become very fair specimens of the large breed; but it is vain to expect the continuous care required for improving a native breed from a nation of small proprietors living from hand to mouth.

The Craonaise is one of the best, very like a white unimproved Yorkshire. For French use on dairy farms we should recommend the improved Essex as the best cross; and in the neighbourhood of beech forests, so numerous in that country, the Improved Berkshire of the largest size.

The French Government, which meddles in everything—and very naturally, for the people like being governed—might do essential service by extending to hogs the rules established in Prussia as to horses, and not permitting any boars to exist without a permit from a government
FOREIGN BREEDS OF PIGS.

officer; by this restriction, and a few thousand pounds laid out in importing good British pigs of the size preferred by the French peasant, the value of pig stock in that country might be doubled. It would be a great mistake to call the imported pigs "English;" they should be called the "Napoleon" breed. Indeed, we recommend English breeders with a foreign connexion to name their boars Napoleon—it will add something to their value.

Monsieur Leonce de Lavergne, in his Essay on British Agriculture, sums up the difference between English and French, we might add, foreign pigs, in a very effective manner in a very few words. He says:—

"The English pigs are not, on average, larger than ours, but they are much more numerous, and are killed ripe much younger; for in the hog, as in every other English meat-making animal, the precocity sought for by Bakewell is attained. England alone feeds as many pigs as France, without counting those raised in Scotland and Ireland, and very few of these animals are fed more than one year. They belong to the quickly fattening breeds, and, for the most part, of the profitable shape."

The consumption of pork (in the shape of sausages) reared in woods or fed on the refuse of distilleries, in North Germany, is enormous; but greater brutes, more ill-shaped, more greedy, more unprofitable, and more unimproveable, it is impossible to imagine, than are to be found in the herds on the banks of the Rhine; they are more like starved calves or degenerate greyhounds, than domestic pigs; they also are very savage. The Germans pride themselves on their taste and elegance. We remember seeing a letter from a member of the Choral Union, hailing from the filthy, stinking city of Cologne, in which, writing home after visiting England in 1852, he said, "Certainly this people (the English) have no idea of the beautiful or the elegant;" and there was some truth in the observation, looking at our brick streets and pie-crust public buildings; but when we think of the lanky Rhine pigs, of the hog-
sties in which German farmers live, and the general system of dirt and foul smells in German towns, as well as the absence of all taste in villas, cottages, gardens, and parks, we prefer our neat pigsties and rotund pigs, emblems of English comfort, to their gaily-decorated ball-rooms and lanky savage porkers.

In Hungary there are some pigs worth the attention of those who think (we do not) that the English breeds might be improved by a cross with the wild boar, for they have all the constitution and a better form than the real wild breed. The Hungarians have two breeds, which, although long in arriving at maturity, come, when fat, into very good shape. The best kind is the Mangalieza, which is divided into three varieties—the largest is equal in size to our great Yorkshire breed, does not arrive at maturity until it is two years old, has a long, deep carcase, with short legs, pendant ears, and a rather thick hide covered with yellowish frizzled bristles much needed to resist the winter frost and snow. There is a black variety, which like the yellow runs on the open pastures until it is three or four years old, and attains great weight when put up to feed on the waste corn of a farm. English farmers settled in Hungary think well of the qualities of this animal in a country where they grow without expense.

But there is also a small variety, a compact little pig with pointed ears, that fattens with great facility, and is the one best worth the attention of those who find their English pure stock losing constitution and ceasing to be prolific.

The Szalanta is an enormous breed, apparently more valuable for the bristles and hide than the bacon. Swineries are maintained on a great scale in these countries. The large breed of Mangalieza are sometimes called the Milosch breed, because the ex-Servian prince of that name sent twelve to Kis-denoc, in Hungary, in 1833. Now Servia is for pigs what Arabia was supposed to be for horses, and Spain in olden times for
sheep. In Servia the princes were, and may be still, swineherds.

The Silesian and Moravian (Austrian empire) pigs are pastured in summer, and fed also on potatoes and turnips, skim-milk and kitchen garbage; when put up to fat they receive distillery grains, cooked peas, and, above all, maize.

Bohemia has two varieties of the Podolian hog, which is supposed to be the original race of continental Europe; the one, a long-legged, bony brute, which does not even compensate for its ungainly, unprofitable shape by being prolific, for the females have only ten teats; the other variety larger, and lower on its legs, with a broad back and a small head garnished with pointed ears, of which the sow has fourteen teats and rears a numerous brood. These pigs, with a little care and attention, might be brought to a very respectable condition of maturity. Since 1853, the white Yorkshire and black Improved Essex have been introduced into Bohemia on the estate of Count Thun. The cross with the best Bohemians produces an excellent animal, early mature, and more hardy than our naked well-housed breeds. The cross with a black Essex boar is considered to produce a more numerous litter and earlier maturity than the white Yorkshire. The quality and flavour of the lean and fat of both these crosses is said by a learned Bohemian agriculturist to be "exquisite." The Essex is considered the best cross for pork, and the Yorkshire for bacon. In the domestic rural life of Bohemia, as they are chiefly anxious for hams to smoke, and are indifferent about lard or fat, being well supplied with butter from their dairies, they prefer the black breed; while the bacon-curers prefer the white. The same Bohemian writer observes that the two English boars put to the indigenous sows, "ont particulièrement de bons boyaux très propres à faire des boudins;" but whether in this instance "boudins" means black-puddings, or sausages, or chitterlings (for it means all these delicacies) we are unable to say.
In recommending to our foreign friends an English boar or sow, we must never forget that the finest animals degenerate under poor feeding, or in a rigorous climate; while a hardy breed will improve on coarse food in spite of exposure to the weather. Our national character is injured when, with open eyes, we induce an ignorant, wealthy, foreign gentleman to pay a large price for an animal valuable here, but valueless in a rude condition of cultivation and cultivators.

**THE VALUE OF BREED.**

While an animal is growing, it requires and consumes those materials that form the bones (especially phosphate of lime, which forms 15 per cent. of the bones at the birth, and 45 per cent. in an aged pig), tissues, and muscles; and it is only the balance that remains that forms fat. For this reason, those breeds of pigs which arrive at their full growth at the earliest age become fat, on the same quantity of food, earlier than those which require more time to arrive at their full growth. But there is an important difference in the quality, as well as quantity, between an improved early mature and an unimproved slow-growing animal. For instance, if an Improved Essex or Berkshire and a much fatter and longer animal of the old English, French, or German breeds were fed in the same manner, and killed at the same age, and found, when dressed, of the same weight, the difference in value would still be full 20 per cent.

The well-shaped, well-bred pig would present a fine thick coating of firm fat embedded in the cellular tissue. The ham would present marbled flesh, with a due amount of external fat; and the *omentum* would yield a fine leaf of white lard. The roasting-pieces, if cut out for that purpose—such as the muscle running from the neck down to the loin, including the joints commonly called the *sparerib* and *loin*—will be found tender, juicy, and fat.

In addition to these advantages in the improved
breeds, the relative size of the prime pieces and joints—such as the ham, shoulder, and belly, where the desirable mixture of fat and lean ought to be found—is much greater in proportion to the whole carcase than in the bony, lanky, thick-skinned, bristly, unimproved breeds.

In the unimproved large breeds, the enveloping fat will be found of a light grey colour, soft, and flabby, the muscles stringy, and when salted will run up greatly, creating a large quantity of wasteful brine; so much so, that when dry the whole weight will be found to have diminished in a much greater proportion than the same weight of pork from a smaller improved breed. To say nothing of the greater weight of bone and skin in the unimproved, in cooking it will shrivel up excessively, especially in the belly parts; while the meat of the improved breed will scarcely lose an ounce when well cured and boiled.

The cause of the difference is, that, in the matured animal, the cellular tissue, ligaments, &c., have fully developed themselves, and therefore become firm and compact; whilst in the growing animal those portions of the body remain in a softer, more gelatinous state, in order to enable the growing animal to stretch to its constantly increasing dimensions of frame.

But supposing both animals to be of well-shaped breeds, the superiority of the small breed over the large breed will not continue after the latter has arrived at maturity; because, after the smaller pig has arrived at a certain stage, like a small house, it would be full, and further food would be wasted, while the larger breed would have “ample verge and room enough” to spread profitable plumpness over its large limbs and broad frame. For this reason, if you have cheap means of feeding up to full growth, then a large good pig pays better than a little good pig. This is one of the reasons why Yorkshire and Cumberland hams are so good. The larger breed must be kept to nearly two years old before they are fit to kill; and an old pig makes the best hams.
After all, the size of your pig must be determined by your market. In the mining or iron districts of Warwickshire, Staffordshire, Cheshire, and Lancashire, in the Potteries and the manufacturing districts of Yorkshire, the demand is for large fat bacon; in the neighbourhood of London, Brighton, and other watering-places, the demand is for small, delicate pork; and there the small breeds only will go down. For dairies, there seems no pig so profitable as the Berkshire, or a cross of the Berkshire and Improved Essex, or white Coleshill breed. The effect of this cross may be seen as far north as Yorkshire—as far south as Hants. As a cross with a coarse, strong-constitutioned native hog, the Essex is admirably adapted, and has done much for our farmers in every county. Sucking-pigs, as a general rule, must be white, although all pork is of the same colour when roasted, and colour is a mere matter of prejudice.

CHAPTER V.

HOW TO CHOOSE A PIG.

How to choose a pig?—that is the question. To rely on the terms Berkshire, Essex, Suffolk, Improved Yorkshire, Improved Bedfordshire, &c., as guarantees of first-rate qualities, would be folly. In all counties, even those the most renowned for their breeds, there are both good and bad; and even of the best breeds, some are inferior to the others, and ought to be rejected as unfit for becoming the parents of a lineage.

We have seen scurvy-looking animals, both in Berkshire and Essex; but setting these aside as animals from which no man in his senses would think of breeding, still the question remains, How ought he to choose, with the best stock at his selection? The following rules, laid
down by Mr. Rowlandson in the *Royal Agricultural Society's Journal*, are well worth attention, being the result of large and recent experience:—

**Fertility.** — The strain from which the farmer or breeder selects ought to be noted for fertility. In a breeding sow this quality is essential, and it is one which is inherited. The same observation applies to other domestic animals. But, besides this, she should be a careful mother, and with a sufficient number of pigs for a family of twelve at a single litter. A young untried sow will generally display in her instincts those which have predominated in the race from which she has descended; and the number of teats can be counted. Both boar and sow should be sound, healthy, and in fair but not over fat condition; and the former should be from a stock in which fertility is a characteristic.

**Form.** — It may be that the farmer has a breed which he wishes to perpetuate: it is highly improved, and he sees no reason for immediate crossing. But, on the other hand, he may have an excellent breed with certain defects, as too long in the limb, or too heavy in the bone. Here, we should say, the sire to be chosen, whether of a pure or cross breed, should exhibit the opposite qualities, even to an extreme, and be, withal, one of a strain noted for early and rapid fattening.

But what is meant by *form*, as applied to the pig? A development of those points connected with the profit of the owner. In these points high or low blood is demonstrated. The head should be small, high at the forehead, short and sharp in the snout, with eyes animated and lively, and thin, sharp, upright ears; the jowl, or cheek, should be deep and full; the neck should be thick and deep, arch gracefully from the back of the head, and merge gradually into a broad breast; the shoulders should be set well apart at the clavicular joint; the body should be deep, round, well-barrelled, with an ample chest, broad loins, and a straight, flat, broad back; the tail should be slender; the hams should be round, full,
and well developed; the limbs fine-boned, with clean, small joints; and with small compact hoofs, set closely together, with a straight bearing upon the ground. If in perfect health, the animal will be lively, animated, hold up his head, and move freely and nimbly. We do not speak of fat hogs, for they are necessarily sluggish and unwieldy; nor yet of pregnant sows; but of young store-hogs, or of young stock selected for breeding.

The skin should be soft and thin, of a bright pink colour, the neck short, the chest wide (which denotes strength of constitution), broad, straight back, short head, and fine snout slightly curved upwards; and in the large breed there is often a pretty prominent swelling on the snout, between the nasal and frontal bones. The legs and hoofs should be small. The sows should have at least twelve teats. In purchasing a prize animal, whether boar or sow, see that it can walk well. A lump of fat bacon may do to kill at Christmas, but will be of very little use until reduced to breed from; and in the journey and reduction you may lose your pig and your money.

For breeding sucking-pigs there is nothing better than the large English breed (they are prolific, and good mothers) crossed with a white Chinese boar. No other breed will raise sucking-pigs to the same size as this cross; they also form excellent porkers, speedily attaining from 48 to 56 pounds; but if required to be much larger, it will be found to pay better to treat them as stores, letting them graze, or run as "shocks" in the field after harvest, or rooting on the manure-heap, until they are ten or twelve months old, and then put them up to fatten. Still they are not so profitable as the Improved Essex, and do not make such fine bacon as the Improved Berkshire.

The improved Essex, if well fed from the first, arrives very early at maturity as to its frame or bony structure, and is the best for making hobbledehoys of porkers from eighteen to twenty pounds weight, such as are in demand
in the London and Brighton markets; also for making delicate pickled pork, and ham and bacon of moderate size; say from 10 to 12 stone the carcase.

It is, however, objected by some that those of late years became too small to fat without layers of lean, deficient in constitution, and the sows unfertile; so that it is more valuable as a cross to raise and improve inferior breeds, than as stock for the home farm; but this the patrons of the Essex breed will not admit.

The Improved Berkshire may be considered the more useful to a farmer who desires a sort useful in every stage of its growth. It was considered, seven years ago, to take twelve or fifteen months to come to its full growth; but a correspondent (the Rev. T. C. J.) who has been very successful as a breeder and exhibitor, informs us that at present the best strains have early maturity as well as size, and streaky layers of fat and lean bacon.

The Berkshire sow will suckle ten or a dozen sucking-pigs—even more if assisted by artificial means—and is very superior for large ham and bacon. But on this we shall give more information in Chapter VI. ("Will a Pig pay?")

But where labourers are to be fed, it will be found that, irrespective of the cost of feeding, the large, old English hog with its huge flitch of fat bacon will be preferred.

In the mining districts of Warwickshire, Staffordshire, Lancashire, and Cheshire, the huge Yorkshire breed is in demand among those who follow the business of bacon-curing; and a large breed, of a kindly, mellow, easy-fattening disposition, is economical where there is plenty of what may be called scavenging to do, and plenty of coarse waste food for them to consume while growing which would be rejected by pigs of more genteel birth and education.

In a word, in choosing a pig you must consider your climate, your means of feeding, and your market; whether you want sucking-pigs or hobbledehoy pork,
and moderate-sized pickled pork or fresh pork, for a fashionable market, or small hams and flitches for home family consumption, or to manufacture bacon for the manufacturing districts. We shall have a few more words to say on this subject when we consider in brief detail the various persons by whom pigs are fattened. But our next and more serious consideration must be the great question of profit and loss that regulates all money-making trades. To help us in this investigation, we have, in addition to our own collected experience, the help of two celebrated Devonshire pig breeders, and the scientific investigations of Mr. Lawes.

CHAPTER VI.
WILL A PIG PAY?

We are indebted for the following amusing, yet truly practical chapter, to a Magazine, the West Buckland Year Book (North Devon), where it has been founded and carried on by the Reverend — Brereton, in order to teach his pupils a few common things, and stimulate their literary tastes. The author of this "Practical Paper on Pigs" is Mr. John Tyrrell, of New Court, North Devon. "Everyone says, and what everyone says must be true, that pigs will not pay. Every farmer says so, and your thrifty tradesmen's wives, who occasionally fatten a pig and keep an account of the cost declare, 'their pork stands them in a shilling a pound.' Then why do we keep pigs at all? Obviously, as it appears to me, from motives of mere benovolence. What other possible motive can induce us to keep an ugly, dirty, unsavoury (except when on the table), unprofitable animal, but with the view of charitably feeding our fellow-creatures? With this view our British farmers (I glory in being
one of them) breed our pigs, rear our pigs, fatten our pigs, take them to market and sell them at a dead loss. But as charity must have its limits—as no man can prudently exceed a certain sum in alms-giving (that is, preparing his pigs for market)—with the view of making this sum go as far as possible, and so conferring as great a benefit as possible on the public, I submit to my brother-farmers this 'Practical Paper on Pigs.'

"I shall confine myself to colour and size. There never was a good horse, they say, of a bad colour; and so it may be with pigs. Were it my practice to confine my pigs altogether to their sties, and to shelter them in the summer from the sun, I might not object to a white pig. But I have found that, when turned out to grass in Devonshire, the sun has a very injurious effect upon the skins of white pigs; therefore, I have latterly confined myself to black.*

"Most farmers are inclined to select a large breed: 'Aye,' says one; 'there is some growth in that pig.' 'Yes,' says another; 'that's what I call a good farmer's pig, none of your fancy sort.' And yet I very much doubt if they are right.

"The native pigs both of England and Ireland were of a large breed and without any great aptitude to fatten. Our improved breeds have been produced by judicious crossing with the Chinese and Neapolitan, which have even too great a tendency to turn food into fat; the more the breed we select takes after these latter, the more profitable, in my opinion, we shall find them; and that, in nine cases out of ten, the same quantity of food, judiciously given, will add more to the weight of two pigs of a small breed than to one of the larger (unimproved) breed; while the quality of the increased weight

* "A couple of Improved Berkshire, exhibited by the Rev. T. C. James at Chelmsford, weighed twelve score each at seven months old, and with that weight were of such good constitution that they were well up on their legs; but they had walking exercise every day while fattening."—Editor, second edition.
will be greatly preferable in the small breed, and fetch a higher price in the market* [for pork, fresh or pickled. Edit.]

**Breeding.**

"Sows should be at least two years old before they are mated. They are not full grown until five or six. High-bred [especially if allowed to get too fat for want of exercise—Edit.] will often not breed at all, or at any rate have only half the usual number of pigs. Where, therefore, only one or two breeding sows are kept to eat up the waste of the farm [and produce suckers and small porkers], it may be well to be content with a "farmer's sow," but on all occasions obtain the services of a first-rate boar, especially for the first litter, inasmuch as it is said that whatever number of litters a sow may have in the course of her life, they all, to some extent, take after her first mate. 'Oh that hallowed form is ne'er forgot,' &c. But those who breed on a large scale should spare no trouble or expense in obtaining the very best animals, both male and female, that can be procured.

**Farrowing.**

"By all means arrange it, if possible, that your sows farrow in March—not earlier, on account of the very cold weather in December, January, and February—not later, lest you lose the chance of a second litter before the cold weather sets in.

* The Rev. T. C. James, observes to us on this:—"The small breed is very well for porkers, but not for the fitch. A good little animal is good; but we want a good and big animal. The 'Improved Berkshire' realizes this desideratum, as it realizes the highest price from the bacon-curers, cuts up wide over the back, well interlarded with fat and lean. It is also more free from lameness than any other breed. The great white Yorkshire breed, which has been exhibited at the Smithfield Club Shows, nine and a half feet in length, yet not half fat, must have consumed more barley than half the west country farmers grow on their farms."
"To be sure, the Royal Agricultural and the Bath and West of England Societies offer prizes for a pen of sows not exceeding six months old in June or July, farrowed consequently in December or January; and to win these prizes the pigs must be comfortably bedded during the inclement weather in woollen rags or cotton waste, and clothed in Jersey jackets, which may be obtained from those union workhouses where they teach the elegant and useful accomplishment of crotchet work, and do not teach sewing, baking, cooking, washing, digging or hoeing.

"But I strongly recommend the practical farmer not to breed too early in the spring or too late in the autumn. The latter is by far the more serious error. You may protect your very early pigs for a month or two, and then they will have a summer's run before them, but a litter late in autumn is seldom worth rearing.

"Your sow about to farrow should be separated from the herd some time before parturition. You otherwise run the risk of her being injured and bringing forth dead pigs.

"The sty should be twelve feet by ten, with a strong pole parallel with the walls, six inches from the ground, and as much from the walls, to leave room for the little pigs to escape being lain upon when the mother lies down to suckle them. The straw should be cut short. When the sow is of a valuable breed and careless of her young, I have sometimes placed the young, wrapped in a blanket, in a cask half filled with straw, presenting them frequently to the mother to be suckled for two or three days, until they had acquired strength enough to avoid being lain upon.

"While suckling her young, the sow should be exceed-ingly well fed.* She should be turned out of her sty for a little exercise for a short time daily, even within a few hours after parturition. When the young begin to take

* Mutton broth while or immediately after farrowing a long litter is a good thing.—Edtr.
food from the trough (which they will do at two weeks old), they should, where there is a dairy, be supplied with milk; oil cake may be advantageously boiled in the food, both for mother and young. At about two months old the young should be weaned. In my neighbourhood they invariably separate the mother and young before sunrise on a Sunday morning, with the view of the sow having young again at the earliest possible period, about seventeen weeks from the day of weaning. Immediately after weaning, the sow's food should be reduced. If kept too well, her breeding will be retarded; but when decidedly in pig, she should be kept in good condition.

FEEDING.

"By feeding, I mean, not merely fattening, but the proper mode of nourishing the animal from the hour of its birth till the day of its death. For the first six months the young pig must be fed as well as possible on food that will make more bone and muscle than fat. Therefore, I should withhold linseed, which contains three times as much oil as the same weight of oil cake, and should give them oats and bran in preference to either Indian corn or barley meal. After six months, a pig for the next twelve months should merely be kept in growing condition, so as to be strong and healthy. Every ounce of fat laid on growing animals previous to their being put up to fatten is a dead loss. [No; a pig without fat is a disgrace.—T. C. J.] Grass in summer is the natural food for such pigs. I have at the present moment, December 24, a dozen sows, from fifteen to twenty months old, that have tasted nothing but grass for six months, and are still in the field with the shelter of only a linhay, but amply supplied with straw to run into when they please. In winter, the grass failing, the pig would turn up the ground in search of roots—then it is upon roots we must feed him. In November I took in all my pigs under nine months old, and from that
period have been keeping them in growing condition on roots and bran.

"As the spring advances they will have vetches, after that their summer’s run on grass, and at the end of the year will come in for breeding sows—that is, as many of them as will breed early; many of the highly-bred animals will decline to breed at all, or delay to a period too late for the farmer’s purpose. Sows ascertained to be barren, after the completion of the second year, will share the fate of the majority of their brothers, and be fattened for the market.

"I don’t wash the roots I give my pigs—it may be right to wash for men and sheep who do not eat roots in a state of nature [and have to ruminate]; but as hogs in a state of nature find roots for themselves deeply buried in the earth, and I have never once known a tame pig take a cake or root to a stream to wash them—down they go, earth and all. I question if earth be not a proper condiment for a sucking-pig’s digestion. My orders are for the swineherd to throw some clay into each of the sties daily [Mr. Lawes cured two sickly pigs by giving them a mixture of coal, salt, and superphosphate—see chap. on Chymistry of Pig Feeding]. My plan with roots is this—The unwashed carrots or man-gold I cut up small, and mix in the proportion of one hundred weight of bran to a ton of roots. Bran contains in the same weight more than any other meal of the peculiar nourishment that is fitted for growing animals; the bran I mix well with the cut roots in a tub, or on a brick floor; it soon begins to ferment, and this is, I think, a substitute for cooking. [Pulping the roots would be more effective than slicing, to produce fermentation; but according to the Reverend T. C. James’s experience, “Steaming the roots and mixing the liquor and the roots with bran produces one third more profit,” which, of course, pays well for the fuel.—Edrt.]

"I should confine sows to this mixture and to grass and vetches, and except when in pig or suckling, not feed
them more highly—even carrots are too nutritious for a sow intended for breeding, and she must be kept on mangold or swedes and bran.

"Well-bred pigs will pay, I think, at least as well as sheep, for being depastured during summer on grass. I put up sixteen pigs, weighing about four stone each, one half on carrots and bran, the other half on mangold and bran. A ton of carrots and a hundredweight of bran produced in eighteen days an increase of ninety pounds—deducting, in each case, one-sixth for offal, estimating the remainder at 10s. a score, and deducting 5s. 6d., the value of the bran, one lot paid me £1 12s. a ton for carrots, the other £1 6s. 6d. for a ton of mangold. During this period they consumed above sixteen pounds daily, and increased in weight upon the carrots ten ounces, and upon the mangold eight ounces. During a second period of sixteen days they consumed daily twenty-five pounds each, and increased upon the carrots fourteen ounces, and upon the mangold only seven.

"This mixture of bran and roots, preferring carrots, when to be had, to mangold, may be continued when pigs are put for fattening, gradually adding Indian, or barley, or oatmeal. Frequent changes of all kinds of food will admit the following process.

"To learn how long you can increase your meal with profit, weigh your pigs weekly, and set their increased weight against their increased cost.

"Last year I put up twenty pigs to fatten upon roots, and a large proportional quantity of oat and barley meal. During the first fortnight the increased weight, compared with the food consumed, paid me 9s. 6d.; the second fortnight, 4s. 6d. In the third period of three weeks, they cost me sixteen guineas, while the value of their increased weight was but eight guineas. What happiness for a farmer to think he has bestowed eight guineas in actual charity to pig consumers.

"Pigs are apt to be infested with vermin. If found, they should be thoroughly well washed with soft soap, and
exceedingly well dried—they may be frequently dry-brushed with advantage under any circumstances.* A pig put to fatten in a thoroughly clean state need not be put to the weekly annoyance of being washed and perhaps not effectually dried.

MANURE.

"The ox walks off to market with his whole carcase—bone, muscle, fat, and offal—containing an immense quantity of mineral ingredients of the soil, which can only be replaced by the re-introduction, at a considerable expense, of artificial or other manure. The sheep does the same, and half the live weight of a sheep is offal, which, with the carcase, is wholly lost to the farm. The pig is most frequently killed on the farm, and the whole of the offal left behind; and then a pig carries away a very small portion indeed of bone and muscle compared with his fat. And that fat is almost exclusively composed of carbon, derived principally from the atmosphere, and which need not necessarily be restored, provided the manure made in producing that fat be applied to the soil, and the young plants stimulated thereby to re-imbibe from the atmosphere the same amount of carbon.†

"With tolerably good land, and no lack of capital, a farmer cannot do better than cultivate white crops alternately, and, with a moderate dairy, confine his stock exclusively to pigs! Let him consume his oats, sell off both wheat and barley, and buy Indian corn and bran. Indian corn is about the same price as barley, but sixty instead of fifty-two pounds to the bushel. A bushel of barley-meal is generally supposed to add ten pounds to the weight of a pig: I have found in my latest experi-

* Dressing once a week with oil is an effective preventive to pignic.
† Professor Voelcker says, "Horse-dung and sheep-dung are about equal, then cow-dung; last, hog-dung." Fat is of no value as manure."
ments that a bushel of Indian corn produced an increased weight to a pig of fifteen pounds.”

**THE COTTAGER’S PIG.**

Heartily do we agree with the Dorsetshire squire, whose words (at an agricultural dinner in 1857, where the labourers were called in to drink the toasts in sound ale) we have taken for the motto of our title-page. “I prefer the grunting of a hog in a cottager’s sty to the song of a nightingale, and I think sides of bacon the very best furniture of a labourer’s cottage.”

The speaker, Mr. Sturt, has practised what he preached; and added a good garden to the many capital cottages which he has been for years past building on his estate; a worthy example in a country where it is difficult, if not impossible, to imitate that excellent landlord and worthy nobleman the earl of Yarborough, who, in thinly-populated North Lincolnshire, has done his best to secure for every labourer on his estate a cow’s grass as well as a pigsty; for if there is a cow, the pig follows naturally.

It will scarcely be believed in 1857, that in 1842, Mr. Edwin Chadwick, C.B., ventured to state, in his first sanitary report, that “a large mass of evidence,” how collected he knew best, “supported the opinion of one of his witnesses, that pig-keeping and cow-keeping were injurious to the condition of the labourer.” “That the labouring man pays more dearly for his bacon than he

*“The chief merit of Indian corn is its fattening properties; it is richer in fat-forming matters than almost any other description of food. I have recently discovered that the ready-made fat in Indian corn amounts to from five and a half to six per cent. You should not feed animals entirely with Indian corn, for the flesh-forming matters in Indian corn are small. Bean-meal supplies the deficiency. Five pounds of Indian corn to one pound of bean-meal is a mixture which contains the proportion of flesh-forming and fat-producing matters nicely balanced.” — *From Professor Vodcker’s Lecture at Exeter, 1857.*
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would if he purchased it ready made." "That a pig could only be kept on the produce of such a piece of land as a labourer could not well cultivate whilst he attended to his other duties." "That the possession of a pig created a temptation to steal." "That a labourer had best depend on his wages alone"—that is to say, have neither the amusement of a vegetable-ground and pig, nor the savings' bank.

In fact, Mr. Chadwick desired to abolish all pigsties and gardens, and compensate the poor serfs with—a plug water-closet!

Fortunately a reaction has put an end to Mr. Chadwick's "brief authority;" and most landowners like to see a pig growing into money in the labourer's sty—even if it does exhale a Spice Island perfume.

A lawyer, hatching schemes of place, power, patronage, and pension, in Lyon's Inn, could not sympathize with the pleasures and the hopes of the hard-working labourer who, by denying himself many a pint of beer and many a fragrant whif of 'bacco, by extra hours' work and close economy, has saved enough to invest twenty shillings in a porker (one of the numerous offspring of a vast sow of village reputation), who has built a sty with his own hands, and set his whole family to work to feed the grunting stranger, from the eldest lad who wheels the barrow laden with a cask for "wash," down to the petti-coated couple of infants who toddle forth hand-in-hand to collect sow-thistles or acorns. The future C. B. could not approve of the pleasant Sunday evenings, when sitting on the rough pale of the home-made sty, surrounded by his bread-fed young ones, the father, smoking his Sunday pipe instead of reading a sanitary pamphlet, goes into raptures with the missus on the admirable form, the pork making propensities of his one specimen of farm stock, discourses on the broad sides of fat bacon (to be eaten with home-grown cabbages), into which the pigling is to grow, or while pleasantly scratching the grunter's rump or ears, makes all the children's
mouths water with the promise of a feast of black-puddings, chitterlings, fry, and even roast pork. The lawyer-commissioner, who would prefer seeing the happy epicurean group gravely discussing one of his blue books on the value of sewage manure, would be shocked at the wastefulness of the lending system which goes on among cottage pig-owners; the exchange of presents of chitterlings or pigs' liver, under which each village boy comes in for a share of the fun of a pig killing and holds, as it were, a joint-stock interest in all the hogs of the village.

However, as we don't share Mr. Chadwick's opinions on the heinousness of allotments and pig-keeping, we will proceed to explain the best system a cottager can pursue to make his pig pay.

In the first place, the cottager should not attempt to keep a breeding sow, unless he has access to some extraordinary resource for feeding her. A sow may get a sufficient living on a waste or along green lanes, in charge of a small boy, until she is in pig; but a sow that is to bring up a numerous healthy brood must live well, both before and after farrowing. Nothing but the wash of a good dairy will keep a sow in condition with a brood sucking at her night and day; and if the sow starves all the piglings starve. Now to rear pigs profitably, they must never know want from the hour of their birth to the day of death—if at three weeks old they are starved, they never recover or come to any good. Nothing less than whey or skim milk well thickened with meal will keep a sow and her brood in good heart, and that must be continued for at least ten weeks: then there is the expense of weaning—that can't be done without cow's milk of the best, well thickened too with Indian or barley meal. No; it is safer and cheaper to buy a well-bred pig at twelve to sixteen weeks old, which is able to thrive on the refuse the industry of the cottage family can gather, as well as to graze along the wastes and green lanes. The old, slow breeds require from twelve months to fourteen months to get to perfection and be ripe for
making the best bacon; but an Improved Berkshire or Yorkshire, Essex, or Sussex, of medium size, will be as ripe at seven or eight months as the old-fashioned sort at double that age.

It is the object of the cottager to kill in the winter, when the cold weather has fairly set in; but he cannot always purchase at the most profitable age, because the price for a pig which has only four months to run before being ripe for killing, may be more than he can find in cash, and so he may have to buy a younger one of inferior kind. But cottagers should always keep in mind in fattening, that time is money, and that it is worth while to make an effort to get a hog that will pay in meat, for every morsel of food; a very young one consumes time and food in making bone.

The finishing or fatting must be done by degrees, and with solid food, barley meal, Indian meal, peas (not too many), bran, with good wash; for bacon, fed on grass and roots, boils away to grease.

Mast of beech, and acorns, when collected cheaply, do very well for feeding growing pigs, but in this country quite spoil bacon if used up to the last. We presume that in southern countries the acorns contain more sugar than in our colder climate.

A cottager's pig cannot be too fat, but he must be fatted by degrees, or will be liable to surfeit. How to do this best will be found in our chapters on "Does a Pig Pay?" and on "The Chemistry of Pig-Feeding." The cottager must remember that the dung of a well-fed pig is much more valuable than of a half starved one. It is a good plan to have the pig manure mixed with the contents of the privy, and well covered with ashes or earth until wanted for use.

A pig should be made quite fat for flitches. "If he can walk two hundred yards," said old Cobbett, and no one understood cottage economy better than he did in his day, "he is not fat." Let him eat as he sits. Lean bacon is the most wasteful thing any family can use—for,
says the same plain speaker, "the man who cannot live on solid fat bacon, well-fed and well-cured, wants the sweet sauce of labour." But then it must be bacon, the effect of meal and peas (not beans), and not of whey, potatoes, or messes of any kind.

About Christmas, in cold weather, is the time for killing a bacon pig—if the weather is very mild it is better to wait, and push on the fatting a little farther. It will be found cheaper to send for a butcher and pay him a shilling, than to trust to a new hand for killing a pig. Scalding is the usual mode of taking the hair off—but singeing is a much better plan. Scalding slackens the skin, opens all the pores, makes it loose and flabby by drawing out the roots of the hair. Singeing tightens the skin in every part, contracts all the sinews and veins in the skin in every part, makes it protect the meat better, and the flitch more solid. The reputation of the Hampshire bacon is partly due to the practice of singeing prevailing in that county, which makes the meat better.

As the hair is to be burned off, it must be dry, and care must be taken that the pig be kept on dry litter for some days previous to killing. When killed he is laid upon a narrow bed of wheat straw; not more than two or three inches thick, and not wider than his carcass; he is then covered thinly with straw, and a light put at the end toward which the wind first blows, so as to carry the flame and spread it regularly over the carcass—it will require two or three coverings and some knack to burn off all the hair without burning any part of the skin. When the hair is all burned off, the pig is to be scraped clean, but not touched with water; when one side is finished, the carcass must be turned and the other side treated in like manner; this work must be begun and finished early on a moonlight morning before dawn, as you cannot see so well in the daylight as in the dark whether the hair is burned off; of course singeing does not do for fresh pork. The entrails are taken out next, and here pig's fry, black- puddings, chitterlings, and
materials for sausages; something for broth, as well as to fry. Now is the time for making a present, or repaying a kindness to a friend. The next step is the cutting up, and there again is a feast of pork for roasting and boiling, and, if not considered extravagant, for pork-pies.

The house is filled with meat, souse griskins, blade-bones, thigh-bones, spare ribs, chines, belly pieces, cheeks. And the good wife has something to do in rendering down the lard.

The cutting up is a butcher's business, but every sensible labourer's son will look on and learn how to do it himself. We have told in a separate chapter, "How to cut up a Pig," for the benefit of colonists who may have to turn Jacks of all trades.

But every cottager should know how to preserve his own bacon; so we give, out of many receipts, Cobbett's, which is plain and sensible:

"Take the two sides, or flitches; rub them with the best salt on their insides, and then place them one on the other, the flesh side uppermost, in a salting-trough, which has a gutter round its edges to drain away the brine. The flitches must be always dry while curing; if they lie sopping in brine, they will become, not savoury bacon, but bad pickled pork; therefore change the salt often; it is cheap enough, while good bacon is dear. Every four days change the salt; let it melt and sink in; but let it not lie too long. Change the flitches, too, putting that at the bottom that was at the top. Do this twice. The time for finishing the flitches depends on the thickness of the flitch and the state of the weather; the salt takes more quickly in damp than in dry weather. The place for salting should be like a dairy—cool, with a free circulation of air. A close place, even although cool, will rapidly taint meat. Ventilation is equally necessary for live creatures and dead meat. The flitches of a hog of twelve score, in average weather, neither very dry nor damp, will do in six weeks."

Smoking.—Bacon is smoked in many parts of the
country, in order to make it dry. There is a good deal of knack in the operation; and, where you can, the best way is to get some experienced hand to show how it is done. A wide chimney is needed, where the flitches can be hung high enough up, and yet not be exposed to rain. The smoke must be of wood—oak, beech, ash—but not of pine or deal. Over-smoking makes bacon rusty. Before smoking, the fat side of the flitch should be well covered with the sawdust of some dry wood—not deal or fir. Bran would do, and form the needful crust. A flitch should be dry, yet not too dry. When dry, instead of hanging them up, some people lay the flitches in a wooden box, one by one, carefully buried in wood ashes, peat ashes, or even very dry sand, or anything else that will keep out the air; each flitch to be covered separately. If the ashes become damp by imbibing the salt, they must be taken out and replaced by other dry material.

All this will take time and trouble; but it will be well worth it; for "bacon is always ready, as good hot as cold, in busy times demands the pot only to be boiled once a week, has twice as much strength in it as any other thing of the same weight, and, in short, has in it every quality that tends to make a labourer’s family able to work well." But it must be well fed. One pound of well-fed bacon will weigh as much as a pound and a half of slopped bacon, when they both come out of the pot.

In a word, no cottager’s allotment is complete without a pigsty and a good pig; for the pig, first, eats all the refuse; secondly, supplies three or four loads of good dung; and, thirdly, gives not only a relish, but a great addition to boiled cabbage, peas, and beans. Beans without bacon boiled with them are positively unwholesome; while a very large cabbage, cut in half, then tied in, and with a bit of fat bacon the size of a lemon in the middle, and well boiled, is a dish for an emperor—hungry as ever emperors are after shooting or hunting.
CHEMISTRY OF PIG-FEEDING.

To recapitulate—the cottager should have,—
1. A pigsty, well-drained, well-ventilated in the sleeping compartment, warm and perfectly dry.
2. A well-bred pig. A spayed sow is the best—big enough for flitches.
3. A wife who has education enough, or wit enough to learn how, to cure and cook the bacon; even although she may not be able to do crotchet or Berlin wool work.

CHAPTER VII.

THE CHEMISTRY OF PIG-FEEDING.

Having thus far furnished our readers with a compilation of the opinions of the best practical authorities on pig-rearing and feeding—we think it will be useful to show how strongly the result of the experience of intelligent men has been confirmed by the recent investigations of a scientific agriculturist.

In 1851-2, with the view of ascertaining, among other points, the comparative value of various kinds of food used for fattening pigs, Mr. J. B. Lawes, of Rothamsted, Herts, the eminent chemist and manufacturer of superphosphate of lime, undertook a series of experiments on a large scale, recorded in a paper illustrated by a series of elaborate tables, which occupy upwards of eighty pages of the 14th vol. of the Journal of the Royal Agricultural Society. This paper, of the highest possible value to the scientific agriculturist, few plain farmers or fancy pig-feeders would have the courage to read, or would be able fully to understand, if they did. We shall, therefore, endeavour to give the results briefly and plainly; they fully confirm the opinions of the most successful pig-feeders.
The food employed in these experiments was composed as follows:—

1. Equal weights of beans and lentils.
2. Indian corn.
3. Bran.

The food was accurately weighed; and the animals were put into the scales every fourteen days.

For the first series of experiments, forty animals, as nearly as possible of the same character, and age about ten months, were purchased, and divided into twelve pens of three pigs each, and were all fed alike for twelve days, changed from pen to pen, and the unruly ones whipped, so as to put down the tyrants and enable them all to start fair in the feeding race for weight. When fairly started, twelve dietaries were prepared from three standard food-stuffs, arranged as follows:—

Pen 1. Bean and lentil mixture, an unlimited allowance.
Pen 2. Two lbs. of Indian corn per pig per day, and an unlimited allowance of the beans and lentils.
Pen 3. Two lbs. of bran per pig per day, and beans and lentils unlimited.
Pen 4. Two lbs. of Indian corn, two lbs. of bran, and the bean and lentil mixture unlimited.
Pen 5. Indian corn alone, unlimited.
Pen 6. Two lbs. of beans and lentils, and unlimited Indian corn allowance.
Pen 7. Two lbs. of bran per day, and unlimited Indian corn allowance.
Pen 8. Two lbs. of bean and lentil mixture, two lbs. of bran, and Indian corn unlimited.
Pen 9. Two lbs. of bean and lentil mixture, and bran unlimited.
Pen 10. Two lbs. of Indian corn-meal, and bran unlimited.
Pen 11. Two lbs. of bean and lentil mixture, two lbs. of Indian corn, and bran unlimited.
Pen 12. Bean and lentil mixture, Indian corn-meal and bran, each separately and unlimited.

This food was duly mixed with water. The animals were fed three times a day; viz., early in the morning, at
noon, and at five o'clock in the evening. The limited food was mixed with a small quantity of that given ad libitum in the first two feeds of the day. Great care was taken in the management of the supply of food, both that the troughs should generally be cleared out before fresh food was put into them, and that the pigs should always have a liberal supply within their reach.

In one of the pens two of the pigs having become unwell from large swellings in their necks, which affected their breathing, a mixture was prepared, consisting of 20lbs. of finely-sifted coal-ashes, 4lbs. of common salt, and 1lb. of superphosphate of lime, and placed in a trough. The pigs devoured it with eagerness; and, from this time, the tumours began to diminish, and entirely disappeared in six weeks. Three pigs consumed 91bs. in the first fortnight, 61bs. in the second, and 91bs. during the third.

Three sets of pigs, each divided into twelve pens of three pigs each, were devoted to three series of experiments, with the various quantities of the food mentioned; in one series barley-meal taking the place of Indian corn, and the third series being devoted to the trial of dried Newfoundland codfish—an article which could be supplied in large quantities at a moderate price, in connection with the other food named. The amount given varied from 11b. to 21bs. of codfish per day. It was in all cases boiled, and a portion of other food mixed with the soup thus obtained.

The following are the more simple of the conclusions at which Mr. Lawes arrived:—

Indian corn or barley meal with a limited supply of bran is very good food, the bran adding to the value of the manure.

Where the pigs had unlimited access to three kinds of food, viz., the highly nitrogenous pulse mixture, the non-nitrogenous Indian meal, and bran which is moderately nitrogenous—they gradually discontinued the proportion of their consumption of the first, as they approached
maturity, and throughout only consumed five per cent. of bran.

The average consumption of corn per pig per week was 60lbs., or about 9lbs. per day, which produced 10 to 12lbs. of meat per week, or about 1½lbs. per day.

There was a very rapid decrease in the rate of consumption of food to a given weight of animal as it fattens.

The nearer a fattening animal approached maturity, the greater was the proportion of fat in the gross increase obtained.

Indian corn and barley meal contain less than two per cent. nitrogen, bran about two and three quarters per cent., beans and lentils about four and a half per cent., and dried codfish about six and a half per cent. Dried codfish contains less than one per cent of fatty matter, beans and lentils two and a quarter per cent., barley meal about the same, and Indian corn and bran about five per cent.

It was found that—

"The larger the proportion of nitrogenous compounds in the food, the greater was the tendency to increase in frame and flesh, but that the maturing or ripening of the animal, in fact, its fattening, depended very much more on the amount of 'certain digestible non-nitrogenous constituents in the food.' It also appeared that some of the cheaper highly nitrogenous foods would produce a given amount of gross increase more economically than the expensive ones (peas, beans) which are usually preferred by pork-feeders.

"If the amount of gross produce in meat in return for a given amount of food, of a given money value—is alone to be taken into consideration; then, in addition to roots, wash, &c., it would be most advantageous to rely for fattening upon highly nitrogenous foods, such as dried fish, or animal refuse, or leguminous seeds, beans, lentils, and the like, because not only would the weight be obtained at less cost than by the use of cereal grains,
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but the manure—the value of which must never be lost sight of in calculating the economy of the feed process—would be much richer than if the latter were employed. But it is not a large amount of gross increase that makes the farmer's profit upon his sties. When pigs are fed freely upon highly succulent food, such as cooked roots, the refuse of starch herbs, and the like, they are frequently found to give a very rapid increase. But pork so fed is found to sink rapidly in the salting process, and to waste considerably when boiled. And although the first batch of pigs so fed, may fetch a good price, their character is at once detected, and the market closed against a second sale.

"On the other hand, when pigs are fattened upon the highly nitrogenized leguminous seeds—peas being, however, much less objectionable than some others—the lean is hard, and the fat wastes in cooking. Fish, flesh, and strong oil matters give the pork a rank flavour.

"Finally, it is the interest of the farmer to use highly nitrogenous leguminous seeds, and even refuse flesh, if at command, during the earlier and growing stages of his bacon hogs. But if a constant market is to be secured for pork, barley meal or other cereal grain must supersede everything else as fattening proceeds." Thus Mr. Lawes confirms Mr. Tyrrel, and gives us a golden maxim for making a pig pay—a little bran or bean-meal, and plenty of Indian corn.
CHAPTER VIII.

SUCKING PIGS—BACON HOGS—DAIRY PIGS.

Sucking pigs are usually killed at the age of three weeks or a month old. They are, of course, unweaned, taking little or nothing but the mother’s milk; therefore, respecting their diet, a few remarks only are required. Sucking pigs bring considerable profit. A dairyman, or miller, or farmer, keeping three breeding sows, each of which brings him ten pigs twice a year (that is, sixty sucklings), may dispose of twenty-two or twenty-three of these, at the age of three or four weeks, for the gross sum of about £10., at least in the neighbourhood of London, and some other of our larger towns. Each sucking pig will weigh from nine to fourteen pounds when dressed, according to the breed, and sell at the rate of 10d. or 11d. per pound, sometimes even 12d. This sum tells in well for the purchase of provision for the store lot and the breeding sows.

Although a "sucking pig" ought to live on its mother’s milk for the first fortnight or three weeks, yet it often happens, especially when the litter is numerous, that the sow becomes over drained, and too weakly to supply her brood with a due degree of nourishment. In this case they must be fed; and if they be ten days or a fortnight old, little difficulty will be experienced in supplying their wants. It is true they will not be able to feed; but warm cow’s milk must be given them three or four times a day, by means of a common tea-pot, the spout of which may be covered with wash-leather. At the same time the mother ought to have nutritious and succulent diet, in order to keep up her strength and increase her flow of milk. In the course of six or eight days a small portion
of flour or barley-meal may be added to the milk; and after that potato-flour, mashed carrots or turnips, boiled cabbage-leaves, &c. In a very short time they will eat of themselves, and should then be supplied with little troughs, so placed as to be secure from the depredation of older animals, in which their milk and vegetable diet should be put at stated intervals. They will run after their accustomed feeder, nay even intrude into the kitchen or cottage, and become perfectly familiar. One of the most beautiful and fertile sows we ever knew was taken from its mother, and reared up by hand, from the age of about ten days or a fortnight, by the wife of an industrious cottager in Gloucestershire. She carried it down from London (where she obtained it as a present), per railway, in a little basket on her knees. It was of the Chinese-Berkshire breed.

Now, as regards the weaning of pigs, this change may be effected without much trouble, between the age of seven, eight, or ten weeks. The process, of course, is gradual; for though the young brood be accustomed to the trough, still they will from time to time run to the mother and attack her dugs, now no longer replete with a full flow of milk. Here the mother's condition must be consulted, and the mode of weaning must be managed accordingly. An abrupt separation between the young animals and their dam is not, generally speaking, advisable. It should be done by degrees, in accordance with the condition of the dam and the aptitude for trough-feeding displayed by the young, always supposing that a good diet of lukewarm skim-milk, slightly thickened with meal or bran is prepared for them. At first they may be allowed access to the mother once or twice during the day, and also during the night; afterwards they may be kept apart from the mother during the day, and having been well fed before bed-time, they will trouble her but little during the night. In a few days they may be entirely separated from the dam, to whom the boar may again be admitted.
The food of the young pigs should consist at this time of skim-milk, whey, or butter-milk, with potato-flour or barley-meal; and they should be allowed the run of a paddock or grass field during the middle of the day, or free admission into the straw-yard. They will there exhibit their instinctive appetites, and gambol about, exercising their limbs; and as they increase in size, growing up strong, vigorous, and well formed. Their sleeping place should be delicately clean, provided with a sufficiency of good straw, and impervious to wind and water; and food should be given them early in the morning, two or three times during the day, and in the evening before going to rest. Clean water should always be accessible for drinking.

At this time the young males intended for porkers or bacon-hogs, and the females, except one or two selected as breeders, should be castrated or spayed. It is best to have these operations performed when the animals are from four to six weeks old; at a later period the danger is increased. The after-treatment is very simple. They should be confined for a few days in a warm sty, or restricted to a straw yard, and fed upon skim-milk or whey, with a little meal. The wounds generally heal rapidly.

It not unfrequently happens that sows, after having produced two or three litters, are put up in a sty, in order to fatten for the produce of bacon. It will be necessary to have them previously spayed; at least, they will fatten much more quickly after this operation, although there is considerable risk in it. As it respects sows of the age of six or seven years, or when a decline in the reproductive powers is manifest, by the decrease in the number of young produced at each parturition, the necessity of this operation is less required. Some breeders make it a rule to spay their sows, however good as breeders, in the second or early in the third year, and fatten them as quickly as possible for the butcher.

Ringing is another operation which pigs have to
SUCKING PIGS.

undergo, which is generally deemed necessary in order to prevent them from using their snouts with due effect, not only in the field, but in the sty, the pavement of which, if of brick, they would soon demolish, a purchase upon one brick being once obtained. But the pavement of the sty should bid defiance to their endeavours; and as for the field, if they cannot there use their snouts freely, half the benefit of turning them out is lost.

The ringing should not be performed until after the pigs have recovered from castration. As the animals grow, a repetition of this process will have more than once to be repeated; but on no account on a pregnant sow, as the pain is not unlikely to cause abortion. Her nose-ring ought to be looked to before the boar is admitted, and its security ascertained.

PORKERS.

Supposing the brood to be weaned at the age of eight or nine weeks, those destined for porkers may be allowed the range of the paddock or straw-yard for three or four weeks, being at the same time regularly fed on the refuse of the mill and dairy. Where, as in the case of market-gardeners and other such, a degree of liberty cannot be allowed, we recommend that the sty-yard be as roomy and extensive as possible. During the last ten days or fortnight, the feeding may be pushed, and more barley-meal, pea-meal, and milk allowed. Too many pigs should not be kept together in the same sty, nor should they be of unequal ages, as the larger are apt to persecute their younger co-mates, and drive them from the trough. Porkers are killed at different ages, varying from about three months to seven months old. We consider that the true dairy-fed pork is in perfection when the animal does not exceed the age of about three months, or ranges from three to four months. Large pork is apt to be coarse and over fat, and consequently not so digestible as younger meat, and is, therefore, not so much sought
for in the London market. It bears a lower price than small pork; and though the pig weighs heavier, still, taking the extra keep into consideration, it is perhaps not more profitable. On such points as this, however, the breeder will always consult his own interest, and study the demands of the market.

STORE PIGS.

Of store pigs little need be said; they are intended either for sale, or as future bacon hogs. They should be kept in fair condition—not too low—and their health should be attended to; they should be allowed to run in the fields, or in the woods and copses, when the beech-mast or acorns are falling, and be regularly and moderately fed at certain intervals,—say, in the morning and evening. Knowing their feeding times by habit, they will never willingly be absent; and wherever they may ramble during the day, their return at the appointed time in the evening may be safely calculated upon. After their evening meal, they should be secured in their sty, and snugly bedded up.

HOGS FATTENING FOR BACON.

Bacon hogs (we here except breeding sows, destined, after two or three litters, for the butcher) are generally put up to fatten at the age of twelve or eighteen months. Under the term bacon hogs, we include the barrow pigs (that is, castrated males) and spayed females, chosen by the breeder or feeder for fattening, after the age admissible as porkers. In the fattening of bacon hogs much judgment is requisite. It will not answer to overfeed them at first; under such a plan they will lose their appetite, become feverish, and require medicine. They should be fed at regular intervals. This is essential. Animals fed regularly thrive better than those fed at irregular intervals; nor should more food be given them at each meal than
they will consume. They should be sufficiently satisfied, yet not satiated. It would be as well to vary their diet: middlings, peas, potato-meal, and barley-meal, may be given alternately, or in different admixtures, with wash, whey, buttermilk, skim milk, and the occasional addition of cut grasses, and other green vegetables. A little salt should be scattered in their mess; it will contribute to their health and quicken their appetite. A stone trough of clean water should be accessible, and the feeding-troughs should be regularly cleaned out after every meal. The sty should be free from all dirt, and the bed of straw comfortable; indeed, it is an excellent practice to occasionally brush the hides of the animals, so as to keep the skin clean, excite the circulation of the cutaneous vessels, and open the pores. Pigs thus treated will fatten more kindly than dirty, scurvy animals put upon better fare. We fear, however, that this essential point is greatly neglected, from the too common idea that the pig is naturally a filthy brute, than which nothing can be more untrue; it is the keeper who is filthy, and not the animal, if he constrain a pig to wallow in a disgusting sty.

Too many pigs should not be fed in the same sty; three are sufficient, and they should be, as far as possible, of the same age; and the meals should be given frequently; but only in moderation at each time,—over-gorging is sure to cause indigestion; and the only remedy for this is abstinence. A little sulphur occasionally mingled with their food is useful. When the store hogs are first put up (and we must suppose them in moderate condition), the food should only be a few degrees superior to that on which they have already fed; it should be improved, step by step, till the digestive powers are adapted for that of the most nutritious quality; and with this the fattening must be completed.

A bacon hog is generally fattened in autumn and killed about Christmas, sometimes after Christmas, sometimes a few weeks before. The average length of time required for bringing the animal into good con-
dition varies from about fourteen to twenty-one weeks, according to size and breed. Some fatten hogs until they are incapable of moving, from the enormous load of fat with which they are burthened; and in order to accomplish this, four, five, or even six months are required. An animal so fed will certainly not pay for its food, nor can it be deemed in health; the heart and lungs will be oppressed, the circulation impeded, and the breathing laborious; sufficient fatness is all that is desirable. A fat hog is a comely, comfortable-looking animal, the embodied type of epicurean felicity; but a bloated, overladen hog is a disgusting object, uneasy and distressed in its own feelings, incapable even of enjoying its food, buried in its excessive pinguitude.

The quantity of barley-meal, pea-meal, or other farinaceous food (exclusive of wash, skim milk, &c.) consumed by a hog, during the time of its fattening for bacon, will vary greatly according to the size and breed of the animal. Three Coleshill pigs, somewhat more than forty-five weeks old, were fed by the Earl of Radnor on forty-eight bushels of barley-meal mixed with whey, and about six bushels of potatoes. They gained the first prize. This gives sixteen bushels of barley to each pig; but the time during which the fattening process was carried on is not specified. A single pig, fed by the same nobleman in 1846, and the like age, consumed sixteen bushels of barley-meal mixed with whey, and one bushel of potatoes. (Silver medal.) However, we must not quite take the amount of meal given to prize pigs as a standard. Taking the average, and supposing the pig's age to be fourteen or fifteen months, and the animal to be in fair condition, we should say that ten or twelve bushels of meal (that is, barley-meal, pea-meal, &c.) would be sufficient for every useful purpose; well do we know that much less often suffices;—but we are supposing the production of first-rate bacon. Porkers, of course, require a less outlay, according to their age. A porker ought not to carry too much fat. Neither the feeder nor the buyer profit by over-fed pork,
though perhaps the pork-butcher may: he retails it per pound to his customers. Our observations, however, do not apply to the respectable dealers in pork in London and its environs, who exhibit the most delicious country-fed meat, and justly pride themselves upon an article of consumption which brings them the first-rate custom.

With respect to the estimated tables relative to the increase in weight of pigs, under certain modes of feeding, and under given quantities of food, we hold them to be utterly fallacious. The feeder's means, the produce of his ground, the breed he adopts, and the proportion of attention he bestows on the porcine part of his stock, which will be regulated by his profit therein, will make all the difference, and must be taken into the account. To the farmer (we speak not of others), the profit to be derived by him from feeding porkers or bacon hogs will depend upon suitability, or the apposite union of circumstances connected with the locality, convenience, and staple returns of his land. It is one thing to keep a few pigs for home consumption, and another to keep them as a source of income.

After these general observations, we shall be doing good service by republishing the notes of a journey made by two Scotch farmers into the south dairy district of England in 1856, when the Ayrshire Agricultural Association lately sent Messrs. David Cunningham and James Drennan to inspect and report on the best dairies of Gloucestershire, North Wilts, and Somerset. From the appendix to their report we extract the following account of

**ENGLISH PIGGERIES ON DAIRY FARMS.**

"The piggery in England is regarded, all but universally, as a useful appendage to the cheese dairy. The English dairy farmers appreciate it more highly than the Scotch. The points which principally require attention in order to attain success in feeding pigs are, good..."
housing, good breed of pigs, economy of labour in their management, proper kinds of food, and the most judicious way of using it.

"In England the (pig) courts are generally placed in such a manner, that the animals when moving about are not exposed to the winds.

"In the districts that came under our observation, the black Berkshire breed of pigs appear to predominate. Next, in point of numbers, might be classed the small Berkshire, and there were some of the Hereford breed; of course, there were many crosses and impure breeds, but the general run seemed superior to the common run of pigs which are exposed on the 'auld brig of Ayr.'

"At Mr. Sadler's (Bentham, near Cricklade) we had an opportunity of seeing the black Berkshire breed brought as near perfection as any breeder has yet managed to bring it. Out of his stock of nearly three hundred, there was not one which had not 'the four white feet, the white spot between the eyes, and the few white hairs behind the shoulders, which are amongst the indications of purity of that breed.' He won prizes, for boars and sows of any large breed, at Gloucester and Lincoln, and at the Smithfield fat stock show; won the prize for the best fat pig, an animal which weighed forty-two scores, sinking offal.* The Berkshire pig, if moderately well fed, is always fat, or at all events can easily be made so in a short time. Therefore, the feeder can select his time for selling according to the state of the market. He can fed off at the weight of ten scores for converting into hams, or, if desirable, keep the animal until it has obtained fifteen score, for conversion into bacon.

"The small Berkshire is the best for the ham-curer's purpose. The curer likes to get pigs from nine to twelve

* At Chelmsford, in 1856, the Berkshire breed again swept off the prizes for boars and sows. At Salisbury, white pigs won every prize; one only showing dark spots. There, too, Mr. Fisher Hobbes showed an "Improved Essex" among boars of a large breed.
score of lbs. each. For nice, well-fed pigs of that size the price, in July, in Bath, was 11s. per score, with the head and feet on.

"We shall instance what we saw at Mrs. Harding's dairy farm (Marksbury, Somersetshire) as an example of good, plain, profitable management, in preference to Mr. Sadler's; because the management of that gentleman is beyond the reach of common imitation. It requires great skill, capital, and indomitable perseverance to enable any one to establish such a reputation, both as a breeder and feeder.

"Mrs. Harding purchases all her pigs. They are frequently got at reasonable prices, at six or seven months old. When half-grown animals can be procured at moderate prices, they are preferred to young pigs. Three lots, of about thirty each, are fed off in the course of the season. Those we saw, with the exception of one lot of Herefords, are all of the old Berkshire breed. They are sold to the ham-curer when they reach the weight of twelve to fourteen scores.

"The whey from the cheese-room is conveyed by a pipe from the leads in the dairy to a tank in the centre of the piggery. In this tank some kind of grain, usually bruised barley, is put, and the whey is run over it. Before the mess is used, the whey is allowed to become sour, as it is supposed to be less laxative in that state.

"Advantage is taken of water power to drive a pair of stones for bruising grain.

"The growing pigs are turned into a field to feed upon the pasture, and a small quantity of brewer's grains is given them.

"In no instances, among the farms we visited, were pigs fed on the whey alone. It is thought more profitable to have a greater number than the whey will keep, and to use other kinds of food along with it.
THE PIGGERY.

PIG MANURE.

"At the farm of Mr. Charles Lawrence, close to the Royal Agricultural College farm at Cirencester, the pigs are kept on sparred floors, and their manure, which is free from litter, is carted away to an old quarry, where weeds, roadside-parings, &c. have been slightly burned. The manure is well mixed with calcined matter, then heaped up in form of a turnip heap, and thatched over for preservation. A portion of superphosphate of lime is added, and forty bushels of the compound are found to be excellent manuring for root crops. With no auxiliary manure, save a little superphosphate, Mr. Lawrence's crops look remarkably well."

THE PIG AS A GLEANER.

The pig is a capital gleaner—in Norfolk they call the pigs used for this purpose, chiefly of the white Suffolk breed, "shacks," and every good farmer buys a lot, about harvest time, to follow, accompanied by a few geese, the sickle, the scythe, or the reaping machine, and save the birds and grubs the trouble of consuming the shed corn. In these cases, if there is no pond or brook handy, it is well to send a supply of water in a tub, for the pig-gleaner is thirsty, and will not do his duty unless he can whet his melodious whistle.

In buying "shacks," it is necessary to take care that they are not too delicate or too highly fed; if they are, instead of growing fat, they will waste and pine. And they must have good legs too, well set on; for walking for a living is quite a different thing to being fed out of a trough with new tempting dainties every day.

The large Suffolk breed was much improved by crosses with the Neapolitan boars, introduced by Mr. Coke, and obtained from Mr. Western, the founder of the improved Essex.
PIGS FED BY WORKHOUSES.

Pigs may be profitably fed by all workhouses wherever there is even a garden of any size; but still more profitably on the farms attached to industrial schools, where food is boiled for a large number of children every day, where the labour of children costs nothing, and where there is a full consumption for all the pork, fresh or cured, that may be fed. There may be difficulties in disposing of all the offal of an ox or sheep, but in an industrial school every part of a pig may be easily used—a well-bred one will have few bristles, and even the bones, after boiling, will come in for turnip manure.

At a great school where the destitute orphaned and deserted children of the city of London are maintained and educated to the number of nearly fifteen hundred of both sexes, including many infants, pig-feeding has long been one of the profitable employments of the establishment, although the extent of land at the disposal of the institution has been hitherto very limited.

At the school alluded to, between sixty and seventy pigs, divided into about eight lots, according to their condition, are always maintained, the first sty being replenished as soon as the last lot is killed off. They are purchased at about twelve weeks old, and killed after being fed four or five months, when they usually weigh from eight to nine score. They are consumed on the premises as fresh pork, with the exception of a certain number reserved for bacon, which are kept until they reach about thirty score.

These pigs are fed on wash, consisting of the liquor from the large quantities of meat boiled for the use of the house, which is regularly poured into receptacles, whence pipes convey it at once into cisterns standing close to the piggery. To this liquor is added all the potato-peelings, refuse, bits of vegetables, bread, and meat, with the dish-
washings, and about as much purchased "middlings" as amounts to a shilling a week per pig. Although there is a dairy of about thirty cows attached to the establishment, no milk, in any shape, can be spared for the pigs. They are tended by the boys, under the care of the dairyman; and so well tended, that, in a long course of years, no important loss by disease has ever been experienced. Under this system it is calculated that there is a profit, over and above the first cost and purchased food, of about three pounds per pig. The profit would probably be greater if pea or bean meal were used in the earlier; and Indian corn and bran in the later stages.

The advantages of this system, imperfect as it is for want of land, are obvious. A large quantity of nutritive wash and waste food is consumed on the premises, and turned, at a profit, into meat, which is also consumed on the premises, giving, while growing, useful employment to some of the boys. Without the pigs, the pot-boilings and dish-washings must either be sold at a nominal price, or allowed to run away to waste.

There are strong objections to allowing anything in the shape of refuse to be sold from any large establishment, because it is found that whole loins and legs of mutton find their way by mistake into the swill-tub; even pullets and ducks have been found swimming in the wash of rich men's houses.

Among Mr. Edwin Chadwick's many extraordinary suggestions, was one for making candles from the dish-washings of rich men's houses.

But if a proper quantity of arable or pasture land be attached to an industrial or reformatory school, then pigs, in conjunction with a dairy, may be made extremely profitable.

The cows, the horses, and the pigs, with the sewage of the school, will supply, under proper arrangements for storage, a large quantity of valuable manure, if applied in a solid state mixed with the coal ashes of the great fires. With the labour of the boys and girls applied to
digging, forking, hoeing, and weeding, first-class crops of turnips, swedes, mangolds, carrots, and parsnips, may be grown. The great cost of root crops consists in the labour required, first, to get the soil loosened to a sufficient depth, which can in no manner be more effectually done (after or without ploughing) than by children with steel forks of suitable size, and next by hoeing and hand-picking to thin the seed crop and keep it clean from weeds—an employment which children perform in Norfolk better than grown labourers. The same advantages would attend children’s labour in raising crops of beans and peas.

Now, pigs can be satisfactorily fattened on roots with a little meal, while the pot-wash of the institution will more or less fill the place of the whey from the Dorsetshire and Wiltshire dairies. The moral advantages to the children, in health and early training to useful labour, would be as great as the economical.

The domestic pig, the pet of the villa, where one cow or two cows are kept, is an expensive luxury, and generally costs a good deal more than the market-price of pork; but it is a luxury as great as home-grown peas and home-made butter, and which every one who can afford it, and can find a place where the noise and perfume of master piggy will not be a nuisance, will do well to enjoy. The sort, or rather size, of pig must depend on the family. The medium size, with a cross of the Improved black Essex, or white Suffolk, will be found the most useful for fresh pork, and such hams as a family can consume. It is a perfect waste of money to pay any extra price for a fancy breed; although, if you have a breeding sow, it always pays, even in suckers, to pay an extra fee to put her to a first-class boar. Pigs good enough for feeding are always to be picked out by a competent judge, in the regular markets.
THE PIGGERY.

The cottager's pig should be of one of the improved large breeds. It is a great pity that instructions on choosing and feeding pigs are not included in the lessons of our parish schools.

The labouring man requires a large pig; but by choosing an improved breed for the investment of his spare money and labour, he fattens him at half the expense and in half the time that it takes to make a coarse brute half fat.

THE PRIZE PIG.

If a gentleman who is not a regular pig breeder desires to compete for a prize at an agricultural show, he must begin by purchasing a lot of the breed most in fashion in the district where he intends to compete. It is useless to go against the fashion, and expect to win with a white pig where black are the rage, or *vice versa*. We say a lot, because out of three or four, one or two may break down in feeding, and spoil the pen. The better plan is, to buy a young boar and sow just weaned, and breed yourself. From a litter of well-bred ones you can select three or four of the best-shaped and best-constitutioned, and educate them with peculiar care, guarding them from the least notion of hardship, keeping them first on the best-growing, bone-making food (as explained in our chapter on feeding), and then, by variety, tempting them to aldermanic fatness, yet never neglecting daily exercise; for without constitution fat is nought. Beware of a masterful pig: he may ruin all your hopes. There is usually one tyrant in every litter. If the free use of the whip fail to conquer him, he must be separated from his more peaceful brothers and sisters.

For a breeding prize, it is not necessary that your pig should be able to walk to a Christmas show; if he is alive and snores upon his wooden pillow, that is enough.
CHAPTER IX.

PIGSTIES AND TROUGHS.

Pigsties may be built of all shapes; and pigs thrive wherever they are warm, clean, and dry. The Duke of Bedford has a pigsty roofed with glass; and, grand as this sounds, with a large number of pigs it may be found economical.

A pigsty, entirely roofed over, with open sides to the pigs’ own yard, is an economical plan, as it affords shade and prevents the food in the troughs from being needlessly diluted with rain. The sleeping department should be lofty enough for a man to stand upright in it, and provided with a sliding wooden shutter, that, when drawn back, will render it perfectly light. Under this mode of construction there can be no excuse for the “pig-ward” not keeping the sties perfectly clean; but if, on the contrary, it is a dark, low roofed, cramped kennel, the owner cannot either see or enter himself conveniently, and the needful duty of changing the straw every week and whitewashing periodically will be neglected.

Where there is enough cheap food from a dairy or brewery, it is best to keep as many pigs in one set of sties as will freely occupy the whole time of one man or boy. Under this arrangement, every week, day, and hour has its duties; the feeding, cleaning, &c., are performed in regular rotation, much to the advantage of the pigs, and profit of the pig owner.

There should be two receptacles for food in every sty—one for dry food, protected by a movable flap which the pig can move with his snout; the other, a trough with nearly as many divisions as there are pigs, for wash—these troughs should be placed so high that the pigs cannot
get into and befoul them. One of the best, invented by Mr. W. Torr, of Aylsby, and manufactured by Crosskill, of Beverley, is of iron, with a swing flap; if set between two sties, you first feed one set of pigs, and when they have had their fill the flap is reversed, they are shut out, and the trough is open to the other sty. [See Cut.]

There should always be a spout for pouring wash from the outside of the sties, instead of obliging the feeder to enter with buckets amidst a squeaking, fighting mob of porkers—remember, a saving of labour is a saving of money. Many of the iron pig-troughs sold have divisions too narrow for a pig with a thick, short, fashionable snout to feed from.

No pigsty can be healthy which is not thoroughly drained, on the same plan as if it was a garden walk, with large porous drain pipes, at least four feet deep, and also supplied with properly trapped pipes for carrying away the liquid manure to the tank or manure bed.

If the soil is of a cold retentive character, it will pay to excavate the foundations three or four feet, lay down porous drain pipes and fill up with chalk, coal ashes, glass, refuse, or old building rubbish.

Nothing is so injurious to pig health as rapid changes of temperature; warmth, with pure air, cleanliness, plenty of food, in fitting variety, at regular hours, and regular exercise, even for pigs put up to fat—these are the cardinal points of successful hog-feeding.

COVERED PIGSTIES.

Mr. Davey, of Polsew farm, near Truro, Cornwall, has a piggery, consisting of a covered building, thirty-three feet square, the floor of which is adjoining, but three feet below the farm stable at one end, and an open house, containing eight (for working) oxen at the other—the litter from these two departments is daily mixed and distributed over the piggery where forty pigs carry on a
complete manure manufactory. The manure is exceedingly rich, averaging 200 loads, removed every three months during the six winter months of the year. The pigs are fed on fermented, grated turnips, three days old, prepared in three tubs according to the method he adopts for feeding cattle. His pigs are chiefly of the Neapolitan character, so common in Cornwall, but he has lately introduced some Berkshire pigs, which he means to breed from.*

The farmer will find a range of single sties convenient, with larger accommodations for breeding sows, and an exclusive and well-secured domicile for the boar. The young pigs and porkers, with the sows, will have the advantage of a farm-yard, or large straw-yard, in which they may indulge themselves according to their natural instincts. They must of course be stied up for fattening; but before this process commences, they may be turned into the cut wheat fields in autumn, or into the oak copses (if there be such); not, however, without being under surveillance. The air and the moderate exercise taken in searching for a scanty but excellent kind of food will render their repast, when driven home in the afternoon, most acceptable. The great farmer, however, and the brewer or milk-merchant (we mean the great milk-dealers in the neighbourhood of London), are differently situated. In the latter cases, a well-arranged series of airy, cleanly sties is imperative, especially for pigs above the size of sucklings; for even in such establishments the latter may be allowed some degree of liberty. System and order should prevail. There should be a proper place in which to mix and boil the food, with one or more large coppers and straining apparatus. The food should be mixed in square brick tanks, at a considerable distance from the dairy, or the smell will prove very injurious, sunk in the ground and cemented, in order

* Mr. Karkeek’s Report to T. D. Ackland, Esq., of a visit to the farm of Mr. Davey, dated March, 1857.
that no filtration of the more fluid parts may take place. If there is only one tank, there should be a partition in it. From the boiling-house there should be an immediate communication with the sties, under cover, if possible—but an out-house close to the sties, with a loft for roots, &c., may be made available. Each sty should open into a small yard behind, inclosed with a low wall or paling, but with a strong door. There should be separate sties for breeding sows, for porkers, and fattening hogs. Not more than three or four of the latter should be in one sty. The food should be given in troughs, in a separate compartment from that in which the hogs lie down, and no litter should be allowed there. The floor should be of brick or stone, should be frequently washed clean, and the troughs should be cleansed out before every meal. Any of the food left from the last meal should be taken out and given to the store pigs. A very convenient contrivance for keeping the troughs clean is to have a flap or door made with hinges, so that it can swing, and alternately be fastened by a bolt to the inside or outside edge of the trough. When the hogs are fed sufficiently, the door is swung back, and the trough easily cleaned out. It remains on the outer side of the door till feeding time, when the food is poured in without any impediment from the greedy hogs, who cannot get at it till the door is swung back. This simple contrivance saves a great deal of trouble, and is easily adapted to any common sty. It is a great advantage to be able to inspect the sties without going into them; and this is effected by placing them under a common roof, which may conveniently be a lean-to to the boiling-house or any other building, with a passage between them. The subjoined sketches will convey a general idea of the plan.

A different arrangement is recommended by Mr. Henderson: "Have a house thirty feet by fifteen, with four doors all opening outwards, and three partition walls through the house, viz., a wall between each of the doors, dividing the house into four compartments. The two
middle ones I use for eating-rooms, and the others for sleeping apartments, having an inner door between each eating and sleeping apartment. By this plan the keeper

Elevation and Section.

SCALE OF FEET.

A, root-house; B, boiling and steaming house; a, steamer; b, copper; c, c, steaming-vessels; d, d, tanks to mix the food; C, passage to the sties; 1, 1, feeding-rooms; 2, 2, sleeping-rooms; 3, 3, yards.

is enabled to get the eating-chambers swept out, the troughs cleaned, and the food put into them, without disturbing the swine or being disturbed by them. There
should be a division wall through each sleeping apartment; in the hinder part should be the litter, and the front and smaller compartment, through which the animals must pass to get to their food, may be used by them as a kind of necessary, for these animals will never defile their beds if they can avoid it.

"The following is the most convenient manger for their food. Let it be as long as the house is wide, and fixed against the middle wall, in form similar to a horse-manger, but not so deep; and it must be divided into twelve divisions, by partition-boards four feet in length or height, and a little broader than the manger is wide; thus a number will feed together as well and quietly as two or three. Before every meal the trough should be well washed, and the place swept, and once in the day a little fresh litter placed in the sleeping-chambers. Each of these sleeping and eating rooms may be temporarily divided into two, should it be requisite. The sleeping-rooms should be dark, as animals fatten much more rapidly when they lie down and sleep after each meal, than when they wander about. There should be a square yard to each piggery, well paved and drained, as should the sties be also; and where it is possible, an enclosure or small piece of ground adjoining is exceedingly useful.

"Those who have space to admit of it will find it advantageous to have five apartments instead of four, and in the fifth or central one to have a boiler to prepare the food, and chests or lockers to contain the various stores."

In these expensive plans we see no advantage over a range of well-built sties of the ordinary kind, of a convenient size, adjoining a steaming-shed and root-house or loft, and with an adjoining field or paddock for the use of the young and store pigs. Where numerous pigs are kept, it will be advantageous to have a double row of sties, with a paved alley between them. There should be good drainage, by which all refuse is carried off to a manure-pit; and the greatest cleanliness should be
Covered Pigsties.

maintained. Six breeding sows, giving each two litters per annum, will produce yearly upwards of a hundred pigs; of these, fifty or sixty may be fattened at the latter part of autumn, through the winter, and during the months of February and March, for bacon. The younger brood may be killed as porkers, or sold off as stores. With respect to the steaming apparatus, it will be found available for other animals on the farm, as horses, &c., to which steamed potatoes and other roots may be profitably allowed. There is no reason why it should be devoted exclusively to pigs.

We need not repeat that the breeding sows should be kept each by itself, in a large and commodious sty, and that the store and fattening pigs should have their respective tenements. We strongly recommend that the floor of the sleeping-shed be made of planks. Bricks are cold, and apt to induce cramp or diarrhœa; but we think that the paving of the whole sty might consist of asphalte. Bricks should never be used. Stone or slate should be set in cement, in order that no filtration may take place through the interstices, and thereby keep the soil underneath in a state of wetness, whence noxious gases will necessarily arise and generate disease, to the great loss of the farmer. Both bricks and wood are more or less porous, but not so asphalte; the latter, therefore, will form a dry floor, easily cleaned, and one moreover which, in common language, will not “strike cold.” Another thing is desirable namely, that the roof of the sty, whether composed of slates, tiles, or slabs of stone, should have a gutter, in order to carry off the rain. This may be easily contrived, and at little expense, and will often keep the sty from being flooded.
CHAPTER X.

FOOD.—THE REFUSE OF THE DAIRY.

The refuse of the dairy, already more than once referred to, is noted for its importance, both in the fattening of porkers and bacon-hogs. The very term of "dairy-fed pork" conveys an idea of delicacy; it has a pleasant sound. We associate it with the idea of meat pleasant to look upon and delicious to the taste, and not without cause. True dairy-fed pork is indeed a luxury; it causes no indigestion, and sits easily on the stomach. Celsus says, "Inter domesticas verò quadrupedes levissima suilla est;" that is, "Among domestic quadrupeds the lightest meat is pork;" and, as far as young dairy-fed pork is concerned, we agree with the Roman physician. If, however, people will overload it with a stuffing of rank onions, they must take the consequence—and brandy. All have not the "dura messorum ilia."

The refuse of the dairy consists of buttermilk, whey, and skim milk; and these, mixed with the flour of steamed potatoes, Indian corn, pea-meal, barley-meal, &c., constitute a diet of the most nutritious quality for fattening. Such food, however, should not be administered to store pigs; it is decidedly a fattening diet, and pigs accustomed to it do not thrive well when it is withheld and inferior food substituted. No one, indeed, would think of supplying mere store pigs with such luxurious food. On this diet some of the fattest porkers of thirteen, fifteen, or twenty weeks old, which we have ever seen, have been reared, as well as bacon hogs under the age of fifty-two weeks.
THE REFUSE OF THE CORN-MILL.

Having spoken of the refuse of the dairy, that of the corn-mill may be taken into consideration. The large miller, and the large dairy farmer, whether cheese or butter be their staple production, find swine a profitable stock. The very sweepings of the mill are thus made by the miller to return a profit: he may have to purchase whey, or buttermilk, or skim milk, from the farmer; but the latter has to purchase barley-meal, &c., from the miller, or, at least, to pay him for grinding it.

THE REFUSE OF THE STARCH MANUFACTORY.

Among other substances available for swine is the refuse of the starch manufactory—that is, of the wheat-flour used in the production of this substance. We ourselves have never seen it employed; it is said to be extremely nutritious, the animals fattening on it with great rapidity, and yielding very firm and substantial bacon. At the same time it is apt to cloy the appetite, and therefore should be given alternately with food of a different quality; indeed, in all cases, alternation of food is highly desirable, as the stomach palls upon one exclusive kind. The best method of preserving the paste deprived of the starch is to make it up into cakes and bake it. We do not, however, here speak from our own knowledge, for we have never seen this refuse used. As is evident, it can only be employed locally, and not generally. It is said to be far superior to the refuse grains and wash of the brewery or distillery.

THE REFUSE OF THE BREWERY AND DISTILLERY.

Pigs are usually kept in considerable numbers by the proprietors of large breweries and distilleries; neverthe-
less, these refuse grains and wash are not well adapted for sound fattening, unless mixed or alternated with other food, as pollard, barley-meal, &c. It is true that the animals become in good apparent condition; but their fat is flabby, and does not swell on being boiled, as the fat of good bacon ought to do.

With respect to the refuse of the distilleries, especially the wash, it ought to be very cautiously given; if allowed too liberally the animals reel from sheer intoxication, especially until they are accustomed to it; and we cannot but think its influence on the healthy condition of the animals to be injurious. "Neuenhahn says that the refuse of the brandy distillery cannot be given to the pigs too warm, or too soon after its removal from the still, and that it never heats their blood; but that if it be allowed to get cold and stale, it is rather injurious than beneficial to them. On the other hand, many experienced distillers, who fatten large numbers of hogs, assure us that it requires great attention, and the employment of a man on whose care they can rely, to prevent this residue from being given to the animals while too warm, for it is then that it injures, and materially retards their growth."—YOUATT.

This wash is not a natural food; it is not one which they will at first take willingly, nor can we regard it as beneficial. The pigs may indeed become bloated, but not covered with firm, solid fat; it must impair their digestive powers, and render the liver torpid, and perhaps swollen; mixed with water and barley-meal, or other farinaceous food, it may be admissible; but this is the best that can be said of it.

GREEN AND DRIED VEGETABLES.

There are many vegetables useful in the feeding of pigs, amongst which may be enumerated clover, sainfoin, lucern, chicory, tares, vetches, pea-haulm, cabbages, turnip-tops, &c. It is desirable that these, when given,
should be cut up small, and mixed with the wash; indeed, simply cut up, with a little salt scattered among it, and, occasionally mixed with a little pollard, it constitutes a good diet for store pigs, where the aim is not to fatten them, but to keep them in fair condition. Indeed, it is not advisable to render store pigs too fat or high in flesh; they grow larger, and their symmetry is better developed by moderate diet than by full feeding; and afterwards, when put up to fatten for bacon, they thrive rapidly on the increased quantity and quality of the nutriment.

Clover or lucern hay, cut up small and mixed with the wash, is also recommended; and, where it is practicable, an occasional or indeed a frequent run on good grass lands tends to the advantage of the animals. There are some wild plants, as the sow-thistle (Sonchus) and others, of which swine are very fond; yet it would appear that these animals, omnivorous as they are, are choice in the selection of their vegetable fare, rejecting many plants on which the horse, ox, sheep, and goat will feed with avidity. It is remarkable, that although the hog will champ the fresh green shells of peas, it does not swallow the tough inner lining, and only drains away the saccharine juice, rejecting the rest.

Among the roots given to pigs in our island, potatoes take the first place. These should always be steamed and mashed, and mixed with whey or skimmed milk, with the addition of middlings, barley-meal, peas, &c. Pigs, as we have previously intimated, however apparently well fed on potatoes, do not produce firm bacon which swells greatly in boiling. Hence potatoes ought to form a portion only of their diet, nor indeed are they essentially necessary. In the Channel Islands the store pigs are fattened almost entirely upon boiled parsnips; and they attain to an enormous size, yielding good bacon. Among other roots, we may mention carrots, turnips—especially
Swedish turnips—and beet-root. All these roots should be boiled, but may be given raw, though not so advantageously. Carrots are highly esteemed by many, and no doubt contain a considerable quantity of nutriment, and, in addition to meal, may be used with advantage, especially when potatoes are dear and scarce, in consequence of a general failure in the crops. They might, even when given alone, with the addition of whey, or buttermilk, or skim milk, make the animal reasonably fat, as in the instance of parsnip feeding; but we should doubt whether the quality of the bacon would prove first-rate.

The same observations apply to Swedish turnips, which are extolled by some as superior to potatoes; indeed, a writer in the Farmer's Gazette for November, 1844, who dates from Ballymore, near Arklow (Ireland), and who for many years has been in the habit of feeding pigs for the Liverpool and Dublin markets, bears testimony to the excellence of steamed Swedish turnips; and though he acknowledges his pigs are rather behindhand than otherwise, yet he describes them as thriving fairly, and at one-half of the expense incurred by the use of potatoes in their stead. He allows them a plentiful supply of the steamed turnips, with a little broken corn and wheat chaff, and about a pint of buttermilk to every three pigs, and considers that, by the Christmas of that year, his hogs will average from 4 cwt. to 4½ cwt.

What will be the character of the bacon produced by such diet is another thing; an animal may be made fat, but the fat will be soft, oily, and waste in boiling—and, indeed, such is the character of Irish bacon generally.

No roots, without a due admixture of farinaceous food, as pollard, barley-meal, peas, &c., will produce first-rate bacon, and indeed in the finishing-off, or last stage of feeding, it is better to omit the roots altogether, and give only peas, barley-meal, whey, &c. The same observations apply to pork; even young, delicate, dairy-fed pork requires to be finished off on a mixture of fari-
naceous food with the refuse of the dairy, in order that the meat may acquire a due degree of firmness. In this respect, as well as in age, pork differs from the sucking-pig; in the latter, tenderness and succulence are in the extreme; they render the young creature, when well cooked, one of the most delicate of "all the delicacies of the whole mundus edibilis." But, as Lamb says, the fat is not to be called fat, "but an undefinable sweetness growing up to it—fat cropped in the bud, taken in the shoot, in the first innocence, the cream and the quintessence of the pig-child's yet pure food."

**THE CEREALIA OR GRAIN, AND BEANS AND PEAS.**

By the *cerealia* we mean rye, barley, oats, wheat, Indian corn or maize, rice, and all their varieties, under whatever name they may be distinguished. To dwell upon the nutritive qualities of grain in general would be useless. The value of barley-meal, middlings, mill-sweepings, &c., in the feeding of pigs, is too well known to require comment. It is true that this food is expensive, but then it is not used exclusively till the time for finishing off, or need not be; and, what is more, the expense is repaid by the gain of the animal in weight, and by the great superiority of the meat, which will command its price in the market. The rapid increase in the weight of pigs fed upon barley-meal, peas, steamed potatoes, with whey or butter-milk, is astonishing. They have been known to increase at the rate of $3\frac{1}{2}$ lbs. (live weight) per day, and often at the rate of 2 or 2\frac{1}{2} lbs. Here is some remuneration certainly for extra expense, even if the finishing off be entirely on meal and skim-milk.

There is only one legitimate way of giving barley, and that is in the form of meal made into porridge with luke-warm milk, whey, or water, to which potato-meal may be added or not, as is deemed desirable. To give the grain in a raw state, or even bruised, or infused in water till it begins to swell and germinate, is, we consider, very dis-
advantageous; it is, in fact, attended by two evils—in the first place, the greedy animal does not sufficiently grind down the food for the complete extraction of all its nutriment; and, secondly, semi-champed grain is liable to produce indigestion, loss of appetite, and fever. The same effects are produced by mixing the meal with boiling fluid, which converts it into a sort of dough, or paste, very unfit for being taken into the stomach.

Some recommend that the meal be mixed with cold water in large cisterns, the proportion being five bushels of meal to a hundred gallons of water. This mixture must be stirred several times a-day, for a fortnight or three weeks, until an imperfect fermentation takes place, and it becomes acescent. In this state its fattening powers are said to be greatly increased; but the ordinary way is to mix the meal with lukewarm water, or whey, or butter-milk (pea-meal or potato-flour being added or not), and give it in the form of a thick soup to the animals. In 1846, a pen of three Coleshill pigs, exhibited by the Earl of Radnor, and which gained the first prize (£10, silver medal to breeder, and gold medal for the best pen of pigs), was fed on forty-eight bushels of barley-meal mixed with whey, and about six bushels of potatoes. The pigs were forty-five weeks and one day old. Next to barley-meal, oat-meal may be ranked in order, and in some counties it is largely given. We have seen the meal made up into good sized balls with warm water, and given to the pigs in buttermilk or kitchen wash, with decided advantage. It may be made into a sort of thick gruel with wash or whey, &c., or it may be mixed with water, set to leaven, and given in an acescent state.

Maize takes a high rank among the articles, under the title of cerealia, used for feeding pigs. It is equal, if not superior, to barley, and the animals are very fond of it. It may be ground into meal, or given in its natural state, after being soaked for some time in water, either alone, or in the wash, or in gruel. On many parts of the con-
CEREALIA, BEANS, AND PEAS.

105 tinent, and in America especially, where many varieties of maize or Indian corn are extensively cultivated, the flesh of pigs, and also poultry, fed upon maize, has a peculiarly fine flavour.

Maize is not much grown in England. A writer on maize gives us the following account:—"It seems that there is a particular line, on the continent of Europe north of which the maize does not thrive. To the south of this line, which passes through Nancy, formerly the capital of Lorraine in France, it has in a great measure superseded wheat and rye as the common produce of the land. The bread made from maize is not so palatable as wheat or rye bread; but by mixing it in certain proportions with wheat, it makes a very pleasant food. In the United States of North America, Indian corn forms almost the only bread eaten by many of the people; and in the slave states it is the only bread that the negroes eat. It is not, however, in the shape of baked bread that maize is most generally used in Europe, but in boiled messes and soups, as peas are with us. It is not only the ripe grain which is eaten, but the ear in every state, from that of a green vegetable to an unripe corn. It is boiled, stewed, and baked. It is a substitute for green peas and cabbage in its early stage, and is used in some way or other to its complete maturity. Nothing can be better than ripe maize to fatten hogs or poultry with, and the young stem, cut down quite green, gives one of the best and most abundant varieties of green food for cattle."

Occasionally rice has been used for fattening pigs, but is not equal to barley-meal. The proper way to prepare it is to put the rice into boiling water (two ordinary pailfuls to about forty gallons of water), and let the whole stand for several hours till it is cold. The rice will then be found to have swelled amazingly, and to be compacted into a mass so firm as to admit of being taken out by means of a shovel. In this state it may be given to the pigs, either with whey, milk, &c., or by itself; a
certain portion of potatoes mashed, after steaming, may be added. The flesh of pigs fed on rice is said to have proved very superior. Peas and beans, either in their green state, or dried and bruised, or ground into meal, are among the best articles of food for fattening swine. Pea-meal, or the the meal of the gray pea, or gray peas bruised, are in the highest esteem. Pea-meal may be given alone, or added to the barley-meal, or to the steamed potatoes.

Buckwheat (Polygonum fagopyrum) is not very generally cultivated in our island; it is, however, grown in Norfolk and Suffolk. It is not well adapted for cold, wet soils, but flourishes on warm, light, sandy land; hence on many parts of the continent, where the land is poor and light, unfavourable to the growth of oats, and not rich enough for barley, buckwheat is a great resource. As a principal crop, therefore, it is confined to some parts of the south of France, and other countries similar in soil and situation; it is sown as a secondary and occasional crop in Switzerland, Germany, and Flanders. In England, as we have said, it is seldom sown, except in Norfolk and Suffolk; although small patches are occasionally to be met with elsewhere, for the sake of encouraging pheasants, which are particularly partial to the grain. It must be given cautiously, as it makes pigs tipsy.

Buckwheat as a grain may be given to horses, mixed with oats or by itself. No grain is more greedily devoured by poultry, or makes them lay eggs so early or so abundantly. The meal is excellent for fattening pigs, and the flour, though from its deficiency of gluten it does not make good fermented bread, is much used on the continent for pastry, cakes, and such delicacies. With respect to rye, little need be said; occasionally pigs are fed upon rye-meal; in England very little rye, comparatively speaking, is grown; and then chiefly as a green crop for early spring fodder.
SEEDS OF VARIOUS VEGETABLES, FRUITS, ETC.

Linseed cake—or oil-cake, as it is called—is occasionally given to pigs, and sometimes linseed meal, or steeped linseed, but only in small quantities, and in addition to food destitute of oil, as potatoes, pea-meal, &c. Oil-cake is used largely in the fattening of horned cattle; but whether it is equally advantageous in the fattening of pigs is not very clear. Linseed is only twice mentioned as forming part of the diet of the pigs of the show for 1846 (Nos. 236 and 242); it is not mentioned in the catalogue of 1847, as far as the pigs are concerned.

Beechmast is eagerly devoured by pigs; and in places where this is abundant, it will be well to turn store pigs upon it, or collect it for their use; it will keep them in fair condition but not fatten them, or rather, not load them with firm fat; nevertheless it is an article of diet not to be despised, be it understood, as an adjunct, and not a principal article. It is the favourite food of the squirrel; and where beech woods are extensive, there that graceful little creature is numerous. But though pigs thrive on this food, it will not make firm fat, unless largely mixed with acorns: these, as we have seen, are often given raw, as they fall from trees spontaneously or are beaten down. But this is not the best plan: acorns should be collected and dried, and then slowly baked, crushed, and afterwards boiled into a sort of gruel with a little salt. This food is excellent. But we count not upon it in England; our great oak woods are gone, and it is only here and there that a farmer may thus add to his store of pig-food. Formerly it was otherwise,—

"Gone the merry morris din,
Gone the song of Gamelyn,
Gone the tough-belted outlaw
Idling in the grené-shaw."
THE PIGGERY.

All are gone away, and past,
And if Robin should be cast
Sudden from his tufted grave,
And if Marian should have
Once again her forest days,
She would weep, and he would craze;
He would swear, for all his oaks,
Fall'n beneath the dockyard's strokes,
Have rotted on the briny seas!"  Keats.

Well, if our oak woods be fewer and narrower, our pasture lands and our arable lands are broader, and the true system of managing cattle has attained to the rank of a science.

A run in oak copses ought not to be neglected, however, at the time of the fall, by a farmer who has the opportunity of sending his store-pigs into the wood. We have already alluded to the pigs of the New Forest.

Only one mention of acorns occurs in the catalogues of the cattle-shows: it is in 1847:

"181. Mr. Charles Eley, sen., of Heathfield Farm, near Hounslow, Middlesex—A pen of three 13 weeks and 3 days old Improved Berkshire pigs, bred by himself, and fed on barley-meal, acorns, and skimmed milk."

We cannot help thinking that acorns are too much neglected. We have seen them gathered largely in the neighbourhood of Dorking; and no doubt the cottagers found this produce to their advantage.

Chestnut trees are not grown in vast numbers in our island; in Greenwich Park, indeed, we are struck with their magnificent stems and bright, glossy foliage; and, for ourselves, we never saw so many elsewhere on an equal circle of ground. In England, chestnuts, as food for pigs, are out of the question. This is not the case, however, in many parts of the continent, where these are abundant, and indeed where they form portions of woods, and flourish as the towering trees of copses. There the chestnut tree affords an abundant supply, both for men and swine; and the latter are bountifully supplied with
SEEDS OF VARIOUS VEGETABLES, FRUITS, ETC. 109

It. It is seldom given raw, but roasted or steamed, or parboiled into a pulp, then crushed, and divested of the outer shell. By the conversion of it into a potato-like meal, the nutritive qualities of this fruit are greatly improved; and it is thereby better fitted for the digestive action of the stomach.

With respect to apples, pumpkins, and even peaches, which in some parts of America are lavishly given to swine, we have little to say. Apples in their raw state may keep up the flesh of store pigs (turned into orchards to devour the windfalls); and boiled apples mixed with potatoes, Indian-corn flour, or buckwheat, will no doubt prove nutritious, and in America constitute a cheap diet, but the case is different in England; and as for pumpkins and peaches, we have no observations to make; we doubt their fitness for feeding swine, and what is more, in our country they are not plentiful as blackberries, which latter, by-the-bye, might be found quite as beneficial. In North Africa, as before intimated, the wild-boar makes incursions into the melon-grounds, and we can conceive that melons, abounding with saccharine matter, are grateful to the palate of the wild hog, and so no doubt are apples, pumpkins and peaches, but they do not enter into the English bill of fare for pigs. At the same time, we object not to the plan of turning pigs into apple orchards in order that they may pick up the fallen fruit.

We may here notice a few other articles which do not come under any precise head. One of these is hay-tea, or rather an infusion of clover, sainfoin, or lucern hay, which is by many recommended as an excellent vehicle for mixing with other food. It may be thickened with potato-flour, steamed carrots, boiled cabbages, barley, or oatmeal; and for store pigs, in particular, it is said to be excellent, not only as keeping the animals in first-rate condition, but as saving more expensive kinds of food which must otherwise be given.

Another article is salt. Salt is almost essential to
health; it stimulates the appetite, it aids the operation of digestion, and all cattle are partial to it. A little salt should, therefore, be scattered into the food before it is given to the animal. It is, however, very singular, that though salt is so wholesome, brine in which pork or bacon has been pickled, is poisonous to pigs. We have never ourselves seen the poisonous effects of brine; but there are several cases on record in which these animals have died, in consequence, as Mr. Youatt affirms, of a small quantity of brine having been mingled with the wash, under the mistaken impression that it would answer the same purpose and be equally as beneficial as is the admixture of a small quantity of salt. We know not how to account for this, and we take it upon authority.

We must not here exclude earth or calcareous matters from our consideration. With the roots which a pig ploughs up in the ground and devours, a small quantity of earth is necessarily swallowed, the calcareous particles of which act beneficially by correcting any acidity in the stomach. Pigs put up to fatten, highly-fed, and taking little or no exercise, are very liable to acidity of the stomach, and loss of appetite as a consequence. Many breeders, aware of this, give the animals occasionally ashes or cinders, which they champ and swallow; or turn them out now and then upon a batch of ground over which lime or chalk has been freely sprinkled, in which they root and pick up morsels, which with the lime and particles of earth are swallowed. It is not a bad plan to mix occasionally a little magnesia in the wash or milk; this will very effectually correct acidity. These observations, which to some, perhaps, may appear strange, apply not only to the hog but to our domestic graminivorous animals generally. Oxen and sheep necessarily swallow particles of earth; calves are fond of licking chalk, as if impelled or directed by instinct in the act; and we have seen horses pull up little tussocks of grass or herbage, and swallow the sandy earth adhering in not a trifling
quantity to the roots, and that with evident satisfaction: nay, choice was exercised in the selection, ourselves being witnesses. Here, then, we have another reason why a run from time to time in the field, given to hogs, is advisable; with every root, every pig-nut that they swallow, they take in a portion of earth. We may state, having mentioned the pig-nut, that there are two species in England which afford the tuberous roots so greedily devoured by swine, viz.,—*Bunium bulbocastanum*, and *B. flexuosum*. The extirpation of these umbelliferous plants from fields and meadows is very desirable; in this the hog does good service. The plants are not eaten by cattle; and are in fact noxious if not poisonous, but the tuberous root is sweet and perfectly wholesome. We have, when a boy, eaten it hundreds of times; in the meadows of Cheshire it is extremely abundant, and in other counties also:—query, could not the large species (*B. bulbocastanum*) be grown with advantage for pigs? It is a tuber too much neglected, and when steamed would, we hesitate not to say, prove extremely nutritious. We merely throw out the hint, in these days of potato failure, as worth some consideration. All our edible roots and vegetables have their wild origin. The garden carrot, numerous as are the cultivated varieties, is only the descendant of the common wild carrot of the hedgeside (*Daucus carota*), also an umbelliferous plant belonging, as does the pig-nut, to the class *Pentandria*, order *Digynia* of Linnaeus.
CHAPTER XI.

ON THE TEETH AS INDICATING THE AGE OF THE PIG.

On the tests of the age of pigs, a subject so important to purchasers and exhibitors for prizes, no authentic information existed until Professor Simonds, of the Royal Veterinary College, published the result of his minute investigations into the age of the ox, sheep, and pig, as indicated by their teeth, in the 15th Vol. of the Journal of the Royal Agricultural Society.

"Unlike the ox and sheep, the pig is born with a given number of teeth that have cut the gums—these are always eight, four in each jaw, and well developed. They have very much the appearance of small tushes, are situated by the side of the mouth, and consequently do not injure the nipple of the sow when grasped in the act of sucking. The tongue of the young pig is fringed upon its border, and as in the act of sucking the organ is doubled along its middle, these fringes overlap the nipple, and grasp so hard that, when the sow rises, the young thing will often be found hanging to the teat; this arrangement probably protects the teats of the sow against injury from the pointed teeth of the young. At one month old, in addition to the foetal teeth, four incisors appear, two above and two below, directly in front of the jaws; these belong to the temporary set, and are miniature portraits of those teeth which will succeed them. Within a few weeks their increase of size enables the young animal, by collecting its own food, to live comparatively independent of its dam—hence young pigs can safely be weaned at six or seven weeks old. Besides cutting the central incisors, the young pig has now three temporary molars on either side the jaw; the
first of these in situation is generally less forward than the others, and not unfrequently at a month old has hardly cut the gum. At three months, two more temporary incisors are added to each jaw, making, exclusive of the foetal corner teeth, four in the lower jaw. The full number of temporary incisors is now complete, and the jaws, when examined, seem to be fairly filled with teeth. The middle incisors, as well as the foetal corner teeth, and the temporary tushes and molars, are by this time sufficiently grown, and the young animal can safely be left to shift for himself. No difficulty can exist in judging the age of the pig at this date, 'first dentition being completed.' From three to six months the size of the teeth increases with increasing age. At about six months the temporary incisors of the lower jaw will likewise have attained their greatest length. After this period the incisors will begin sensibly to diminish in length from daily use. The amount and rate of progress will much depend on what the pig feeds on. If he has to work for his living and eat hard food, they will become short much more quickly that if fed on the usual soft food of a farm or a sty. In a practical point of view the other changes, marking the attainment of six months, which are in the molar teeth, are of the first importance. About this age in most animals, but not in all, a small tooth comes up on either side of the lower jaw behind the temporary tushes, between them and the molars, and in the upper jaw directly in front of the molars; these teeth have a very pointed appearance, and have, in consequence not unfrequently been mistaken, especially in the lower jaw, for the permanent tushes. The pig has therefore been thought to be older than he really was, and the truth of the owner's certificate (in an entry for breeding prizes) has been doubted. An error of this kind is more likely, should the temporary tusks be either broken off near the gum or worn away—a very common occurrence in pigs of this age.

"'Practical' men, which is often another self-praising
term for ignorant men, have asserted that the pig cuts his tush at six months—they have mistaken the pre-molars for tusks.

"Another fact will assist an investigator into the age of pigs, namely, the putting up of the first permanent molar at the age of six months.

"At nine months old the fetal incisors and tusks, which rarely fall before this period, although they be worn to the gums, give place to permanent incisors and tusks. The first permanent incisor is a corner tooth; the permanent tushes also supplant the temporary. Near six months old, when the temporary incisors attain their full length, they begin to wear down—this fact assists the inquirers into a pig's age." Professor Simonds adds: "With pigs hard kept, by the time they are ten months old the lower incisor teeth are so worn away, that in the front part of the mouth they seem toothless.

"The cutting of the permanent tushes cannot be relied on as a mark of age. Breed, sex, character of management, castration—all affect their size and form. In highly-bred pigs of small breed, the tush is always small; in coarse, large breeds it is large—castration restricts the size of the tush. At nine months, besides the changes mentioned, an addition is made about this period to the number of molars, by cutting the fifth tooth in position, or second permanent molar.

"At twelve months, the most important change is in the fall of the middle temporary incisors, and the occupation of their site by permanent teeth. They differ chiefly in being of a whiter colour than those they supplant."

From the preceding remarks, it is evident that in judging of the age of a pig, he must notice not only the size of the tush, but the state of the incisor teeth. The lower tushes of an animal, said to be a year old, are often fully three-quarters of an inch long, but, by themselves, possess hardly any value in determining the question of age. In combination with the incisors they are of value; but the condition of both must be taken together, or not
at all. At twelve months old the pig will have only two temporary incisors, the lateral in either jaw. At the completion of the year, permanent molars replace the temporary or deciduous. The two anterior teeth are generally the first to fall, presently followed by the third.

The changes between twelve and eighteen months relate chiefly to the growth of the teeth. The permanent incisors occupying the front of the lower jaw have now attained their full length. The tushes are taking, as segments of a circle, a gentle sweep backwards. The corner teeth are likewise large, and the lateral temporary incisors still in situ. At eighteen months, or thereabouts, dentition may be said to be completed, by the cutting of the lateral incisors, and of the last or sixth molar.

Between a year and a-half and a year and three-quarters, the permanent incisor teeth reach their full growth; after this period their length in the lower jaw begins to lessen. After this time the age of a female can only be judged by the wear and tear of her teeth and general appearance. In the boar, the tushes will not have attained their greatest size.

CHAPTER XII.

HOW TO CUT UP A PIG.

Fresh pork is brought to market in two forms. In the first stage, in porklings, the carcases weighing from 40lbs. to 80lbs. each. In this stage it is jointed into hams, hands, spareribs, loins, and belly-pieces.

The spareribs and loins are always used as roasting-pieces; the hams indiscriminately for roasting and pickling. The hands and belly-pieces are always pickled. For this purpose no breed answers so well as the Essex. In this state the outside fat and skin, or crackling, is cut along with the lean part, and so served at table.

The other form in which fresh pork is sold is, when the
pig has arrived at a pretty mature state, and is fit to make bacon. The only parts, however, sold as fresh meat, are the sparerib and loin, together with the steaks off the shoulder. Along with the loin and sparerib some persons cut off the whole of the ribs. This is a bad practice, as the short ribs greatly aid in curing bacon, and should always be left on the side.

The ribs should be divided with a saw, midway between the breast and backbone. A sharp knife should be employed to cut out the lean or muscular part of the neck and loin from its exterior covering of fat, the cutter-up having previously divided with a saw the aitch, or haunch bone.

He commences cutting at the neck, and makes a clean cut down to the loin, leaving only a thin portion of the muscle or lean part, about the thickness of a shilling, attached to the fat or back part. As many more cuts are made in the same direction as are required to separate the joint up to the point where the ribs had previously been divided by the saw.

Steak-pieces for frying, or sausages, or pies, may now be cut off the lean parts of the hand, which permits the shoulder being easily separated.

The foreshank may either be cut out or left in; if for home use, it had better be cut out, and used as pickled pork.

The ham can now be cut off, commencing where the ham joins the flank, and cutting so that the outside skin will form a circle or ellipse with the skin that lines the inside of the ham.

For home use, or where the retailer has a demand for bacon and hams, there is no method that economises the meat so much: for the lean of the neck and loin lose greatly in weight during salting, especially if the bone be separated so as to leave it bare.

_Lard._—Before preparing the carcase for bacon, the whole of the omentum, or lard, ought to be taken out. Some bacon curers render down the caul with the lard. If the caul is taken out carefully, and well washed, this may be done without deteriorating the lard.
HOW TO CURE BACON AND HAMS.

Lard is rendered down by being first cut up into pieces, and placed in a boiler with a little water. As it melts it is strained and poured off into bladders. It requires great attention to melt it without burning it. When all is melted, the rest is pressed. What remains after pressing is the stuff sold as greaves, to feed dogs and fowls.

HOW TO CURE BACON AND HAMS.

There are endless receipts for curing hams and bacon: but in Cumberland, Westmoreland, and Yorkshire, no sugar is used, except in a paste outside to protect against flies. The sweet taste of the hams arises from the butter-milk and oatmeal on which the pigs are fed. To have a ham in perfection, the hog ought to be three years old, and that will not pay the farmer.

One and a half pounds of salt and 1 oz. of saltpetre are enough to salt 14 lbs. of meat, or 2 cwt. of meat will require 24 lbs. of salt.

For salting on a large scale we give the cottage directions in a separate chapter.

The following is Mr. Rowlandson's plan:—

"Having cut up a well-fed hog, which absorbs much less salt than an ill-fed animal, and runs very little risk of being over-fed, salt and saltpetre, in the proportions described, must be sprinkled over the flitches, &c., and then they must be laid one over the other in a slate trough, or a wooden trough lined with lead, to the number of half a dozen; in the course of twenty-four hours or forty-eight hours, according as the salt is converted into brine (and this will depend on the weather—in frosty weather the meat will not take the salt, and in moist weather it is apt to spoil), the sides are removed, rubbed, replaced in inverse order, the top at the bottom, with a little fresh salt sprinkled between each course, and the brine thrown over the whole. In favourable weather for curing, once turning and replacing will be found enough, and will not occupy more than a week. Packed dry, with layers of salt, and covered with canvas, bacon is thus prepared
'green' for the London markets, and thence drawn to be smoked, as required for consumption.

"The West of England bacon is sent to London direct, because it travels by land. A sea voyage spoils smoked bacon. Smoking is now a trade, to describe which would be useless. For curing hams, they should be rubbed with a mixture of salt and saltpetre, then laid with the shank end lowest, at an angle of forty-five degrees, in the trough, and so on with every row—at the second or third day they should be well rubbed with brine and salt, set up as before, with a little fresh salt and saltpetre—in two more days they should be again rubbed and packed flat and as close as possible, the thick part of one row against the shanks of the next row, by which means they will be nearly covered with their own pickle. In a week or ten days they will be cured ready for drying, which should be done by taking them out of pickle, setting them upright with the shanks downwards, and a little dry salt thrown over the thick end. After being thus left for a week longer, they will be ready for hanging in the drying-house, which is, in fact, a slow stove.

"Nothing makes better hams or bacon than a well-bred sow spayed after producing four or five litters. Women will succeed best in curing bacon or ham by using a brush like a horse-brush, fastened with a strap, instead of their bare hands, to rub in the salt. This rubbing is often overdone."

CHAPTER XIII.

ON THE DISEASES OF SWINE.

We profess not to direct the veterinary surgeon, nor yet to give the breeder, feeder, or farmer, false confidence in himself. Humanity, as well as sound policy, demands that in cases of illness or accident, the aid of the veterinary should be promptly called into requisition. All
tampering is unwise. Previously, however, to speaking of any particular disease, a few observations may be permitted. Pigs are far less manageable than oxen or sheep, they resist all manipulation, they rebel against anything like coercion, and can neither be bled nor drenched without difficulty.

**Bleeding.**

Bleeding is often requisite, but it is not an easy task to cause a good and free flow of blood. It is useless to attempt an incision of the jugular vein; this is too deep in the fat of the neck, and no pressure or ligature will make it swell; nor indeed would the thickness of the hide, even in a thin pig, permit it to be clearly visible.

There are, however, modes by which blood may be obtained, irrespective of cutting off part of the tail, or slitting the ears—the practice most commonly adopted. One plan is to turn back the ear and open one of the large veins ramifying on the inner surface near the base; we need scarcely say that a lancet must be used. Another plan is to open the brachial or plate vein, running along the inside of the fore leg, at a little distance above the knee—a tight ligature being previously placed round the limb, just below the shoulder. Some recommend an incision into the palate veins, which run one on each side of the roof of the mouth, but there is great difficulty in securing a pig in order to perform the operation. On the whole, the brachial vein is the one to be selected, especially when a copious flow of blood is considered necessary.

**Drenching.**

The forcible administration of medicine to pigs, especially to large and strong animals, is rarely practicable, so violent and determined is their resistance. It will require the efforts of two or three powerful men to secure a good-sized hog; and even then the animal, by its strenuous exertions, may defeat every attempt on their part to administer the medicine; indeed, from this cause there is
some danger of choking the beast, and a still greater probability that the conflict will aggravate the disease (especially if of an inflammatory nature), or occasion the rupture of some internal blood-vessel. The best plan (and it may be generally managed) is to cheat the animals into taking physic with their food. It will save much trouble, and the chance of any accident.

Having said thus much, by way of a brief preface to this part of our subject, we may proceed to notice the diseases and casualties to which the domestic hog is more particularly subject—but of which most might be prevented by attention to diet, occasional doses of sulphur, and cleanliness. Prevention is easier than cure.

FEVER.

Pigs in crowded, filthy sties, irregularly fed, and not allowed a sufficiency of water—or such as have been kept upon a low diet, and are then suddenly placed upon the very contrary in the extreme—are not unlikely to suffer from an attack of fever, connected with inflammation of some of the internal viscera. Dullness, redness of the eyes, dryness and heat of the nasal disc and the lips, heat of the ears and skin generally, great thirst but loss of appetite, are the prevailing symptoms. The pig, like all animals fattened in confinement, is a bad subject for disease, and is liable to sink rapidly under any acute attack.

The first thing to be done is the abstraction of blood from the ears, brachial vein, or tail; this must be followed by aperients, even if it be necessary to drench the animal. Should its appetite be not altogether lost, the animal may be cheated into taking half a drachm of jalap, or less (according to the age and size of the animal), with five or six grains of calomel; or two or three drops of croton-oil, made up with bread-crumb into a pill. A drench may consist of a couple of ounces of castor-oil, with gruel; or of senna tea, salts, and a little jalap; or of salts and castor-oil mixed in gruel. To aid the operation of the medicine, enemas should be administered. and a
little nitre be added to the water, as a cooling drink. If the animal does not refuse food, two or three pints of warm gruel should be given at intervals. In the course of a day or two the aperients, should it be deemed needful, may be repeated, and the same diet continued for some time. By these means, an animal may be restored in the course of a few days, if the disease be treated in time.

CONTAGIOUS INFLAMMATORY EPIDEMICS.

Inflammatory epidemics, assuming a typhoid form and rapidly terminating in death, occur among pigs not unfrequently in our country, but still more so on the continent.

The cause of these epidemics is obscure. Some attribute them to unwholesome food, to ill-ventilated sties, or exposure to heat or to wet and cold, to want of water, &c. But these things affect only individuals; and we see not, though they may cause the illness and death of many animals, how they can produce an epidemic disease—which, moreover, is asserted to be contagious like the small-pox.

The symptoms of these epidemic diseases somewhat vary; but they begin with the usual symptoms of fever, which soon assumes a typhoid form. At first the animal appears dull, and neglects its food; it evinces great thirst; the bowels are constipated, and the urine diminished. The animal groans, the abdomen becomes hard and tumid, the flanks heave, and the breathing is short and oppressed. Afterwards there is a distressing cough; the eyes become watery, the mouth not unfrequently covered with ulcers, and mucus drips from the nose; the skin is covered with petechiae or gangrenous spots; the animal reels or becomes paralysed, sinks on the second, third, or fourth day, and often dies convulsed.

On examination after death, the chest is found filled with bloody serum, the lungs diseased, and the pleura exhibiting traces of inflammation; the heart is gorged with blood, as is also the liver, and the intestines present
traces of inflammation. The substance of the brain, moreover, is often found in a morbidly soft condition, and even that of the spinal cord.

There is little hope of doing any good in such diseases, except at the commencement of the attack. In the first stage, before the typhoid symptoms manifest themselves, bleeding is advisable, to be followed up by active aperient drenches and enemas; a seton should be made in the skin of the chest, and stimulating embrocations rubbed along the spine. The abdomen should be fomented with hot water, or the animal may be put into a hot bath, and the drink should be slightly acidulated with white wine vinegar; the diet should consist of gruel. Should these measures allay the inflammatory action the animal will gradually recover, though it may be long in a weakly condition and require great attention. We need not say that every pig labouring under illness should be removed immediately from the rest, and placed by itself. This observation applies generally, as well as in the present case.

PHRENOITIS, BRAIN FEVER, OR INFLAMMATION OF THE BRAIN.

Inflammation of the substance of the brain or its membranes is not uncommon in pigs, especially when they are put suddenly upon an abundance of nutritious food, or food of too heating a quality. At first the animal appears dull, listless, and disinclined to move; the eyes are red, the bowels constipated, the pulse hard and quick. In a short time, as the disease makes progress, other symptoms appear—the animal becomes frenzied, runs wildly about, is incapable of discerning objects, and strikes against them; the respiration becomes laborious, the animal staggers,—perhaps becomes paralyzed, falls, and dies. Effusion has taken place, or a blood-vessel has given way. In the first stage of the attack alone will any measures be useful. Blood must be freely taken, and active aperient medicines, with enemas, administered. A couple or three drops of croton-oil, with about a
ON THE DISEASES OF SWINE.

Drachm of tincture of ginger, in a little gruel, have been found effective; as have also castor-oil and jalap, followed up by doses of sulphur. The head should moreover be kept cool by means of cloths dipped in vinegar and water with sal ammoniac dissolved in it—(Vinegar 1 pint, water 2 quarts, sal ammoniac 1 oz.)

APOPLEXY.

Apoplexy is generally speedy in its course. A little previous dullness has perhaps been observed—suddenly the animal falls, struggles, becomes insensible, and dies. There is no time given for remedial measures, but the lancet should be instantly resorted to.

In some cases the course of the disease is not so rapid nor the symptoms so severe. The animal does not fall, but staggers about, while its eyes are glaring and blood-shot and their sight is dim or gone. The brain is gorged with blood, and instant relief must be given. The treatment must be the same as that directed for inflammation of the brain, and may perhaps be attended by success.

EPILEPSY.

This frightfully convulsive disease occasionally attacks swine, sometimes without any perceptible warning, except, perhaps, a little more restlessness than usual, which may have been displayed by the animal for two or three days previously, but without eliciting much notice. In most cases the animal drops suddenly, and becomes dreadfully convulsed. It shrieks, it grinds its teeth; the tongue, which is protruded, becomes bitten; blood and foam drip from its jaws; its eyes appear starting from their sockets, and roll wildly about; the limbs are alternately drawn up and then violently struck out, and every muscle is spasmodically agitated. After a longer or a shorter duration, the fit begins to subside, and at last ceases; the animal starts up bewildered, and seems at first uncertain where to go. He gradually becomes more composed, and will perhaps even take food. One fit,
however, is only the precursor of another, and several fits may even occur during the day.

The cause of epilepsy in these animals is obscure. Mostly, perhaps, it proceeds from cerebral irritation, resulting from too great a fullness of blood in the brain, or from some sympathy between the brain and spine, and visceral derangement, the presence of worms in the intestines, or a state of constipation.

With respect to the measures to be resorted to, it is evident that nothing, except throwing a little cold water over the animal’s head, can be done during the continuance of the fit; but as soon as this is over no time should be lost; blood must be taken away, and smart aperient medicines and enemas administered. Salts, jalap, and three, four, or five grains of calomel should be made into a drench, and the salts be repeated at intervals till the bowels act freely. A cold lotion should be applied to the head, as directed in inflammation of the brain, and the animal kept in a quiet, secluded place, as remote as possible from the other pigs; for if there lurks any tendency in them to epilepsy (and, as the mode of feeding has been on the same plan, this is not unlikely), the sight of their convulsed companion, and the noise of its screams, will very probably induce an attack. Indeed, we would advise that the whole of the pigs be treated with doses of medicine for the sake of safety. It is easier to prevent the disease than to cure it. A pig that has had one epileptic fit is ever in danger of another. They recur more and more frequently and the animal dies.

INFLAMMATION OF THE MUCOUS MEMBRANES OF THE NOSE, OR NASAL CATARRH.

This disease is indicated at first by a more than usual discharge from the nose. It gradually increases, and the animal is dull. By degrees the inflammation extends to the pharynx, gullet, and larynx. The animal now begins to cough. It swallows with difficulty, and holds down its head. The mucous membrane now begins to swell, and
the nose to thicken and assume a distorted appearance; the mucus is mixed with blood, or a discharge from the nose of pure blood takes place, which perhaps gives a temporary relief; but in a short time all the symptoms appear in an aggravated form, and the animal gradually sinks.

Cold and dirt are among the causes of this disease. Some regard it as analogous to the glanders of a horse, and state that, like the glanders, it is hereditary, and derivable from either the male or female parent.

The catarrh is only curable when taken in time. Aperient medicine, warm mashes, a clean dry sty, and abstinence from a stimulating diet of barley, peas, &c., constitute the plan of treatment. Some recommend the use of emetics.

INFLAMMATION OF THE GLANDS OF THE THROAT, QUINSEY, OR STRANGLES.

This malady is extremely infectious; consequently no pig labouring under it should be permitted to remain in the same sty with others. It is somewhat insidious, or rather perhaps, it is overlooked until the swelling of the throat is considerable, and the animal breathes and swallows with decided difficulty. No time should be lost in the treatment. The swelling will rapidly increase, and an effusion of serum will take place; the tongue now hangs from the mouth, dripping with saliva; the head is fixed in one position; there is a husky cough; and the breathing is laborious. The tumid part now becomes gangrenous. The animal rapidly sinks.

The treatment consists in the abstraction of blood, in aperient medicines, external blisters, and irritant embrocations to the throat, the hair being previously shaved off, and a substitution of cooling mashes, with a little nitre, for better food. Tartar emetic ointment is an excellent external irritant. Should the swelling suppurate, open the abscess at the proper time, cleanse it thoroughly from the purulent matter, and apply a poultice. The ulcer will, if the pig do well, heal with a simple dressing.
INFLAMMATION OF THE LUNGS.

Like other animals, pigs are liable to this disease, which is vulgarly called "heaving or rising of the lights." It most frequently occurs in damp, ill-ventilated piggeries, where noxious effluvia taint the air; sometimes, however, no assignable cause can be detected, though several pigs may at the same time be labouring under it; we may perhaps then attribute it to some condition of the atmosphere tending to excite it.

The first symptoms of inflammation of the lungs consist in dullness, fever, loss of appetite, a hurried respiration, heaving of the flanks, and an incessant cough, which is evidently painful. If now neglected, tubercles form on the lungs, they suppurate, and the animal dies in a state of pulmonary consumption.

The animal must be bled, and mild purgatives given. The hair between the fore legs and on the chest should be shaved off, and the skin well rubbed with tartar emetic ointment, as a counter-irritant. The animal should be put upon a diet of mashes, and kept in a dry, warm place, and nitre sprinkled in the water of its drinking-trough. If the pig can be cheated into taking it, sedative medicine may be given, composed of two grains of digitalis powder, six grains of antimonial powder, and half a drachm of nitre, in gruel. The aperient medicine may consist of about four drachms of Epsom salts, and as much sulphur. We suppose the animal to be of a good moderate size. In severe cases, a seton between the fore legs might be serviceable. Should the pig recover, let it be gradually fattened for the butcher. It is unwise to breed from a sow whose lungs are tuberculated.

INFLAMMATION OF THE BRONCHIAL TUBES, OR BRONCHITIS.

Pigs, like oxen, and especially calves, are liable to this disease, with the same collection of worms in the bronchial
tubes, indicated by a wheezy, husky cough, loss of appetite, a laborious breathing, a disinclination to move, and a rapid falling away of flesh. The animal dies a mere skeleton, often suffocated at last by the thickening of the lining of the air tubes, and the collection of mucous and parasitic worms.

Should the inflammation happily be unaccompanied by the presence of these parasites, it may be subdued by bleeding, aperients, cooling medicines, and proper diet; but if they be present there is little chance of success. Perhaps doses of common salt and lime-water, as recommended by Mr. Mayer in the case of the sheep (dose of salt, from one-half to one ounce; of lime-water, three, four, or five ounces daily), may be useful; or Mr. Dicken's plan of a mixture of linseed oil, spirit of turpentine, and oil of caraways.

INFLAMMATION OF THE BOWELS, OR ENTERITIS.

Enteritis, or inflammation of the intestines, may be brought on by cold, wet, filthy sties, bad food, and similar causes. The symptoms are, fever, restlessness, laborious breathing, constipation, and a swollen state of the abdomen, which the animal often forbears to press on the ground, leaning only on its breast and fore legs. Sometimes it walks round and round, staggering, and sometimes forces its head against any object, as if for support. Prompt measures must be resorted to before the animal begins to sink.

Oleaginous purgatives and enemas must be freely administered, and the warm bath used, or fomentations applied to the abdomen. Castor oil is the best purgative; two, three, or four grains of calomel may be added, or given separately. It may be perhaps advisable to take away a little blood. This disease often ends fatally, the mucous membrane of the intestine exhibiting points of ulceration, and black or gangrenous patches.
INFLAMMATION OF THE PERITONEAL COAT OF THE INTESTINES AND OF THE ABDOMINAL CAVITY, OR PERITONITIS.

In the human subject the diagnostics between peritonitis and enteritis are far more clear than among our domestic quadrupeds. Brutes cannot express their feelings. Our dissections of animals of all kinds, kept in the richest vivarium in Europe, have proved to us that pure peritonitis is one of the most common diseases, and is seldom, nay, never cured. It runs a rapid and unsuspected course. The animal cannot explain its feelings; it appears drooping in the evening—it is dead by the morning. On dissection we find effusion in the abdominal cavity and peritoneal inflammation, often of surprising extent. Could the disease be taken a principio, free bleeding, active aperients, enemas, warm baths, and fomentations, might be available; but how is this disease to be taken in time by the veterinary surgeon, especially in the case of the hog? Peritonitis does not, as some say, "gradually waste away its victim," as we by long experience can testify: it is short, sharp, and sudden in its course. Hundreds and more of cases have come under our scalpel. Enteritis is slower; and this, often involving inflammation of the peritoneum, may have induced some to suppose that peritonitis was the primary disease. With respect to treatment, little is to be said. Bleeding, calomel, aperients, and enemas, are alone to be depended upon; but the time for administering these medicines is generally passed by when the most discerning veterinarian's advice is solicited. In the human subject, peritonitis is one of the most formidable diseases which the physician is called upon to combat.

INFLAMMATION OF THE LIVER, OR HEPATITIS.

This disease is uncommon in swine. The liver in these animals is of small size comparatively, and seldom seems
to have its functions disturbed. In this respect the distance between the sheep and the hog is very great. Hence we may pass this viscus without comment.

**INFLAMMATION OF THE SPLEEN, OR SPLENITIS.**

Although the liver is seldom the subject of disease in this animal, the spleen is not so. Instances are on record in which congestion and rupture of the spleen have taken place; and, more than this, one in which a certain absorption or wasting away of it had occurred, judging by a post-mortem examination; although, for ourselves, we are inclined to believe that a preternatural smallness of the spleen existed, irrespective of any disease in the case in question, seeing that the animal was healthy and fat, and weighed fifteen score.—*Veterinarian, 1841.*

The symptoms of inflammation or of congestion of the spleen are not very palpable; they resemble those of enteritis or peritonitis; and indeed, in most cases, the disease of the spleen may be regarded as secondary, being involved in the visceral mischief going on. We cannot separate the treatment from that recommended in peritonitis.

**COLIC.**

Pigs are sometimes, from overfeeding or from improper diet, afflicted by an attack of spasmodic colic; they cry out, they run distractedly around their sty, they roll on the ground, the countenance expresses pain; but there is no fever, and the pains subside and then return.

Smart doses of castor oil and ginger, in warm gruel with a little ale, will soon produce relief; the object is to act upon the bowels, and at the same time soothe them by a little cordial.

**DIARRHŒA.**

Diarrhœa occurs among swine in cold, wet sties, fed upon unwholesome food and garbage; it is more com-

K
mon, however, among young pigs, and ought not to be neglected.

An allowance of good farinaceous food will check it, at least in general, and the calves' cordial, as directed in the "Ox," may be resorted to if needful. The observations given there respecting diarrhoea are applicable here.

**TETANUS.**

If certain operations are so unskilfully and brutally performed as to give great torture, tetanus or locked jaw is very apt to supervene. Travelling in broiling weather, and afterwards a sudden chill, have been known to induce an attack. It generally commences by muscular twitchings about the jaws, and spasmodic motions of the head and fore-limbs; then the clenched teeth are ground together, the jaws are set, and the neck and shoulders become rigid. All attempts to force medicine into the throat are useless. Bleeding, enemas of castor oil, and salts in gruel, the warm bath, and the application of irritating unguents or embrocations along the spine and round the jaws, may be useful. It is seldom, however, that the animal recovers, and then it owes its recovery rather to its firmness of constitution than to anything else.

**BABIES, OR CANINE MADNESS.**

This disease is communicated only by the bite of a rabid dog, fox, wolf, cat, or some other animal. The symptoms are awful: at an indefinite period after the bite, varying from three to six or eight weeks, the animal appears dull and refuses food; it begins to utter fearful cries, champs its jaws, foams at the mouth, and looks about with a wild suspicious glance; if it now feeds, it ravenously devours all sorts of filth, which it swallows convulsively; if not positively afraid of water, the animal shudders as it plunges its nose into the trough, and is unable to swallow the fluid, from which it retreats trembling, and if water be thrown over the animal, it dashes about in a state of delirium; the ner-
vous system is wrought up to the highest pitch of morbid excitement. Some now become desperately savage, breaking down their inclosure, leaping over the gate or wall, and rushing at every person or animal with the intent to bite; at last they drop exhausted, and die convulsed. Others continue dull and inert; they stagger blindly about when they attempt to walk, become paralysed in the hinder quarters, utter plaintive cries, and gradually sink. Death usually takes place on the second or third day after the first appearance of the symptoms. All hope of cure is out of the question. No man, we presume, would sell the carcase of a pig that died rabid, even for the purpose of feeding a dog; it is yet a matter of doubt whether or not the flesh of animals which have died rabid can be eaten with safety. Schenkius relates an instance in which some persons who partook (not knowing it) of the flesh of a pig that died rabid, and which was served on the table by an innkeeper in the Duchy of Württemberg—all shortly died of rabies; and similar facts are elsewhere on record.—See Palmarius de Morb. Contag, and Shackmann on Hydrophobia.

It seems almost useless to say that every particle of the straw of a sty in which a pig has died rabid should be burned; the sty, the door, the troughs, the walls, washed with hot water, and then with a solution of chloride of lime; and that the sty should be kept untenanted for a considerable time.

LEPROSY.

This disease, which from the earliest antiquity was known to affect the hog, appears to arise from a vitiated state of the blood, caused by damp, pestilential effluvia, bad food, and impure water. Leprosy consists in the development of small vesicles in all parts of the cellular tissue; they are found in the fat, in the cellular tissue, between the muscles, especially of the ham, the shoulders, the neck and jaws, and also underneath and around the
root of the tongue; they occur in the intestines. These vesicles are regarded as a species of hydatid (cisticercus cellulosus), a parasite allied to that found in the brains of sheep.

The progress of leprosy is insidious; its first noticed symptoms are dullness and a degree of languor, but without perceptible fever; the breathing is not affected nor is the appetite much abated. In a short time the skin becomes decidedly thickened, the bristles lose their firm adhesion, the vesicles in the cellular tissue lying subjacent increase, the hair begins to fall off, and the skin to ulcerate. The leprous vesicles now become abundant, and the most urgent symptoms manifest themselves; the animal drags itself feebly about with a tottering step, it loses all relish for food, the inside of the lips are pale, there are numerous vesicles under the hot, swollen slime-covered tongue, and often violet spots appear about the inside of the mouth; the eyes are dull, the pulse is feeble, the bristles fall off, the skin ulcerates away in patches, large tumours are developed, the body exhales a disgusting odour, and the breath is fetid. Now comes the last stage; the debility begins to be extreme, the posterior quarters become paralysed, the animal utters moans, and gradually sinks a mass of corruption.

In the latter stages of this complaint cure is hopeless. What is to be done must be done at the commencement. Cleanliness and comfort must be first attended to, and the diet should be cooling, simple, and in moderate quantity; a moderate portion of blood may be taken away, and doses of sulphur, Æthiop's mineral, and nitre, may be given daily, and occasionally a gentle aperient with a little ginger. The skin should be well washed with soap and water, and afterwards with equal parts of lime water and infusion of tobacco, or anointed with the following unguent:—Flowers of sulphur $\frac{1}{2}$ lb., common turpentine 1 oz., mercurial ointment $\frac{1}{3}$ oz., linseed oil $\frac{1}{3}$ pint. The ulcers may be washed with a solution of chloride of lime.
MEASLES.

The cause of this disease in swine is obscure; some regard it as an epidemic very similar to the disorder called by the same name in the human subject; while others consider it as a milder form of leprosy, and certainly not without some good grounds; it requires treatment as a cutaneous disease, which measles in the human subject does not.

Measles in the pig appears in the form of a subcutaneous affection, and consists in a vast number of small watery pustules below the outer sward or skin, and indeed generally scattered throughout the cellular tissue. On the surface of the skin appear numerous raised reddish patches, at first on the more tender parts, as the inside of the thighs, the flanks, and under parts of the fore arm. These gradually spread and become more or less universal. In the meantime the animal becomes feverish and sickly, loses its appetite, and is dull and feeble, especially in its hinder limbs; there is a discharge of mucus from the nostrils, a frequent cough, and a swelling of the eyelids; dark pustules are found under the tongue, and ultimately the surface of the skin desquamates.

The cure of measles, common as the disease is, is by no means very easy. Cleanliness and attention to diet are very requisite; and half a drachm or a drachm of sulphur, with a scruple or half a drachm of nitre, may be given three times a day in gruel or mash at the usual feeding hours; generally, by perseverance, this mode of treatment will ultimately prove successful.

The flesh of pigs affected with the measles, or with leprosy, is pale, flabby, insipid, and, what is more, positively unwholesome.

MANGE.

Mange in the pig is analogous to itch in the human subject, or scab in sheep; it is a pustular cutaneous
affection, arising from the burrowing ravages of a minute insect (*acarus*). Cooling medicine, and the application of sulphur ointment, with a little mercurial ointment, diluted with a sufficient quantity of linseed oil, will generally effect a cure; some employ a lotion of weak tobacco water. A lotion, consisting of a decoction of soot in water (the fluid after decoction being strained from the soot), and used, when cold, as a lotion two or three times a day, is said to be efficacious. The great preventives are cleanliness, good food, and air. When pigs are infested with lice, as they are apt to be when kept in dirty sties in which there is no ventilation nor any comfort, the ointment above named, or the infusion of tobacco, will prove a remedy, conjoined with a good washing and a change to a clean abode. A little mild aperient medicine may be advisable.

**Treatment of the Sow during Pregnancy.**

On this subject little need be said. A pregnant sow should be fed neither too luxuriously nor too niggardly. Good condition is requisite, for she will have to nourish a numerous litter; but at the same time her strength must be kept up, and an extra allowance of nutritive food granted, especially when she has produced her brood. Some weeks before parturition she should have her own allotted sty, or shed, according to the farmer's convenience. As the time of parturition approaches she should be watched, but not disturbed. Her bed and all around her should be scrupulously clean, and her hours should pass in undisturbed tranquillity. Abortion in the case of a sow is of rare occurrence, unless indeed she has been the subject of foul ill-usage. And now the day of her parturition is instant. Does all go on well? if so, wait the termination. Some recommend that the young ones as soon as born should be removed from the mother, kept in some warm spot, and not returned to her until all is over, and the placenta has been passed away. This is all nonsense. Who removes the young of the wild sow?
Yet we are gravely told, “that young sows especially will invariably devour the after-birth if permitted; and then the young, they being wet with a similar fluid and smelling the same.” If this be true, how the pig population of the world has been maintained we cannot tell. On this subject, to which we have already adverted, it is useless to waste words. *Let Nature have her free course; let not instincts be curbed and thwarted.*

There are occasionally cases of parturition in which surgical aid is required. Let the veterinarian be immediately called in. The anatomy of the uterus of the sow, with its double cornua, the conformation of the pelvic bones, and other points which we need not here specify, render it necessary to call in scientific assistance. In the *Veterinarian* (vol. xiii.) a successful case in which the Caesarean operation was performed is recorded. Mr. Cartwright, V. S., was the daring and skilful operator. Happily the necessity for such operations is of rare occurrence, nor ought a procedure so hazardous to be undertaken rashly.

It is a remarkable fact that sows more frequently produce monsters of deformity than any other of our domestic animals. Several of these have, at different times, come under our personal inspection; and of many others we have heard and read. On this subject we have no theory to propound, and we confess our ignorance of the influential causes operating in the production of such abnormal objects; neither is it easy to say to which parent the defect is owing. The safest plan is to breed no more from a sow who has once produced monstrosities, and to adopt another male; indeed, among the progeny of some boars by different sows, one or more specimens of monstrosity, either from superabundance of members or deficiency, have been found in every litter.

So far then have we given a history of the domestic hog, not excluding an account of its wild relatives, and more particularly of the common wild boar, the progenitor of our domestic stock. And here we shall close. We pretend not to be initiated into the mysteries of pickling
pork, or of curing hams or sides of bacon. Some little variation in the process occurs in almost every county, and also in various countries, and many farmers follow plans of their own. Saltpetre, bay-salt, and common salt, with or without sugar or treacle, form the preparation for curing bacon and hams. In some places the smoking system is adopted, in others not.

MEDICINES EMPLOYED IN THE TREATMENT OF SWINE.

Few medicines are requisite in the treatment of swine. Of these the chief are common salt, Epsom salts (dose, from ½ oz. to 2 oz.), sulphur (dose, ½ oz. to 1½ oz.), useful as the basis of ointments for cutaneous diseases. Nitrate of potass (dose, 1 scruple to 1 drachm), ginger (dose, from 1 scruple to 1 drachm), croton oil (dose, from 1 to 3 drops), castor oil (dose ½ oz. to 2 oz.), jalap, (dose, 1 scruple to ½ drachm). Besides these we may mention oil, mercurial ointment, and turpentine, as ingredients in ointments, mixed with sulphur for cutaneous affections. Turpentine, it may be observed, is useful in cases of worms; it may be given in doses of about half an ounce or more, in gruel.
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