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Cover photograph: Oedemera nobilis (Coleoptera: Oedemeridae), photographed in London’s Battersea Park, one of its most central London localities. Photo: Richard A. Jones.

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EDITORIAL
PUBLICISING NEW SPECIES TO BRITAIN

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Introduction
Many entomologists eventually find species that turn out to be new additions to the British list. Obviously some species will have been overlooked in the British fauna and come to light through taxonomic revision. Some will be found in old existing collections. Others will be found from new fieldwork and may have been overlooked (i.e. always been here) or have recently arrived.

The following is not about describing species new to science, for which the International Code of Zoological Nomenclature should be followed.

I believe it is important to publish new additions as soon as possible after they are first found, especially if they are the result of recent fieldwork. How else can we track the possible establishment and subsequent distribution?

Remember that there is a legal obligation to report to the Plant Health and Seeds Inspectorate (a division of the Department for Environment, Food and Rural Affairs) any species that might be injurious to plant health (see paper by Cannon et al., British Journal of Entomology and Natural History, 14: 90–91). In turn PHSI should assist entomologists and themselves by publishing details quickly of any species that they have found in the UK. It should also be remembered that the publication of a new species to Britain is not only of interest in Britain. Entomologists outside the UK will subsequently become aware of the new record and be able to use the information themselves.

Is it new to Britain?
The decision that a species is new to the British list may have followed a long trail of detective work: checking a variety of reference works from different parts of continental Europe (and beyond), consulting colleagues, and comparing specimens. Then what? At best a paper would be published summarising all the work done to date and presenting it for others to use. It may be announced at a meeting, perhaps presented at a BENHS evening meeting or the Annual Exhibition, and written up briefly but not in detail. Worse, nothing happens or the follow-up publication never happens.

Checklist of requirements for publication
Sometimes the collector may be unsure of how to present the detail of the capture. The following is a brief checklist of what I believe ought to be published about each species that is added to the British checklist.

Context
How well is the British fauna known in the group to which the new species is being added? Are there any recent checklists or keys? Is this a species likely to have recently arrived and become established or one that is likely to have been overlooked in the British fauna? Is it a casual importation that is unlikely to survive here?
Where was the species found?

The locality, habitat type and the date and circumstances of the discovery should be given.

Are there similar British species and how do they differ? A key should be given if appropriate. How does the species differ from others in the same genus (if there are some)? If a new genus and species how do the genera differ? Basically the question to be answered is “How can I identify the species again without the use of other literature?” Yes, of course keen amateurs will likely have accumulated or have access to key literature published outside the UK but a description of a new British species should ideally be as complete as possible without the need to refer directly to other sources.

Give drawings of the species to illustrate the differences

Some say that they cannot draw or do not have the facilities. I do not see any special problem in adapting some existing drawings (with reference and acknowledgement to the source). Permission to use existing copyrighted illustrations can be asked of journal publishers. It is unlikely that fees would be charged for scientific use.

Distribution of the species elsewhere, biology and known host plants

It is helpful to know where the species is found in its distribution elsewhere (whether or not it is likely to have arrived recently or been overlooked). Any biological information should be reviewed.

Deposition of the specimens

There is no obligation to deposit voucher specimens of new British species in National Museums (unlike type specimens of species new to science). However, I strongly believe that such significant specimens should not reside in personal collections and should be lodged in Museums and publicly accessible collections. The paper should indicate where specimens have been lodged.

My thanks to Alan Stewart (University of Sussex), Peter Barnard (BMNH) and Andrew Halstead (Royal Horticultural Society, Wisley) for helpful comments.

Editor’s Note

The draft article on publicising species new to Britain by Mike Wilson was circulated to several entomologists and they in turn have expressed their views. The points made by Dr Chris Malumphy were more substantial and so have been published in the form of a reply. If others wish to submit their comments to the journal then the Editor will be pleased to publish them. As one who believes in the advice that “a picture paints a thousand words”, the inclusion of an illustration seems obvious. One only has to try imagining how to juggle with the mental images of text, say, describing two similar Carpet moths, when one illustration or photograph does the trick. Our eyes can often pick out critical secondary features that add to “the jizz of an insect”, that are not mentioned, or at least, highlighted in species’ descriptions.

John Badmin
REPLY TO THE EDITORIAL

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In reply to the recent Editorial written by Mike Wilson, regarding the reporting of new species to Britain, I would like to highlight the following five points:

1. The importance of clarifying the status of “new species” in Britain.
2. The repercussions of calling an insect “British”.
3. The constraints within which the Central Science Laboratory (CSL) operates.
4. Information on outbreaks and interceptions of alien species recorded by the Plant Health and Seeds Inspectorate (PHSI) in England and Wales is available on the Internet.
5. Finally, how CSL and the Department for Environment, Food and Rural Affairs (DEFRA) can improve co-operation and share intelligence more effectively with other entomologists.

As already mentioned in the Editorial, it is absolutely vital that the status of the organism in the UK is made clear in any publication (including checklists). For example, whether the “new species” record is simply based on a detection (e.g. interception on imported produce, a vagrant or migrant caught in a light trap) or on a naturalised population (e.g. a breeding population likely to persist for the foreseeable future).

Making the status clear is important as records of new plant pest species can have legal and financial implications. British checklists of insects contain numerous species, including many economically important plant pests, which are not currently established anywhere in the UK. These are often based on old records, single interceptions on imported plant material or brief transient populations. This information is easily and frequently misinterpreted by overseas phytosanitary services and can have a direct impact on the UK agricultural and horticultural industries, by the imposition of prohibitions or additional measures/costs for our exports. One example is the Mediterranean fruit fly, Ceratitis capitata (Wiedemann). This is a major fruit and vegetable pest and is listed in the phytosanitary legislation of many countries. It is not currently known to occur anywhere in the UK although the PHSI have detected it on imported plant material in England and Wales on many occasions. Unfortunately for potential UK exporters, Massee (1940) reported an apple tree being attacked by C. capitata in Middlesex in 1939. Smith et al. (1997) suggest that the UK may have records of short-lived adventive populations as well as interception records and it is listed as an “imported species” in the Royal Entomological Society Checklist (Chandler, 1998). Such listings have resulted in Japan, Taiwan, the Republic of Korea and the Republic of China prohibiting the import of an extensive list of fruit and vegetables (hosts of C. capitata) from the UK, on the grounds that they may harbour the pest.

The wording used in the fourth paragraph “In turn PHSI should assist… publishing… any species that they have found in the UK” is contentious and implies that all interceptions should be published as “new British Records”. The majority of the species intercepted by the PHSI are transient finds, vagrants, or short-lived populations, which are incapable of surviving outdoors in the UK and will probably die after a short period. The Checklists of Insects of the British Isles contain
numerous examples of non-indigenous insects following publication of a single incidental finding. For example, 45 of the 57 Diaspididae listed by Boratynski & Williams (1964) are non-indigenous and most do not currently occur in the UK.

Accepting something as “British” should imply something about its biology, for example, that it is capable of surviving and breeding under British climatic conditions (with allowances for repeated seasonal migrants, etc.). This in turn allows biological predictions and risk assessments to be made. Many interceptions are made on plants that are not true hosts or on plant material whose country of origin differs from the insect, for example, thrips can easily move between plants at flower auctions and wholesalers. Some workers question the value of publishing interceptions on imported plant material as “British” records.

The CSL also encounters other difficulties and delays regarding publishing records, unlikely to be met by the wider entomological community. An appropriate policy (e.g. containment, eradication, monitoring), based on a survey and risk management, has to be decided for each new pest encountered and this can take time. Policy implications have to be considered. In addition, the majority of samples collected by the PHSI are from commercial premises and we cannot publish precise locality details due to customer confidentiality.

There are also restrictions due to limited resources and lack of interest shown in publishing such lists by most journals. The Invertebrate Identification Team of CSL provides the PHSI with up to five thousand identifications each year, consisting of approximately 500 invertebrate taxa. Checking and publishing these data takes up a large amount of time, but efforts are being made to put data on the Internet. Some information on the detection of alien species in England and Wales by the PHSI is already available on the Internet, although this is aimed at the plant industry and phytosanitary services. Significant finds, incursions and outbreaks of new plant pests in Britain are reported on the DEFRA Plant Health Service website (http://www.defra.gov.uk/planth/what.htm). The European and Mediterranean Plant Protection Organisation (EPPO) publish monthly reports of interceptions of regulated alien pests notified to the European Commission (EC) (http://www.eppo.org/PUBLICATIONS/EPPO_RS/reporting_service.html), and highlight new plant pest introductions in the EPPO region (http://www.eppo.org/QUARANTINE/Alert_List/alert_list.html). The CSL is currently considering publishing a more comprehensive summary of interceptions on the Internet.

We fully appreciate that amateur and other professional entomologists are exceptionally important to the work of CSL and PHSI, and we must do all that we can to encourage, stimulate and work with them to ensure that we know as soon as possible when potential alien pests are found. We trust that other entomologists appreciate the importance of informing the PHSI as soon as possible, if they find a non-indigenous plant pest or potential plant pest.

I would like to express my sincere thanks to the Journal, on behalf of DEFRA Plant Health Service, for permitting us to provide a timely and reasoned response to the Editorial. It has raised a series of important issues and further dialogue would be welcomed, either personally or via the Journal. Alternatively, it might be useful to convene a one-day seminar with interested parties to discuss in an open way ideas of disseminating new records, and to decide on how best to accommodate our mutual interests. Any feedback from you would be welcome.

Finally, I would like to end on a positive note with an example of how things work well. An Asian psyllid, *Cacopsylla fulguralis* (Kuwayana), was first identified in Britain by the CSL and the Natural History Museum in April this year. Within a
month the EC was notified and interviews given on radio and TV. In June a Plant Pest Notice (Malumphy et al., 2002) was issued, a scientific note submitted for publication in July (Malumphy & Halstead, 2002) and a popular magazine article published in August (Gianfrancesco, 2002).

REFERENCES


BOOK REVIEW


In recent years the Kent Field Club, the Natural History Society of Kent has published books on the butterflies, amphibians and reptiles of Kent. The latest in the series, “Dragonflies of Kent” is a millennial publication. The decade-long survey confirmed that eleven damselfly and 21 dragonfly species occur in Kent. Amazingly, a new migrant dragonfly species, the Small Red-eyed Damselfly Erythromma viridulum (Charpentier), was recorded shortly after the book went to press and has since been found breeding in the county in the landscaped lakes at Bluewater Shopping Centre. The earliest dragonfly record for the county dates from the Cretaceous Period, a mere 135 million years ago!

Each species of damselfly and dragonfly is illustrated with a line drawing of the species in situ, painstakingly drawn by Gill Brook. For each species there is a map of its present distribution in Kent and an account of its life history. Symbols on the maps differentiate between confirmed breeding, when exuviae of the last instar nymphs were found, probable breeding when mating and egg-laying were observed, and sightings of adults only. There are 16 colour plates of the more dramatic species and a gazetteer giving details of the best places in Kent to watch dragonflies. The book is an easily readable summary of the status and distribution of Odonata in Kent. Sales have exceeded expectations and a reprinting is under consideration.

John Badmin
A SPRUCE WEB-SPINNING SAWFLY, *CEPHALCIA ARVENSI S* (HYMENOPTERA: PAMPHILIIDAE) FROM BRITAIN

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Some specimens of sawflies identified with *Pamphilius vafer* (L.) and *P. pallipes* (Zetterstedt) were recently sent to me for study from the Hope Entomological Collections, Oxford. In this series I found a female of *Cephalcia arvensis* Panzer, 1805, a notorious pest of spruce (Pschorn-Walcher, 1982). It is widely distributed in Europe, from Siberia to northern China (Xiao et al., 1992), but has not been recorded from Britain (Quinlan & Gauld, 1981). The specimen is an old printed one labelled “Lichfield, L. A. Carr“ and with an accession label “Coll. L. A. Carr. Bght. 1929” [printed Bght or bought] and it represents the first collection record from Britain. It is not perfectly clear, however, if this sawfly actually occurs in Britain, because no other British specimens are known. The female may have been brought into Britain by accident or the specimen may bear wrong labels, though the L. A. Carr collection is regarded as all British (D. J. Mann, personal communication) and there is no positive reason to suspect mislabelling. Further collecting in spruce forest is necessary to ascertain occurrence of this species in Britain.

The female is very light-coloured (“irrorata” type) and resembles *C. fulva* Battisti & Zanocco, known to occur in Italy, the Czech Republic, Germany, and northeastern China (Kraus, 1998). Battisti & Zanocco (1994) mentioned that “the females of *C. fulva* can be distinguished from *arvensis* and *irrorata* (the latter now recognized as a colour form of *C. arvensis*) by having a bigger head, not constricted behind the eyes, and a rich orange-yellow colour pattern, extended also to metanotum (in *arvensis and irrorata always black)“. The British specimen has the metanotum half pale brown and half black, but in other characters (particularly the shape and colour of the head) it agrees with *C. arvensis*.

In Britain, another species of the genus, *Cephalcia lariciphila* (Wachtl) is known. This is a pest of larch (Billany & Brown, 1980; Shinohara, 1997). *Cephalcia arvensis* is distinguished from *C. lariciphila* by its much paler colour pattern; the antennal scape and abdominal venter are mostly pale in *C. arvensis*, whereas they are mostly black in *C. lariciphila* (see Beneš, 1976, and Achterberg & Aartsen, 1986, for more details).

I wish to thank Dr George C. McGavin and Mr James Hogan, Hope Entomological Collections, Oxford University Museum of Natural History, Oxford, for the loan of material, and Mr Darren J. Mann of the same institution for his helpful information on the L. A. Carr collection.

REFERENCES


SHORT COMMUNICATION

Dorcatoma dresdensis Herbst (Col: Anobiidae) and its parasite Diospilus ephippium (Nees) (Hym: Braconidae) reared from Phellinus pomaceus.—Examination of some brackets of the uncommon wood-decay fungus Phellinus pomaceus, 7.ii.1999, revealed a small number of beetle grubs. A section of the bracket was retained for rearing. Two adult Dorcatoma dresdensis Herbst were later found in the rearing chamber together with about 7 or 8 specimens of the parasitic wasp Diospilus ephippium (Nees). The brackets were characteristically on a blackthorn stem and the host bush was located in an old overgrown hedge. The location was Churn Bank, Elkstone, E. Glos (SO91) and the hedge forms the upper boundary of an area of ancient wood pasture along the banks of the River Churn.

This Nationally Scarce beetle has only once previously been reported from the county (Alexander, 1995), from a Ganoderma adspersum bracket on an ancient parish boundary beech at Rendcomb (SP00) in 1994—a locality only five miles downstream along the Churn Valley. This area appears to be a hot-spot in the county for the genus as D. flavicornis (F.) was reared in numbers from red-rotted heartwood of a fallen oak branch gathered the same day a short distance downstream, the first record of this species for the county since 1919 (Atty, 1983). Singleton of the beetle Aderus oculatus (Paykull) and an Eustalomyia anthomyiid fly also emerged from this material. Other species present at the site include Orchestia micans (Panzer), typically developing in brackets of Inonotus hispidus on the old ash pollards in the valley. This Orchestia is very widespread in this fungus throughout the Cotswold Hills—I know it from fourteen 10 km squares in the county, mainly in old wood-pasture or ancient wood-edge situations. This is in marked contrast to O. undulata Kraatz which is confined to the larger ancient oakwoods and old parklands and the rarer O. minor Walker, which is also confined to the Cotswold ancient woodlands.

Thanks to Ted Green for finding the fungus and to Mark Shaw for identifying the wasps.—K.N.A. ALEXANDER, 14 Partridge Way, Cirencester. Gloucester GL7 1BQ.

REFERENCES


SOME FURTHER RECORDS OF CHRYSOrina AMERICANA (L.) (CHrysOMELIDAE) IN LONDON

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Chrysolina americana (L.), the ‘rosemary beetle’, is a striking rainbow-coloured leaf beetle which, in spite of its misleading scientific name, is a characteristic insect of southern Europe where it is extremely abundant on rosemary Rosmarinus officinalis L. and lavender Lavandula spp. (Lamiaceae) in rural and urban areas. It is extending its range northwards in Europe, having recently reached Belgium (Lays, 1988) and The Netherlands (Beenen & Winkelman, 2001). It was first recorded potentially breeding in the UK at the Royal Horticultural Society Gardens at Wisley (TQ0558: VC17) (Halstead, 1996), and on lavender near the Shell Building, London (TQ3079: VC17) (Menzies, 1999). A single specimen was taken in a garden at Bookham Common (TQ1256: VC17) in 2000 (Barclay & Menzies, 2001) and specimens were taken in 1998 at Dinton Pastures Country Park (Halstead, 1999) and Winnersh (Smith, 2001), Berkshire (both SU77: VC22). There is also a colony in the grounds of the Tate Gallery, Middlesex (TQ3078: VC21) (BMNH Enquiries database, number 2000/68), and unpublished records from Leicestershire, Cambridgeshire, East Norfolk and Essex (Salisbury, 2002). Here we contribute some recent records and observations from London.

In September 2001 R.T. Thompson and P. R. Kirwan-Taylor took an example on ‘curry plant’ Helichrysum sp. (Asteraceae) in a garden near Walton Street, Chelsea (TQ2778: VC21); over the next week several more were found in the same garden on rosemary, a much more probable host-plant. Two specimens were taken walking on a wall in Imperial Road, Fulham (TQ2676: VC21), one at 11.30 p.m. on 9.x.2001 (DJM) and the other at 10.30 p.m. on 21.xi.2001 (MVLB). There was no obvious lavender or rosemary nearby, the only plant being a large Russian vine Fallopia baldschuania (Regel) (Polygonaceae) which may have provided shelter for hibernation. On 10.x.2001 MVLB took an example, covered in dew, on a wall in Castelnau, Barnes (TQ2277: VC17) at 08.00 a.m. A garden nearby had recently planted rosemary and lavender bushes. It is noteworthy that the three last specimens had moved, by night, some distance from their host-plants. It is possible they were searching for suitable hibernation sites, but Salisbury (loc. cit.) suggests that the species remains active and feeds during warm spells throughout the winter months. Further observation of the species’ seasonal behaviour in Britain may help to explain these nocturnal movements.

We visited the Shell Building colony twice during 2001. On the first occasion on 16.vi.2001 at 4 p.m. around 50 specimens were observed clustered, immobile on the flower heads of the lavender. On 17.x.01 at 6.15 p.m. the lavender plants had been cut right back, and only two C. americana were observed, running actively over the plants; perhaps members of this colony were also dispersing away from the host-plants. This colony has been present since at least 1997 (Menzies, 1999), and appears to be quite robust. Exhalant heating ducts which blow warm air over a part of the Shell Building colony may benefit the species by raising the ambient temperature by a
few critical degrees. Nonetheless, the colony’s small size makes it very vulnerable to use of insecticides, change in land use, or irresponsible collecting.

It is difficult to say whether single specimens collected around London are the result of natural dispersal from existing populations, or whether they represent independent introductions with newly purchased plants or substrate from infested garden centres or abroad. Unlike many *Chrysolina, C. americana* is able to fly (Jolivet, 1997). The rosemary in the Walton Street garden was long established, while the plants in the Barnes garden appeared to be newly planted. Although apparently suitable patches of lavender exist all over London (where it is a ubiquitous street plant) the beetle is still extremely patchily distributed.

On 22.iii.2002 a female *C. americana* was noted on the wall in Imperial Road by MVLB suggesting that the species had successfully overwintered at this site. On 5.vi.2002 a specimen was brought to MVLB from Lavender in a garden at Merton Park, Wimbledon (VC17:TQ2469) by A. Galsworthy.

Our thanks to R.T. Thompson, P.R. Kirwan-Taylor and A. Galsworthy for allowing us to use their London records of *C. americana*. Thanks also to Andrew Salisbury and Duncan Sivell for helpful comments.

REFERENCES


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SHORT COMMUNICATION

A *gynandromorph of Gonepteryx cleopatra* L. (Lepidoptera: Pieridae).—Purchased at the 1999 Amateur Entomologists’ Society annual exhibition from Nigel South of Misterton, Somerset, who took it at Párga, Greece (39° 18’N, 20° 23’ E) in May 1998, and presented at the 1999 BENHS annual exhibition (*British Journal of Entomology and Natural History*, 13(3) p. 153 Plate 2, Fig. 10). The specimen is predominantly male with areas of pale green/white female coloration on all the wing surfaces. The data and dull yellow underside patches identify it as *G. c. cleopatra* f.
**italica** Gerhard (= f. massilensis Foulquier) (Tolman & Lewington, 1997). Photomicrographs were exhibited showing selected upperside details.

In mammals, the sex of an individual is determined indirectly by the sex chromosomes it carries, through the kinds and relative proportions of the sex hormones thus produced in the gonads and circulating in the blood. Females carry two ‘X’ chromosomes (denoted ‘XX’), on account of whose likeness they are referred to as the homogametic sex, while males carry one X and a dissimilar ‘Y’ (denoted ‘XY’) and represent the heterogametic sex (Ford, 1957). In Lepidoptera, in contrast, it is the male which is homogametic and the female heterogametic, with the ‘X’ and ‘Y’ equivalents being denoted instead as the ‘Z’ and ‘W’ chromosomes respectively (Harmer, 2000). Furthermore, in Lepidoptera the sex of each cell is determined directly by the two sex chromosomes contained therein. Development proceeds through the process of cell division. The two sex chromosomes in the ‘parent’ cell are duplicated, and the cell then divides in such a way that each of the two ‘progeny’ cells receives one copy of each of the two ‘parent’ chromosomes. Thus a male ZZ cell will divide to give two ZZ cells, and a female ZW cell will give two ZW cells, with normal individuals comprising cells all of the same sex (Ford, 1957).

However, abnormalities in cell division may occur and can produce gynandromorphs (Ford, 1957). The key determinant of sex is the number of Z-chromosomes (two in males, one in females) which provide the deciding balance of male-determining genes, rather than the presence or absence of a W which is functionless in determining sex. Cells receiving any other number of Zs die. In the *G. cleopatra*, tissue that would normally have developed as male has developed as female. Such a condition can arise in two ways. The first is the loss of one of the duplicated Z-chromosomes in a dividing parent cell, resulting in one ZZ and one Z progeny cell. The second is an unequal allocation of the duplicated Z-chromosomes to the progeny cells, so that one becomes ZZZ and dies while the other becomes Z. In both cases the ‘Z’ cell will be female and continue to divide as such, resulting in a mosaic of male and female tissue. When the loss of a Z occurs in the egg at the first cell division, a bilateral gynandromorph results.

Should the duplicated Zs in a dividing ZW cell be unequally allocated to the progeny cells, then one of them becomes ZZW and thus male, while the other becomes W and dies. This mechanism cannot therefore produce the bilateral condition.

Gynandromorphs are distinct from ‘intersexes’ which result from too even a balance between the number of male-determining genes on the Z-chromosomes and female-determining genes on the non-sex chromosomes or ‘autosomes’. This can arise when individuals from locally evolved populations interbreed, or when species are hybridised. Intersexes are also distinct in that they start developing as one sex but later switch to the other, and thus can have structures of an intermediate type. Gynandromorphs and intersexes are both forms of ‘hermaphrodite’, which describes any animal where the two sexes are combined, by whatever means (Ford, 1957).

Gynandromorphs represent a class of homeotic transformation, where tissue typical of one part of an organism develops at a position typical of another tissue type. In gynandromorphs, pattern features typical of one sex develop at the corresponding position in the other sex (Nijhout, 1991). In common with many gynandromorphs, the *G. cleopatra* showed several unconnected and variably sized patches of transformed tissue spread randomly across the wings, a pattern of transformation commonly referred to as a ‘mixed gynandromorph’, and the specimen described above represents the only case known to the author of a predominantly male mixed gynandromorph of the species: a predominantly female
mixed gynandromorph of *G. c. cleopatra* taken by R. W. Parfitt in 1974 at St Tropez, France (43° 16′ N, 6° 39′ E), and currently in the possession of Peter May of Bognor Regis, W. Sussex, was presented at the Amateur Entomologists’ Society’s Annual Exhibition at Kempton Park, London on 7.xii.2000. In Lepidoptera, each wing scale represents a single cell of one colour-type only. Assuming each patch of cells to have originated from (and so be a ‘clone’ of) a single mutated cell, the transformation must have occurred many times independently on different parts of the wings.

The cause of such mutations is not well understood, but the resemblance of gynandromorphs to the somatic variegation known in plants and vertebrates suggests they may be due to transposable genetic elements that move and insert themselves at points in the chromosome DNA (Nijhout, 1991). Environmental stress can increase the rate of transposition, and some transposable elements may be able to move between cells as appears to be the case in fruit flies, *Drosophila* (Pollard, 1988). Indeed this might explain the occurrence of the gynandromorphism on all eight wing surfaces, despite the establishment during development, of autonomous developing regions or ‘compartments’ whose boundaries homeoetic clones cannot cross (Sibatani, 1980; Goodwin, 1984; Ho, 1992). Alternatively, transposable elements could have been already present in each compartment, but separately activated.

I thank Barry Lockyer of the School of Biological Sciences, Southampton University, for his assistance in producing the photomicrographs, and Peter May for permission to cite the additional record.—LEONARD WINOKUR, Flat 3, Charles Court, 7 Darwin Road, Southampton, Hampshire SO15 5BS.

REFERENCES


BOOK REVIEW


This is the third volume in this series to deal with a major family of water beetles. It follows a similar format to the previous volumes on the Hydraenidae and Hydrophiloidea with some differences.

This catalogue lists all the taxa described up to the end of September 2001. All taxa of the same rank are listed alphabetically not systematically. For each taxon a reference is given to the original description. The distribution of each genus and species by zoogeographical region only is given, together with the number of species in each taxon. For genus-group names, the type species and how and where the type species was designated are given, and in most cases a reference to a work containing a modern description. For species-group names, the type locality and a characterisation of the existing types are given. A reference is given to lectotype and neotype designations, and the current and original combinations are given. For most valid names a reference to a work containing a modern description is given. For each subjective synonym a reference is given to the work in which the synonymy was given for the first time.

Fossil taxa are listed separately. There are appendices listing infrasubspecific names and ‘nomina nuda’, and species excluded from the family.

The catalogue includes an index to the specific and supraspecific taxa treated. The bibliography includes all published works containing original descriptions of taxa of Dytiscidae, and all the works cited in the catalogue.

Up to date catalogues are an essential tool not only for the taxonomist but also for all those involved in studying biodiversity. However the problem with printed catalogues is that they are out of date before they are produced. It should be possible to produce regular updated electronic versions of catalogues such as this one, which could be made available at a nominal cost to the purchasers of the original printed version. Let us hope that the publishers of this and other catalogues take this into consideration.

Brian Levey
THE FUTURE OF THE COUNTY INVERTEBRATE ATLAS

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Abstract. County atlases need to move away from the traditional dot-map approach to one that helps to answer questions and poses new questions to be tackled as part of the development of Biodiversity Action Plans. This is an opportunity for the entomological community and others to demonstrate the contribution that the amateur naturalist has made, and is making, to our knowledge of the British fauna. Projects such as the Surrey Wildlife Atlas series clearly demonstrate that a new approach is possible, but there is also a need for innovative approaches to sponsorship, marketing and fund management. This account discusses some of the lessons learnt during production of one volume for the series and provides guidelines for future recorders.

INTRODUCTION

At the dawn of the 20th Century the Victoria County Histories provided the main written record of the fauna of the Counties of Britain. These accounts were based on an imprecise knowledge of the full extent of the British fauna and, as such, many must be treated with a degree of caution. Even so, they remain an important historical record and the foundation for subsequent accounts. Since then, biological recording has been transformed. The national mapping schemes organised through the Biological Records Centre at Monks Wood are best known, but can only produce an outline of overall national distribution. The production of county accounts by local enthusiasts, even simple lists that outline the general extent of individual species’ distributions (e.g. Chandler, 1969), were an important advance, but county atlases provide a much more detailed picture of plant and animal distribution at a local level.

Early mapping schemes largely comprised the collection of data sufficient to produce dot maps, but often failed to capture a great deal of incidental information which makes a recording scheme really worth supporting. Such data remain in the national datasets and are a disappointment because so much more could be done with them today if only they were more detailed. At a local level, publications might also have included accounts of noteworthy species from particular sites, or records of rarer species, but in today’s world such accounts are of limited value unless some interpretation is attached and data are provided to properly identify the locations of their occurrence.

Amongst the models available in the mid-1980s when the Surrey Atlas recorders started work were Emmet & Pyman (1985) and Evans & Evans (1973) for moths; Rotheray (1979) for hoverflies; and Burton (1983). Lousley (1976) and Philp (1982) for vascular plants. At that time, the botanists, especially Lousley, were the only ones to make a serious attempt to consider biogeography in any detail. Even today, new works place very little emphasis on interpreting invertebrate distribution in relation to drift and hard geology, yet this concept is well known and has been adopted for some time by English Nature as a foundation for local conservation strategies (the concept of “Natural Areas”). The importance of these physical attributes for invertebrate distribution cannot be over- emphasised. For example, the solid geology
will affect the nature of groundwater emerging from flushes, and depending upon the level of base-richness, this will affect the distribution of assemblages such as soldier-flies. Equally, the general porosity of surface layers will also affect the distribution of other species such as those associated with thermophilic conditions and good drainage; thus there is coincidence between such species and drift deposits such as the periglacial sands of Lincolnshire and East Anglia.

**The Potential Worth of the County Atlas**

Any atlas is a snapshot in time, reflecting what the enthusiasts consider important at that moment. But, today's atlas will have a far wider audience. This is particularly true in terms of nature conservation where land-use planning requires environmental assessment, and major conservation initiatives are directed through the Biodiversity planning process (DoE, 1994; DoE, 1995). Both draw on the published understanding of localised distribution of plants and animals, but it is the latter which could be an important driver and opportunity for the entomological community.

Depending on the available literature and previous interest in a particular group, the historical record is the foundation for any new atlas. What have been the additions, changes and losses over recorded time? Published records for a particular area are, however, highly dependent on a sequence of field naturalists with relevant interests working the same area over a long timescale. The bulk of the atlas will, however, concentrate on the known current distribution of individual species. Given sufficiently detailed recording, they are the foundation upon which Biodiversity Action Plans may be formulated in a county context. With few exceptions, however, it is unlikely that the current generation of maps will properly reflect many major declines or expansions, because of the inconsistencies and disparities between past and present recording effort. Moreover, real changes can only be properly identified by standardised recording methods, which are largely outside the scope of county schemes.

Even so, expansions and contractions of range can be discerned and are sometimes well publicised, e.g. the demise of the large blue *Maculinea arion* (L.) and the expansions of range of Roesel's bush-cricket *Metrioptera roeselii* (Hagenbach), the long-winged cone-head *Conocephalus discolor* (Thunberg), and the bee-wolf *Philanthus triangulum* (Fabricius). All of these have been quite dramatic and are therefore well known, but slower declines or expansions are harder to pick up with poor historic coverage and inconsistent levels of recording. Thus, today's atlases, which should be the foundation for establishing trends in distribution and frequency, must be based on comprehensive, detailed and accurate records which are accessible in the future.

In recent years, county atlases have been an important vehicle for developing ideas on invertebrate indicators and assemblages. Starting with dead-wood hoverfly assemblages first proposed by Stubbs (1982), Whiteley (1987) refined the concept and added a series of possible wetland hoverfly indicators, to which there are now ideas on heathland and chalk downland hoverfly assemblages (Morris, 1998). All of these indicator lists have largely arisen from the county atlas process, and scope for developing indicator assemblages improves with greater knowledge of a particular biogeographic zone. For example, in Surrey, an extensive range of possible heathland and chalk grassland/woodland indicators could be proposed, drawing on detailed maps for butterflies (Collins, 1995), dragonflies (Follett, 1996), larger moths (Collins, 1997), hoverflies (Morris, 1998) grasshoppers and crickets (Baldock, 1999), ladybirds (Hawkins, 2000).

Habitat indicators can be helpful in conservation management, and interpretation of datasets supplied for sites. They are particularly useful for the non-specialists who
would not otherwise know the range of species with particular habitat affinities but may need to as part of their job (e.g. Conservation Officers in English Nature or the Wildlife Trusts). For example, the presence of species with particular habitat affinities included on lists for sites that do not support such habitats may raise doubts about the records themselves or may suggest that records represent vagrants. Equally, the absence of specialist species from lists may give an indication of the impacts of particular management regimes or the degree of recording effort. Whichever is the case, such records require further investigation.

The Surrey Wildlife Atlas series has shown that county atlases can also be used for disseminating new biological information, including those odd anecdotal comments that might be lost in a notebook or obscurely noted in a journal. For the entomologist it is an excellent opportunity to provide new information on food plants, flower visits, prey items or behavioural observations. With sufficient data, local phenology can be depicted. Similarly, investigations into changing frequency or responses to climate could lead to a more rounded and comprehensive publication. If, however, the principal recorder is not greatly motivated by such fields, the data are centralised and might be forwarded to others for more detailed investigation. The key message is that the establishment of a recording scheme is an opportunity to create a data set which may be of use not only now, but also across a range of applications in future, both nationally and by local records centres.

The production of an atlas has the potential to be an important driver for renewed recording activity. It can either stimulate individuals to visit sites which they have not visited previously or may encourage them to forward the data they hold in notebooks or in machine-readable form. Both of these impacts are important, firstly in widening the available coverage; secondly by capturing a body of information that was hitherto largely inaccessible. Ideally it should also lead to improved recording quality as well as ensuring that relevant data are incorporated into the data set.

**LINKS TO BIODIVERSITY PLANNING**

A great deal of effort and money is going into the production of national, regional and local Biodiversity Action Plans. Partnerships led by statutory conservation agencies (Countryside Council for Wales, English Nature and Scottish Natural Heritage) the national voluntary organisations (e.g. RSPB and the Wildlife Trusts) and local authorities (County, Metropolitan, Unitary or District Councils) have been established. Key to the delivery of Biodiversity plans is the survey and monitoring package that evaluates needs and successes; this is the National Biodiversity Network (NBN). RECORDER 2000 is intended to provide the means of capturing the data and provides the links between local records centres and national initiatives to monitor the status of British wildlife.

Usually, the first point of action for lesser-known taxa is a new survey. This is a major opportunity for local recording schemes to work in partnership, where recorders provide the data and, hopefully, the Biodiversity partnership provides the resources to disseminate the results; but it must be a symbiotic relationship. Recorders must recognise that the data collected has more of a purpose than simply producing a dot map or guide to the best places to record/collect insects; and the Biodiversity partnerships must not simply see the recorders as providers of information on the cheap.

Entomologists are encouraged to supply data not only to recording schemes, but also to site owners and managers. A simple list of species recorded is often the best that a site manager can expect, so the publication of a county atlas that helps to put
the records into context is of particular value. This should augment the advice and information provided in the various national reviews (e.g. Falk, 1991; Kirby, 1992; Hyman & Parsons, 1992). A further improvement to an atlas would be the inclusion of notes on specific conservation measures which may be helpful in a county context, spelling out the importance of particular habitats or features which are overlooked, scarce or under-valued.

A well produced and researched county atlas may also act as the vehicle for disseminating the actions needed to secure the well-being of locally or nationally threatened species. Follow-on projects could be initiated in a similar way to the work of the BENHS on the hoverfly Chrysotoxum octomaculatum Curtis, the robberfly Asilus crabroniformis Linnaeus and the bee-fly Thyridanthrax fenestratus (Fallén) (Miles, 1999).

Population Trend Analysis

Analysis of the data collected for Surrey from 1985 to date provides a number of indications of population and phenological trends. For example, the apparent declines in frequency of the hoverflies Rhingia campestris Meigen and Platycheirus peltatus (Meigen) are discussed in Morris (1998). The analysis of Rhingia campestris stimulated further countrywide analysis leading to a much better understanding of the relationship between the frequency of this species and periods of drought (Ball & Morris in prep.). Changes in the emergence times of Epistrophe eligans (Harris) are also apparent over the same period (Morris, 2000), showing that this species has undergone a clear shift towards earlier emergence. Extensive recording has also provided an opportunity to evaluate the real or perceived scarcity of particular species. A good example of this is that of the bee Hylaeus cornutus Curtis which is listed as Red Data Book 3 in Falk (1991), but is actually widely distributed across ruderal sites in the London suburbs (Morris, 1992).

These examples illustrate how important it is for recorders to get away from the concept of only visiting 'good' sites, retaining records of just the spectacular or scarce species, or simply noting first and last dates of occurrence. There are a number of key messages which all entomologists would be advised to take on board:

- Make an effort to record from sites that do not immediately strike you as exceptional.
- Retain data on all species encountered, not just the rarities.
- Try to retain material from other taxa which can be forwarded for identification by others.
- If you run static traps (such as malaise traps) try to get as much material as possible identified by offering material to recorders of taxa other than those in which you are interested.
- Try to retain quantitative as well as qualitative data.
- Encourage friends to take a similarly enlightened approach.

Data Requirements and Lessons

Ball and Morris (1992) provided clear instructions to recorders of the national Hoverfly Recording Scheme, which might usefully be repeated here:

1. All records should comprise a full date, the site name and name of the recorder. Recorders should not give a date range (e.g. 1978–1995), as this is not even helpful in producing a dot map across date classes.
2. A four-figure grid reference is the minimum required; six-figure references are more desirable but only if they can be accurately ascribed to the location of capture.
3. Where possible, records should be accompanied by notes on flower visits, oviposition behaviour or prey items.
4. Details of the habitat should be provided, but generalised notes such as ‘hedgerows, grassland, woodland and scrub’ are fairly meaningless. A more detailed description of the site as a whole would be helpful, and in particular a description of the site of capture.
5. Details of site ownership should be given if known.
6. The altitude of the capture site (in metres or feet) is helpful.
7. If records are passed on third-hand, they can often lead to confusion unless they are conveyed accurately.

As a minimum, the first two criteria are essential.

Most recording schemes have a tendency for the maps to reflect recorder effort and not the true distribution of species (Rich, 1998). To overcome this, the Surrey Wildlife Atlas Project recorders have made strenuous efforts to visit as many otherwise unrecorded sites (tetrads) as possible. As a result, 95% of the 540 tetrads in Surrey were visited during the hoverfly survey for example; this included many sites that would have failed to inspire the majority of entomologists and which frequently yielded few noteworthy records.

Ideally, data should be collected in an entirely consistent manner, ensuring that coverage is even both in terms of recording intensity on a particular visit and in terms of the numbers and spacing of visits over a season, as described by Rich (1998). There is, however, a long way to go before there are sufficient recorders who are both taxonomically competent and committed to data collection. Furthermore, recording invertebrates is largely dictated by favourable weather, so employing the rigorous survey that botanists can adopt is simply not feasible. At this stage the key lessons are:

- Encourage recorders to visit as wide a range of sites as possible.
- Encourage repeat visits over the entire season.
- Encourage collection of material for schemes in addition to your own.
- Push for as much detail as possible.
- Provide feedback on gaps in the data.
- Be prepared to discount data that are incomplete or seemingly inaccurate.

Even with a very active recording scheme organiser, the vast bulk of records are likely to come from a nucleus of perhaps a dozen individuals, with small-scale contributions from many others. To be a success, a scheme needs to show that it is making progress and is giving feedback. Production of a newsletter is one obvious way of giving feedback, but other ways include making an effort to contribute to other schemes; such data are appreciated and may lead to better links between recorders. Importantly, making an effort to collect a wider range of data than just one’s own interest area means that the returns from time and financial costs of survey are maximised. Also, it is quite surprising just how often one gets a disproportionately large number of records of scarce species when collecting groups other than one’s own specialism.
DATABASE MANAGEMENT

There are a number of good databases on the market (e.g. MAPMATE), but the most versatile is RECORDER 2000, marketed by the UK Joint Nature Conservation Committee. Despite this versatility, it is not regarded as a straightforward package and has attracted disparaging comments to the extent that the majority of recorders prefer other packages. Ideally, before starting to enter data, establish whether the local records centre (often run by the County Wildlife Trust) has a standard list of sites and boundary maps. Synergy with others will ultimately mean that data can be more readily incorporated into a database, which is used to safeguard sites and inform the Biodiversity process. Some centres may even establish close links with you so that you get help with setting up your database.

The maps produced for this article and for the Surrey atlases were all produced using the UK DMAP package (in its Windows version). This is a very simple package, but there may be a need to create new boundary files unless they can be obtained from other sources. For further information on this program and its implementation, see Morton and Collins (1992).

ATLAS PRODUCTION

Planning the project is always very difficult without an idea of the likely format and the funds that might be available for inclusion of illustrations and photographs. Even so, it is worth starting the writing process early on. This allows time for the development of ideas, which can be tested as the project develops; for example testing the validity of possible indicator assemblages or impressions gained of the ecology of particular species. Literature searches often yield interesting anecdotes, which lighten the text and may also provide avenues for investigation if undertaken at an early stage. Likewise, it is important to plan for photographic illustrations and to make sure that they will be available.

If a county atlas is to be of any real use today, bearing in mind the need to establish links with geology and known distribution of habitats, it is essential to chose a scale for mapping that can be used to interpret patterns of distribution. To emphasise this, Fig. 1 depicts the distribution of the hoverfly Cheilosia soror (Zetterstedt), a known indicator of calcareous habitats. Even the shift from tetrad (2-km square) to 5-km squares masks the distribution considerably, whilst that for 10-km squares is next to useless. This is an important lesson to remember and emphasises just how important it is to get as detailed and widespread coverage as possible. It is also important to remember that mapping packages can translate more accurate grid references into the cruder grids used for mapping, but cannot do this in reverse if the data are not that accurate in the first place; thus all data should be stored in their most accurate form.

MARKETING AND SPONSORSHIP STRATEGIES

The Surrey Wildlife Atlas Project provides a useful model of how a series of publications can be achieved using pump-priming. The Project is a partnership between local recorders and the Surrey Wildlife Trust, with the recorders undertaking the fieldwork and preparing the texts, and the Trust undertaking the
The distribution of *Cheilosia soror* in Surrey

Distribution at tetrad level (2km²)

Distribution at 5km² level

Distribution at 10km² level

Fig. 1. The distribution of *Cheilosia soror* at 2 km, 5 km and 10 km.
typesetting, print management and marketing. Production of the early volumes was also greatly helped by the Trust making no charge to the production account for typesetting costs which were done ‘in house’, although this is of course an option that is not always available to other projects.

The project started with popular volumes (Butterflies and Dragonflies) that would attract sponsorship and would sell well, which meant that a reserve of income was quickly generated and could be used to offset the costs of later publications. Running at one volume per year, this has been possible for the first seven years, but as less popular groups are covered there has been a need to seek further priming sponsorship. Even so, for a relatively modest level of sponsorship (ca. £22,000), a widely applauded series (7 volumes) has been produced and has established the foundation for many future titles. The important lesson is the value of creating a loop whereby income from sales underpins the next volume, a model that could be adopted by Biodiversity partnerships across the country.

The Surrey Wildlife Atlas project opted to produce volumes that were both informative and attractive. Colour plates are incorporated at considerable cost, but these make the series appealing to a much wider audience and perhaps also make them more marketable to those with just a passing interest in, say, hoverflies or larger moths. Some reviews have questioned the scientific worth of such illustrations (e.g. Agassiz, 1998), but in marketing terms they are invaluable. Indeed, such an approach can greatly enhance the reputation of a series e.g. Marren (2002) who compares favourably the extent of colour plates in Reptiles and Amphibians of Surrey (Wycherley & Ansis, 2001) with those of the comparable New Naturalist. This may not offer the scientific purist any comfort, but it is important to remember that sales to a wider audience mean that income is maximised early on and books do not end up stockpiled (they can take up a great deal of space and are not earning anything).

Recouping costs quickly is an important factor in allowing the establishment of an ongoing series; in my view, a title going out of print relatively quickly (given a reasonable print run) is a good thing because it has proved popular and generates income for future titles. Thus, pricing is a fine balance between achieving sufficient return on the investment to fund future volumes and setting a price that attracts readers who might not otherwise make such a purchase. The Surrey Wildlife Atlases are noted for their reasonable price: for example Marren (2002) remarks on this achievement when comparing the recently published Amphibians and Reptiles volume with the comparable New Naturalist. However, trade sales of the Atlas series, which comprise a not insignificant proportion of the sales, do little more than recoup costs on unit price.

Deciding on the length of the print run is very important. A short print run puts up the unit price, whilst longer runs reduce the unit price and increase storage costs. Before deciding on a print run, consider seeking advice from others who have published similar works and get an idea of what the market will support. Figure 2 provides some feedback on the relative marketability of the Surrey Wildlife Atlas series. Likewise, it is worth weighing up the merits of softback and hardback; the unit cost of hardback is not that high, but can substantially improve a book’s marketability. Similarly, the format is important. Remember that bigger formats demand greater shelf space and balance this against the benefits or disadvantages that such a format gives in terms of layout. The Surrey Wildlife Atlas series is A5, a format which seems to work very well. The main issue to consider is how to get back the original investment sufficiently quickly that it can be reinvested in another title.
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*Excluding postage & packing.
**Including trade sales.
1Full details obtainable from Surrey Wildlife Trust, School Lane, Pirbright, Woking, Surrey GU24 0JN.

Fig. 2. Production details of the Surrey Wildlife Atlas series to January 2002.

LIMITATIONS

In promoting the establishment of a county atlas project, it is also important to bear in mind a number of possible long-term issues, which need to be addressed. Firstly, an atlas is only as good as the level of recording achieved, and good coverage demands considerable effort. Work on the moth and hoverfly volumes started in 1985 and they finally reached the bookshelf in 1997 and 1998 respectively. The Orthoptera volume started earlier still, but stalled with the lack of a suitable publisher. Any prospective recorder should expect to spend around ten years on such a project.

Experience in Surrey and nationally shows that in the period leading up to the production of an atlas there is a definite increase in interest in both recording and submitting records. This rapidly tails off without feedback, and once a project has been completed, interest in further detailed recording wanes quickly. Thus, thought must be given to new projects once the network of recorders is up and running. This is essential if start-stop recording is to be avoided. Secondly, a recording scheme is only as active as the principal co-ordinator, and most co-ordinators are likely to run out of energy; eventually there is a need to think of succession management. Co-ordinators themselves should recognise when their interest has waned and there is a need to find someone with greater enthusiasm to take over a successor scheme.

At the moment, consistent means of recording habitat data are very limited. Not all recorders are necessarily proficient botanists. Furthermore, many do not have access to, say, the National Vegetation Classification (NVC) (e.g. Rodwell, 1992). Equally the NVC may not be the best means of defining invertebrate habitat, which is as much related to structure as it is to species composition. Projects to identify assemblages associated with particular plant communities have a very long way to go, but active and detailed recording should gradually help the process.

CONCLUDING COMMENTS

This account was written following publication of *Hoverflies of Surrey* (Morris, 1998) and after a series of requests for advice on how to prepare and publish an atlas.
It is hoped that it serves that purpose and gives potential recorders some ideas on how to achieve success. The modern county atlas has the potential to appeal to a wider audience than just those students of a chosen subject. This audience may include generalists, ecologists, site managers and consultancies, and of course the statutory nature conservation agencies, so there should be enough for the non-specialist to understand and interpret the importance of particular species or assemblages of species. It is important to bear in mind that the production of atlases is expensive and storage of unsold books is also costly in terms of storage space. Thus it is important to make an atlas or series of atlases sufficiently versatile to the needs of a wider audience and therefore more marketable.

Try to ensure that the data collected are forwarded to the local record centre and national scheme at the earliest possible occasion. These schemes should be seen as the long-term repository for relevant data and may be able to use the data in many other ways. Equally, national schemes may hold data which have not been submitted to the local scheme and should be in a position to download it to you (but be patient).

There is a major chance for the entomological community to provide the sort of feedback which ensures that opposition to collecting does not result in blanket bans and the restriction of entomology to academia and professionals. After all, the majority of our most respected entomological surveyors largely honed their skills in an amateur capacity, and the bulk of the material in museums comes from private collections. At the start of the 21st century, there is scope for a further quantum leap in biological recording providing the foundation for a continuing tradition of amateur natural history recording, which must be the envy of the world.

**Forthcoming Volumes on the Fauna of Surrey**

The Surrey Wildlife Atlas Project will continue to publish new titles. Projects in hand at the moment include Shieldbugs; Bees, Ants and Wasps; and Mammals. There is an embryonic scheme for British Soldierflies and their allies (together with the Conopidae), and also interest in developing a county checklist for beetles.

**Acknowledgements**

It seems a very long while since Martin Newman (then Director of Surrey Wildlife Trust), Graham Collins and I sat in a pub in Pirbright musing over a fine pint and the idea of an atlas series. Following that meeting, Martin developed a business plan which he placed before Surrey Wildlife Trust’s Council. It was a brave Council decision to support the project and one that has given Surrey Wildlife Trust a high profile as a leader in publishing quality county atlases. Today, the Surrey Wildlife Atlas project has received widespread acclaim, with all volumes receiving excellent reviews. With seven volumes on the shelf and at least three more planned, it makes a huge contribution to our knowledge of the fauna of Surrey. Everyone involved in the project owes much to Martin Newman’s enthusiasm for the project and his belief in its financial viability.

The Surrey Wildlife Atlas Project has also been a success because of the combined efforts of individual naturalists who have contributed records and enthusiastic County Recorders. However, equal credit goes to Clare Windsor the designer of the series, to Paul Wickham the present Director of the Surrey Wildlife Trust who has been a strong supporter of the Project, and to Roger Hawkins who has proof-read each volume. It is an example of good practice, which offers a model for others.
I am most grateful to Alastair Kirk at Surrey Wildlife Trust who provided helpful comments on this text and provided the sales figures. I also thank colleagues Rob Cook, Dr Keith Porter and David Stone at English Nature and Dr Tim Rich for their helpful comments on earlier drafts of this account.

REFERENCES
2001 ANNUAL EXHIBITION

Imperial College, London SW7—10 November 2001

The following account of exhibits has been compiled by R.D.G. Barrington (British butterflies), G.A. Collins (British Macrolepidoptera), H.E. Beaumont (British Microlepidoptera), N.M. Hall (Foreign Lepidoptera), P.J. Chandler (Diptera), R.G. Booth (Coleoptera), A.J.A. Stewart (Hemiptera), A.J. Halstead (Hymenoptera and other orders). The photographs for the two colour plates were taken by D.E. Wilson and the cost of printing these plates was met by a grant from the Hammond Memorial Fund.

Exhibits under the theme “Hedgerow Insects” were invited as part of the Annual Exhibition in 2001. The notes from these exhibits have been incorporated in the usual categories but, where appropriate, mention has been made if specimens were exhibited under this theme.

BRITISH BUTTERFLIES

BAILEY, K.E.J.—Temperature shock experiments on various butterflies, applied at the late larval/early pupal stage. Various aberrations were shown of Issoria lathonia (L.), Polygonia c-album (L.), Euphydryas aurinia (Rott.), Apatura iris (L.), Aglais urticae (L.) and Lasiommata megera (L). Little work has been done on temperature shocks in the family Satyridae and so the results in megera are interesting (see also report on exhibit of P. Tebbutt). Unlike the Nymphalids, in which most temperature shock work has been carried out, L. megera showed no smooth range of increasingly aberrant patterns.

Aglais urticae aberrations bred under natural conditions from inbred stock of ab. pseudoconnexa (Cabeau) (in which the central forewing costal black marking is joined to the basal spot on the inner margin). This included a possible example of homoeosis and an interesting new form in which the underside is heavily shaded with brown. This form appeared weak. Temperature shocks on pupae of pseudoconnexa produced a striking combination of this aberration with ab. semiichneusoides (Pronin). (Plate 1, Figs 10,12)

A bilateral gynandromorph of E. aurinia from bred stock.

BJE 2001 Exhib. Plate 1 (opposite)

Butterflies

PLATE 1
BARRINGTON, R.D.G.—Captured aberrations in 2000 and 2001 included a *Polyommatus icarus* (Rott.) ab. *alba-radiata* (Courv.) (Plate 1, Fig. 3). This was probably due to a spell of very hot weather at the time it would have pupated. A gynandromorph of *Maniola jurtina* (L.), forewings male, hindwings mixed, but very unusual in showing its effects on the underside only. Eight female *M. jurtina* ab. *postmultifidus* (Lipscomb), including extreme forms, from a hay meadow in Somerset. About 50 of this rare variety have been seen in this one field over the last four years—a level far higher than has been recorded elsewhere before.

Bred aberrations:

a) *M. jurtina* ab. *postmultifidus*, eight females bred in an F₃ from a wild Somerset female. In the most extreme form the lower half of the underside hindwing central band is entirely obliterated. This is a dominant form and results from previous breeding experiments suggest that the homozygote may be lethal.

b) Eight *Pyronia tithonus* (L.) ab. *multiocellata* (Oberthür) bred in the F₃ generation from an original Devon female. The most well-developed had two very large, pupiled extra spots on each forewing and five on the upperside on each hindwing. This is a multifactorial form.

c) A series of *Pieris napi* (L.) ssp. *thomsoni* Warren bred from Northern Scotland. This included a mixed gynandromorph affecting three wings (Plate 1, Fig. 7) and a female with very heavily scaled forewing veining. The rest of the series comprised ab. *fasciata* (Kautz). The original female showed this form in a minor way and it has been developed through three generations of inbreeding to produce very strongly marked forms. A proportion of the females in each brood was of form *flava* (Kane). This produces females with yellow ground colour on the upper surface, the yellow varying from very pale to intense. Rarely it affects the underside too, but is sex-limited and so does not occur in the male.

BEAUMONT, H.E.—*Anthocharis cardamines* (L.), a gynandromorph, mainly affecting the underside, with streaks of orange on an otherwise female insect. Captured Denaby Ings, Mexborough, South Yorkshire 21.v.2001.

BROWN, D.—*Celastrina argiolus* (L.) gynandromorph, Coventry, Warw., 2001. T. Gosling (Plate 1, Fig. 5).

BUTCHER, A.J.—A very white specimen of *Colias croceus* (Geoffroy) f. *helice* (Hb.) ab. *albisima* (Ragusa) in which even the upperside hindwing discal spot is white. Captured at Alfriston, Sussex on 3.viii.1996.

BUTLER, A.L.—*Lysandra bellargus* (Rott.) ab. *albicincta* (Tutt), Swanage, August 2001. *Aglais urticae* (L.) ab. *semilchneoides* (Pronin), *Polygonia c-album* (L.) ab. *sagitta-album* Frohawk and *Vanessa atalanta* (L.) ab. *klemensiewicz* (Schille) were all produced by temperature shocks to the pupa.

FENSOME, B.—*Maniola jurtina* (L.) ab. *postmultifidus* (Lipscomb), Dorset July 2000. The most extreme of this form on record, with the whole of the hindwing median band broken up and partially obliterated by dark scaling (Plate 1, Fig. 4). *Lysandra coridon* (Poda), a mixed gynandromorph from the Chiltern Hills, August 2000 (Plate 1, Fig. 2). A gynandromorph of *Anthocharis cardamines* (L.), Waresley, Beds., June 2001. *Polygonia c-album* (L.) ab. *suffusa* Tutt, June 2001, and 6 aberrations of *L. coridon* showing minor variation in spotting and ground colour from pupae that were artificially chilled.

HARMER, A.S.—Short series of *Aphantopus hyperantus* (L.) from various localities. This included southern England (Dorset, Hampshire and Sussex), Scotland (Dalbeattie Forest and Barclay Hill in Dumfries and Galloway) and Ireland (Milford, Co. Donegal). Compared to the English form the Scottish race is smaller and greyer on the under surface, with ocelli reduced in size. The Irish form is similar
to the Scottish in wing size and ocelli, but the underside is a darker brown than those from England and Scotland and more heavily covered in yellow scales. In flight even fresh specimens appeared worn.

* A. hyperantus ab. *lanceolata* (Shipp) bred from Sussex stock, and female ab. *lanceolata + arete* (Müller) from a combination of Sussex and Dorset strains.

* Polyommatus icarus* (Rott.), short series from southern England, Scotland (Dumfries and Galloway, Tayside, Highland), Orkney and Ireland (Co. Sligo and Co. Donegal). The univoltine (Scottish and Irish) races tend to be bigger (except those from Orkney) and the females more blue. The males often show ab. *nigromaculata* (Cockerell), with a series of black spots on the upperside hindwing mirroring the position of the black spots in the marginal lunules of the underside.

**Humphrey, D.—**Nine specimens of *Lysandra coridon* (Poda) taken in a Wiltshire locality since 1990, including several ab. *grisea* (Tutt) (Plate 1, Fig. 1).

**Jones, A.M.—**The results of breeding from a captured homoeotic *Argynnus paphia* (L.) showing splashes of underside hindwing coloration on the underside of each forewing. 150 eggs were laid but many were infertile. The F₁ produced 10 typical adults and 11 showing homoeosis. The F₂ from pairings between homoeotic adults was very weak and produced 20 type insects and none showing homoeosis. Out-crossing homoeotic males to f. *valesina* (Esper) females produced 37 typical adults and 15 showing homoeosis. All examples of homoeosis were minor.

Breeding experiments with the fly *Drosophila* have shown that homoeotic mutations can be inherited in a simple Mendelian fashion. This important breeding experiment shows clearly that homoeosis can be heritable too in *A. paphia*, but in a rather more complex, or irregular, pattern.

**Colias croceus** (Geoffroy), 2 aberrations bred in December 2000 in an F₁ from a female captured in west Sussex. A male ab. *chrysotheme* (Stephens) and a female ab. *pseudomas* (Cockerell).

A fine aberrant underside of a female *Boloria euphrosyne* (L.) showing 'obsolete' forewings and unicolored and streaked hindwings. The upperside forewings were 'obsolete' and confluent, the hindwings slightly melanic and confluent. Captured 26.v.2001 (Plate 1, Fig. 11).

Two captured forms of *Argynnus paphia* (L.), July 2001. A male ab. *nigricans* (Cosmowicz) and an extreme female ab. *ocellata* (Frings) (Plate 1, Fig. 13).


**Maniola jurtina** L. ab. *postmultifidus* (Lipscomb). Examples bred in the F₁ and F₂ generations from F₁ larvae of Somerset origin, given to the exhibitor by R.D.G. Barrington. The aberrations were stronger in the F₁ generation than in the F₂. A male lacking the apical eyespot, ab. *anommata* (Verity) emerged unexpectedly in the F₂.

**Pieris napi** (L.)—Specimens showing heavy dark scaling on the veins bred in F₈ and F₉ generations from an original Bedfordshire female captured in August 1997
which was also heavily veined. In the F3, F4 and F5 generations, albino specimens (ab. pallidus Frohawk) appeared but proved too weak to breed.

*Lysandra coridon* (Poda) aberrations from the northern Chilterns included ab. *antidigitata* (B.&L.) and ab. *inaequalis* (B.&L.)

Photographs showing the life history of *Limenitis camilla* (L.)

STOKES, D. — 3 gynandromorphs of *Anthocharis cardamines* (L.). One reared by C. Davidson in 1993 and noticed a few days after emergence in his greenhouse amongst many typical specimens. The second was reared from a wild-collected larva in 2000. The brood was to be released on the assumption that all were type, and this specimen was only noticed at the point of release. The third was captured in a carrier bag from the middle of a nettle patch on 1 June 2001.

TEBBUTT, P. — A range of aberrations resulting from temperature shock experiments. This included some good melanic forms of *Argynnis paphia* (L.), extreme forms of *Polygonia c-album* (L.) and 3 strong aberrations of *Boloria selene* (D.&S.), two showing ‘obsolete’ forewings and blackish hindwings (underside hindwings silver rayed) (Plate 1, Fig. 9). The third showed confluent forewings and black hind wings.

Two *Lasionacta megera* (L.) ab. *mediolugens* (Fuchs) showing darkened central forewing fascia produced by cold-shocking the pupae. Interestingly *mediolugens* can also have a genetic basis, being inherited in a simple Mendelian ratio. These exhibited specimens have no genetic basis but are exact phenocopies of that genetic form.

Various aberrations of *Polyommatus icarus* (Rott.) from cold-shocked pupae. They included examples with partially and totally obsolete spotting and a male ab. *antidigitata* (Courv.) (Plate 1, Fig. 6)

Bred aberrations included an extreme *Lycaena phlaeas* (L.) ab. *rennota* (Tutt) and four *Anthocharis cardamines* (L.) ab. *umbrosa* (Culot) with blackish suffusion of the orange apical patches. Also *Pieris napi* (L.) with light apical markings in both sexes.

Captured aberrations included *P. napi* ab. *confluens* (Schima), *Pyronia tithonus* (L.) male ab. nov. with enlarged areas of fulvous on all wings and *Aphantopus hyperantus* (L.) ab. *cabeau* (Pionneau), showing the spotting completely absent from the forewings and three small spots on each hindwing. An unnamed underside form of *Pararge aegeria* (L.) with three apical ocelli on each forewing, an *Aricia agestis* (D.&S.) ab. *unicolor* (Lempke) and *Hesperia comma* (L.), males ab. *clara* (Tutt) and transitional to *dupuyi* (Ober.) (Plate 1, Fig. 8) and females ab. *suffusa* (Tutt) and *pallidapuncta* (Tutt).

**BRITISH MACROLEPIDOPTERA**


EZARD, A.S.—A selection of moths from the Yorkshire coast, including: _Dasypolia templi_ (Thun.); _Cucullia asteris_ (D.&S.); _Agrotis ripae_ (Hb.); _Mythimna litoralis_ (Curt.); _Apamea furva britannica_ Cock.; _A. oblonga_ (Haw.); and _Scotopteryx bipunctaria cretata_ (Prout).


HART, C.—An immigrant example of _Eupithecia abietaria_ (Goeze) from Reigate, Surrey, 5.vii.2001. There are only four previous Surrey records. [Examples were taken at South Croydon and West Molesey during the same immigration—GAC.]

HENWOOD, B.P.—Photographs of *Bembecia ichneumoniformis* (D.&S.) which were flying over a South Devon beach in the company of *Cerceris arenaria* (L.) (Hym.: Sphecidae) and *Ancistrocerus oviventris* (Wesm.) (Hym.: Eumenidae) which they greatly resembled in flight.

Photographs of larvae exhibiting apparent snake-mimicry, from Central American hawk-moths to British *Idaea*. Although the latter are considerably smaller than the smallest snake, they all exhibit similar patterns with eye-marks and a tapering body.


HONEY, M.R.—Moths from the Wetland Centre, Barn Elms, Surrey during 2001 including: *Rhizedra lutosa* (Hb.) aberration (Plate 2, Fig. 18); *Archanara dissoluta* (Trett.); and a reared example of *Hecatera dysodea* (D.&S.), the first modern record for VC17.

JENKINS, A.—From Scotland: *Scotopteryx chenopodiata* (L.); *Crocallis elinguaria* (L.); and *Apamea zeta assimils* (Double.). From the Great Orme, Caern.: *Idaea dilutaria* (Hb.).


KNILL-JONES, S.A.—Moths from Freshwater, IoW, including: *Mythimna vitellina* (Hb.), 5 and 18.x.2001; *Trigonophora flammea* (Esp.), 20.x.2001; *Cyclophora pupillaria* (Hb.), 14 and 16.x.2001; *Xylena vetusta* (Hb.), 24.iii.2001; *Dryobota labecula* (Esp.), 14–18.x.2001 (3). Aberrations from Freshwater, including *Ennomos alniaria* (L.), 4.viii.2001 (Plate 2, Fig. 9) and *Ochropleura plecta* (L.), 29.viii.1966 (Plate 2, Fig. 13).

LANGMAID, J.R.—From Southsea, S. Hants: *Noctua janthina* (D.&S.), 9.vii.2001—new to Britain (Plate 2, Fig. 11)—together with *Noctua janthe* (Borkh.) to show differences (Plate 2, Fig. 12); *Mythimna favicolor* (Barr.), 24.vi.2001; *Abrostola tripartita* (Hufn.), 4.viii.2001, an asymmetrical aberration.


NASH, S.—Immigrant species from Durlston Head, Swanage, Dorset including the second British record of *Zanclognatha lunalis* (Scop.), 4.vii.2001 (Plate 2, Fig. 15).

PARSONS, M.S.—An example of _Ochropleura leucogaster_ (Frey.) from Walditch, Dorset, 29.xi.2000.

PHILLIPS, J.W.—Lepidoptera captured or reared during 2001 including: _Anarta melanopa_ (Thunb.), Tomintoul, Banff; _Hemaris fuciformis_ (L.), reared from larvae, Chiddingfold, Surrey; and _Chortodes fluxa_ (Hb.), Powerstock Common, Dorset.

PLANT, C.W.—Aberrations of British moths with typical forms for comparison: _Epirrhoe alternata_ (Müll.), Sawbridgeworth Marsh, Herts., 27.vii.1990; _Alicis repandata_ (L.), Conygar Quarry, Clevedon, N. Som., 26.vi.2001; _Timandra comae_ (Schmidt) (_griseata_ (Peters.)), Bishop’s Stortford, Herts., 24.viii.2001, J. Fish & J. Reeves (Plate 2, Fig. 7).


REVELS, R.C.—A leucistic example of _Noctua pronuba_ L., Biggleswade, Beds., viii.2001 (Plate 2, Fig. 14).


SHARPE, P.—Aberrations including: _Spilosoma lubricipeda_ (L.), Dungeness, E. Kent, 16.vi.2001 (Plate 2, Fig. 8); _Lomaspitis marginata_ (L.), Dungeness, E. Kent, 16.vi.2001 and Kingsthorpe, Northants, 16.vi.1999 (Plate 2, Figs 2.3).

SPALDING, A.—Examples of _Luperina nickerlii_ (Frey.) from Cornwall, Essex, north Wales, western Ireland and east Germany showing the range of variation.


TREMewan, W.G.—Immigrant Lepidoptera recorded from Playing Place, Truro, W. Corn. in 2001: _Lithosia quadra_ (L.) (possibly resident); _Orthonama obstipata_ (Fab.); and _Rhodometra sacraria_ (L.).

TUNMORE, M.—Moth aberrations from Church Cove, Lizard, W. Corn.: _Cryphia muralis_ (Forst.); and _Agrotis exclamationis_ (L.).

WARING, P.M.—_Cyclophora porata_ (L.): three individuals from Oakley Wood within Bernwood Forest, an ancient woodland site in Buckinghamshire, 23.v.1984, 31.vii.1984 & 19.vii.1986, representing first and second generation. Data from a programme of intensive light-trapping in Oakley Wood, in which 17 adults were captured in 1984 and four in 1985, were presented. These showed that the adults were more numerous in the second generation and the most productive time to trap them was 1–22 August. The moths occurred in a range of habitats within the wood, from oak woodland consisting of 40-year-old _Quercus robur_ to conifer...
plantations planted in the 1950s, with only scattered oaks and oak scrub remaining.

WEDD, D.—Moths from England and the Channel Isles: *Lymantria dispar* (L.), examples of the long-extinct British race together with moths from the Channel Isles and Europe; *Tachea atriplicis* (L.), examples from England, where it is extinct, and the Channel Isles, where it has recently become established; *Thaumetopoea processionea* (L.), now resident in the Channel Isles, in Britain known only from a handful of immigrants, all since 1983; *Selenia lumularia* (Hb.), an increasingly common immigrant to Jersey, now breeding there—multiple-brooded in contrast to the univoltine British race. Unusual species from Henley-on-Thames, Oxon.: *Discoloxia blomeri* (Curt.); *Meganola albula* (D.&S.); and *Rhodometra sacraria* (L.).

YOU1G, D.A.—Lepidoptera from Tunstall Forest, E. Suff. in 2001: *Hyles gallii* (Rott.), one of two recorded in June; *Herminia tarsierinalis* (Knoch), recorded commonly in the forest and at other sites in the area; *Xestia rhomboidea* (Esp.); *Spilosoma urticae* (Esp.); *Tethea ocularis octogesimea* (Hb.), melanic, 29.v.2001. *Scopula rubiginata* (Hufn.), two broods recorded regularly in the Woodbridge—Ipswich area, E. Suff.

**BRITISH MICROLEPIDOPTERA**

[Nomenclature follows the checklist of Bradley 2000]


BJE 2001 Exhibit plate 2 (opposite)

**Moths**

(D.&S.) and *Evergestis pallidata* (Hufn.), specimens of each from vice-counties 61 & 63; both are spreading northwards and westwards in Yorkshire.


**Butter, P.**—Microlepidoptera from Devon, including *Grapholitha lobarzewskii* (Now.), three specimens; *Donacaula forficella* (Thunb.); *Platyptilia isodactylus* (Zell.); *Catoptria falsella* (D.&S.); *Catoptria margaritella* (D.&S.), localities and dates not stated. *Agriphila latistria* (Haw.), Barnstaple, Devon, the first VC4 record and Porlock, Somerset, dates not stated.


**Davis, A.M.**—An exhibit publicising the Pyralid and Plume Recording Scheme and showing progress since its launch in 1994. Attention was drawn to a recent increase in records of the resident species *Cryptoblabes bistiga* (Haw.) and *Apomyelois bistriatella subcognata* (Rag.) and the potential colonists *Duponchelia fovealis* Zell. and *Sciota adelphella* (F.v.R.).


HONEY, M.R.—Specimens of a nepticulid from the Natural History Museum Wildlife Garden and Buckingham Palace gardens in 2001 which have been identified as *Ectoedemia heringella* (Mariani), a leaf miner of holm oak not previously recorded in Britain.


Sims, I., Chandler, J.M. & Gale, B.A.—An exhibit to mark the fiftieth anniversary of the publication of Biology of the leaf miners by Erich Hering (1951), still the only comprehensive text on minology, and to draw attention to the splendid collection of leaf mines that was bequeathed to the BENHS by the late Eric Bradford. Exhibited were examples of lepidopterous leaf mines and a display of the principal books available for their identification.


FOREIGN LEPIDOPTERA

Corley, M.F.V.—Moths from Serra da Estrela, Portugal, 3–10.ix.2001: Serra da Estrela is the highest mountain range in Portugal reaching 1993m. Some 300 species of Lepidoptera were recorded. About half of these were exhibited. 65% were on the British list. Some of the familiar British species (Arctia caja L., Catocala nupta L.) are very rare in Portugal. A number of the species were new records for Portugal, including the macrolepidoptera Catocala fraxini L., Amphipyra tetra F. and Charissa avilaria Reisser. Different collecting sites on north- and south-facing mountain slopes at altitudes from 750 to 1900m produced summer and autumn species simultaneously.

Dobson, A.H.—Lepidoptera from the outskirts of Puerta de La Cruz, Tenerife, Canary Islands: Pararge xphioides Stdgr, common in residential areas with grassy roadside verges, iii.2001; moths from roadside scrub, near the Jardin Botanico, after dusk, 23.i.2001, including Spoladea recurvalis F., Hypena obsitalis Hb. and H. lividalis Hb.

Colocasia coryli L., Lyantra monacha L., Calliteara pudibunda L., Pseudoips prasinana L., Miltochrista miniata Forst., Eilema deplana Esp., Arctia villica L.

HALL, N.M.—(1) Moths from Fuerteventura (Canary Islands) 29.xi–13.xii.2000: The site was the Oliva Beach Apartments, which is in a tourist ‘island’, surrounded by the Parque Natural Dunas de Corralejo, an area of blown sand with sparse vegetation. Moths were collected at the hotel lights and in an improvised moth trap: an aluminium bar fitted with a lampholder was taken from England and a Skinner trap was built around it with cardboard: Leucania punctosa Treit., Abrostola canariensis Hamp., Polymixis bacheri Püngeler, Tathorhynchus exsiccata Lederer, Cucullia syrtana Mabille, Blepharita usurpatrix Rebel, Idaea volloni Lucas & Joannis, Agrotis lanzarotensis Rebel, Agrotis herzogi Rebel.

(2) Moths from Belize: Illustrations of all the moths NMH had brought back from the December 1998 BENHS Expedition to Belize, plus some additional specimens from Barry Fox and Paul Waring. Each moth was illustrated life size. If the wingspan was less than 21mm it was also illustrated enlarged, usually ×2. The plates were assembled using Adobe Photoshop 6 from separate CCTV video images of individual specimens. They are saved on disk as multi-layered digital images: each (moth) image and each (image) number ‘riding’ on a separate otherwise-transparent layer, which can be replaced, modified or moved around without affecting any other layer. Some of the features of Photoshop 6 (as opposed to earlier versions) make it very suitable for the application.

(3) Bred Idaea from Spain: NMH continued to have reasonable success breeding Idaea from wild-caught gravid females, using the method first described at the BENHS 2000 Exhibition. The essential elements of the method were: (a) a glass specimen tube kept upright to confine small larvae to a small volume, (b) a stopper of toilet tissue to allow the food to dry out, (c) a disc of card at the base to enable larvae that descend to get a good grip, (d) a sprig of Erica for larvae that ascend to rest with good ventilation. (e) Flowers to eat. (Most Idaea larvae can eat petals or stamens even after they dry out, whereas they may not be able to cope with leaves that are too dry. Hence, flowers should still be provided even if the larvae are apparently happy eating something else.) (f) Anything else the larvae will eat (not necessary if they eat Erica). Quantities are kept low. Flowers used included Helichrysium, Cistus, Helianthenum, Ulex, Geranium, Taraxacum, Potentilla and Fallopia baldschuanica (Russian Vine). Helichrysium (Curry Plant) was particularly useful because even tiny larvae can feed exposed and do not burrow in and get lost: (i) Idaea saleri Domínguez & Baixeras, from females 30.vi & 1.vii.2001, El Torn, L’Hospitalet del Infant, Tarragona, emerging from 2.xi.2001, (ii) I. alicantaria Reisser, from female 31.v.2000, Vera Playa, Almeria, emerging 10.vi.2001 & 1.vii.2001, (iii) I. filicata Hb., from female 28.ix.2000, El Torn, L’Hospitalet del Infant, Tarragona, emerging 22.ii.2001, (iv) I. rusticata D.&S., from female 12.vii.2001, Puerto de la Mora, Granada, emerging from 2.x.2001, (v) I. infrimaria Rambur, from female 1.viii.2001, El Torn, L’Hospitalet del Infant, Tarragona, emerging 18.x.2001, (vi) I. eugeniata Millière, from female 27.ix.2000, Montañas de Prades, Tarragona, emerging from 8.i.2001.

(4) Araeopteron ecphaea Hamp. (Noctuidae) from Cala Medio Luna, Almeria, Spain, 7.vii.2001: This is a ‘micro-noctuid’ with a very wide distribution but only recently found in Europe. Michael Fibiger and David Agassiz (Nota Lepidopterologica 24 (1/2):29–35) reported that there were only 19 known specimens of ecphaea, of which 5 were from Spain (3 Mallorca, 1 Cadiz province & 1 Barcelona province). Cala Medio Luna is a sandy beach in an extremely arid part of Spain. The most conspicuous plants are Chamaerops humilis (Dwarf Fan Palm), Agave and Launaea arborescens. 
(Compositae), a spiny bush with green photosynthesising branched stems and few if any leaves. Goats eat much of the vegetation that is not protected by these. The *ephaea* came to MV light and rested with forewings and hindwings both conspicuously visible, rather like some *Idaea*, but with whitish forewings strongly contrasting with blackish hindwings, a combination not seen in *Idaea*.


6) *Cucullia dracunculi* Hb. (Noctuidae) from Pradales, Segovia, Spain, 15.vii.01.


KEMP, R.—‘Mexican Monarchs’, *Danaus plexippus* L.: Monarchs were collected, by kind permission of the warden, dead from the forest floor at the reserve at Sierra Chincua in Michoacan State, Mexico on 3.iii.2001. A diagrammatic sketch was shown of the Oyamel forests west of Mexico City where they overwinter from November to March. Both males and females vary in size, presumably due to differing larval development during the race to become adults in time for the remarkable 4000km migration from Canada and the northern USA to Mexico. Toxic cardiac glycosides obtained by larvae from *Asclepias* foodplants are concentrated in the wings. These wings are normally avoided by predators (small mammals and birds) in favour of abdomens or antennae. In any case only predators which have obtained immunity to the toxins can handle such prey. Due to differences in toxicity, Müllerian mimicry is at play.


DIPTERA

ALEXANDER, K.N.A.—A selection of the more interesting flies found during 2001: *Oxycoera morisi* Curtis (Stratiomyidae), Pendower Beach, E. Cornwall, SW896381, 11.vii; *O. parda* Meig. (Stratiomyidae), Halldale, Dove Valley, Staffs. (VC 39), SK134537, 19.vii, only modern record for area; *Thereva plebeja* (L.) (Therevidae),
Tissington Wood Pasture, Dovedale, Derbys. (VC 57), 17.vii; *Myopa extricata* Collin (Conopidae), Newent Park, W. Gloucs. (VC 34), pair in copula; *Herina longistylata* Rivosecchi (Uldiidae), *Urophora spoliata* (Hal.) and *Terellia vectensis* (Collin) (Tephritidae), all from Glebe Cliff, Tintagel, E. Cornwall (VC 2), SX048883, 9.vii. A full account is given of the occurrence in Cornwall of the two latter species, both developing in saw-wort *Serratula tinctoria*, by K.N.A. Alexander (2002. *Dipterists Digest (Second Series)* 9: 17–18).

**BOYCE, R.—** Photographs of *Anomoia purmundu* (Harris) (Tephritidae), showing combative behaviour among males in his garden at Earley, Reading, Berks, SU763716, 5.viii.1999. Males were gathered in a group some 20 m from the host plant *Crataegus monogyna*; two males were engaged in a trial of strength while the others appeared to be taking an interest in what was going on and a series of challenges continued for some time.

**CHANDLER, P.J.—** Two species of Platypezidae new to Britain: *Microsania vrydaghi* Collart, a male collected by J.W. Ismay at Wytham Woods, Oxon, 2.viii.2001 at bonfire smoke; *Paraplatypeza bicincta* (Szilády), a female from West End Common, Esher, Surrey, 17.x.2001. Accounts of these species are given in consecutive papers by J.W. Ismay and P.J. Chandler respectively (2002. *Dipterists Digest (Second Series)* 9: 22 and 23–24). Only three species of this family had been added to the British list in the past 25 years, so the finding of two more in the same year as publication of the European revision (2001. *Fauna Entomologica Scandinavica* 36: 276 pp.) was surprising.


**DRAKE, C.M.—** Insects overwintering in a house loft at Burridge, Axminster, Devon. Four species of “cluster flies” mentioned by Oldroyd (1964. *The Natural History of Flies*) were exhibited from specimens collected in the loft of the exhibitor’s house. The clusters varied in size from small (about 5 cm across) to large masses up to about 30 cm across, often tucked up where the rafters met the roof. There were probably tens of thousands of flies altogether. *Musca autumnalis* De Geer (Muscidae) was by far the most abundant and there were a smaller proportion (although still large numbers) of *Eudasyphora cyanella* (Meig.) (Muscidae) and *Pollenia rudis* (F.) (Calliphoridae). Both sexes of these species occurred in about equal proportions. *Thaumatomyia notata* (Meig.) (Chloropidae) was also abundant but much less conspicuous and a small sample consisted of females only. Occasional females of *Hydrotaea albipuncta* (Zett.) (Muscidae) were mixed with these. The “cluster flies” were usually focused on a central individual, around which the others faced, producing an attractive radiating pattern of wings, and left no room between each other. All species clustered together and did not segregate by species, although individuals of *P. rudis* often sat alone. *Culex pipiens* L. (Culicidae) and *Chrysopa carnea* (Stephens) (Neuroptera, Chrysopidae) also overwintered in the house.

**GODFREY, A.—** A selection of uncommon Diptera found in 2000 and 2001: *Ormosia fasciopennis* (Zett.) (Limoniidae), two females swept at Coire Brochain, Mar Lodge Estate, Aberdeenshire, 4.vii.00—this species was new to Britain from specimens collected in water traps on the south-facing slope of Coire Brochain in 1986; *Lipsothrix nigristigma* Edwards (Limoniidae), reared from wet logs in a stream, Mercyfield Wood, Blackburn, Lancs, emerged 15.v and 31.v.01—Blackburn is the type locality.
and this was the first Lancs record since the original description in 1924; *Xylophagus cinetus* (De Geer) (Xylophagidae), from two sites in Aberdeen, Linn of Dee, 18.vi.00 and Glen Quoich birchwood (with pine), 19.vi.00, the only other recent records being from Rothiemurchus, Inv.; *Haematopota bigoti* Gobert (Tabanidae), Frampton Marsh, Lincs, 4.viii.00; *Spiriverpa humulata* (Zett.) (Therevidae), reared from river shingle at the River Dee/Quoich Water confluence, 23.vi.01 and Quoich Water, 1.vii.01, both near Braemar, Aberdeenshire, possibly the first rearing records; *Thereva handlirschi* Kröber (Therevidae), male reared from river shingle at the River Dee/Quoich Water confluence, 30.vi.00, apparently the first rearing record; *T. inornata* Verrall (Therevidae), from birch and pine woodland at Doire Bhraghad, Braemar, Aberdeenshire, 22.viii.00; *T. valida* Loew (Therevidae), from a Malaise trap in pine woodland, Upper Quoich, Aberdeenshire, 21.viii.01; *Laphria flavâ* (L.) (Asilidae), Glen Quoich birchwood (with pine), 21.viii.00; *Heleodromia irwini* Wagner (Empididae), Glen Derry, Braemar, Aberdeenshire, 27.vi.00; *Callicera rufa* Schummel (Syrphidae), from a Malaise trap at Dubh Ghleann pinewood, Braemar, Aberdeenshire, 23.ix.00; *Chamaesyris sectaevoides* (Fall.) (Syrphidae), from a Malaise trap at Dubh Ghleann pinewood, Braemar, Aberdeenshire, 23.ix.00; *Parochthiphila coronata* (Loew) (Chamaemyiidae), from the former Sharlston Colliery, Wakefield, W. Yorks, 4.vii.01, a species till recently known only from two coastal dune sites but being found increasingly on brownfield sites inland; *Heleomyza captiosa* (Gorodkov) (Heleomyzidae), reared from a rabbit hutch, Crofton, Wakefield, W. Yorks, ii.00; *Aphanosoma socinum* Collin (Chyromyidae), from the former Sharlston Colliery, Wakefield, W. Yorks, 4.vii.01; *Ilythea nebulous* Becker (Ephydridae), a species new to Britain swept from soft rock cliffs at Musselwick, Pemb, 10.ix.01; *Conisternum tinctinerve* Becker (Scaphthagidae), from a Malaise trap at Dubh Ghleann pinewood, Braemar, Aberdeenshire, 23.ix.00; *Ernoneura argus* (Zett.) (Scaphthagidae), Loch Etchachan, Braemar, Aberdeenshire, 29.vi.00; *Orchisâ costata* (Meig.) (Muscidae), Pwll Penarth, Newtown, Montgomeryshire, 28.vii.00, the second inland record of a species usually recorded from soft rock cliff sites; *Spilogona alpica* (Zett.) (Muscidae), Coire Brochain, Braemar, Aberdeenshire, 4.vii.00; *Cephenemyia auribarbis* (Meig.) (Oestridae), from the River Dee, Braemar, Aberdeenshire, 12.vi.00; *Hypoderma diana* Brauer (Oestridae), Doire Bhraghad, Braemar, Aberdeenshire, 17.vi.01.

Halstead, A.J.—Some Diptera taken in 2001: *Thereva bipunctata* Meig. (Therevidae), swept in former gravel pit, Papercourt Marshes, near Ripley, Surrey, TQ038563, 1.ix.; *Eutolmus rubifurysis* (Meig.) (Asilidae), riverbank wildlife area at RHS Garden, Wisley, Surrey, TQ063591, 15.viii.; *Cheilosia grossa* (Fall.) (Syrphidae), on a dock Rumex leaf, riverbank wildlife area at RHS Garden, Wisley, Surrey, TQ063591, 30.iii.; *Conops strigatus* Wied. (Conopidae), at wild Mentha flower, riverbank wildlife area at RHS Garden, Wisley, Surrey, TQ063591, 10.viii.; *Thecophora fulwipes* (R.-D.) (Conopidae), Brenchley Common, Cornwall, SX054608, 8.vii.; *Acanthophthlus helianthi* (Rossi) (Tephritidae), swept in coastal meadow, Peppercombe, N. Devon, SS382242, 13.vii.; *Ornithomyia avicularia* (L.) (Hippoboscidae), Knaphill, Woking, Surrey, SU964587, on the collector’s arm, 20.viii. with phoretic feather lice (Mallophaga) clinging to the rear end of the fly; *Calliphora vomitoria* (L.) (Calliphoridae), found dead on a grass blade; it had been killed by the fungus *Pandora calliphorae* (Giard) Humber (det. by Dr C. Prior), riverbank wildlife area at RHS Garden, Wisley, Surrey, TQ063591, 17.x.; *Carcelia atricosta* Herting (Tachinidae), in MV trap, riverbank wildlife area at RHS Garden, Wisley, Surrey, TQ063591, 20–21.viii.; *Lophosia fasciata* Meig. (Tachinidae), at hogweed flowers by bank of River Wey at RHS Garden, Wisley, Surrey, TQ064590, 26.vii.
HAWKINS, R.D.—(1) Subcelyia rotundiventris (Fall.) (Tachinidae), reared from a Birch Shieldbug Elasmostethus interstinctus (L.) (Hemiptera, Acanthosomatidae), found on birch Betula near Addington, Surrey, 24.ix.01; there was a white egg under the end of the bug’s abdomen, but the parasitic larva must have already been active, for the bug had died by 9.x and the parasite had emerged and pupated, the adult emerging 22.x.01.

(2) Ceriana vesiformis (Latreille) (Syrphidae), an unusual hoverfly from Montpellier, southern France, 23.viii.2001, resembling a small Doros or even a conopid fly, but the antennae are mounted on a long stalk.

HODGE, P.J.—Nine species of Diptera from southern England and Wales in 2000 and 2001: Stilpion luatum (Hal.) (Hybotidae), Mengham Rythe Sailing Club, Hayling Island, S. Hants, SZ736992, 4.ix.00, abundant in a suction sample in coastal grassland, new VC record; Empis decorata Meig. (Empididae), Green Lane, Ringmer, E. Sussex, TQ465142, 3.vi.01, swept from flowery roadside, and near Tide Mills, Newhaven, E. Sussex, TQ456004, 12.vi.01, swept off buttercup Rhamnus flowers in meadow bordering north side of Mill Creek; Dolichopus signifer Hal. (Dolichopodidae), Mill Pond Marsh, Sidlesham, SZ859972, 4.vi.01, swept in coastal marsh, new V.C. record; Chrysotoxum elegantum Loew (Syrphidae), Caswell Bay, Glam., SS59608751, 29.viii.01, flying along cliff-top path; Noeta pupillata (Fall.) (Tephritidae). Chalk Wood, Bexley, W. Kent, TQ497711, 3.vi.01, female swept in grassy clearing; Acinia corniculata (Zett.) (Tephritidae), St Dunstan’s Farm, Heathfield, E. Sussex, TQ608192, and Bedelands Farm LNR, Burgess Hill, E. Sussex, TQ321121, 10.vii.01, swept off Centaurea nigra in unimproved meadows; Oxyna flavipennis (Loew) (Tephritidae), Bedelands Farm LNR, Burgess Hill, E. Sussex, TQ321121, 10.vii.01, swept off yarrow Achillea millefolium in unimproved meadow; Chetostoma curvinerve Rond. (Tephritidae), Dell’s Piece West. Horndean, S. Hants, SU700126, 16.viii.01, female swept off oak Quercus; Gymnosoma nitens Meig. (Tachinidae), Littlebrook Nature Park, Dartford, W. Kent, TQ555761, 21.vii.00, settled on bare ground in sparsely vegetated grassland.


MILES, S.R.—An exhibit to demonstrate progress in the BENHS Conservation Group, Heathland Flies Biodiversity Project in 2001. Working together with Dr J. Muggleton in the 2000 field season, a new technique for marking the location of potential hymenopterous hosts was devised. This involved the use of specially manufactured solid brass markers and a discriminating metal detector. This method enabled three active nest holes of the solitary wasp Ammophila pubescens Curtis to be marked in July and August 2000 and then to be excavated in March 2001 when the wasps were at the cocoon stage. Two cocoons were exhibited: one from which an adult A. pubescens emerged in July 2001 had a neatly excised cap, bitten through by the wasp as it emerged from beneath the soil; the other was a cocoon from which the active pupa of the ectoparasitoid (?) Thyridanthrax fenestratus (Fall.) (Bombyliidae) had emerged. Emergence of the fly pupa had taken place under the soil, the pupa probably boring itself out of the Ammophila cocoon and subsequently the soil using the “crown of thorns” on top of the head capsule while the wasp cocoon remained under the soil. The fly pupa and emergent adults of both species were also exhibited. It had yet to be assessed whether a larval or prepupal skin of the fly remained inside the wasp cocoon. Progress with Bombylius minor (L.) (Bombyliidae) had been more difficult; although it had been found egg-flicking quite readily in all sorts of dark...
cavities in vertical or sloping sandy surfaces, it had not yet been possible to associate it with any particular host.

PARKER, M.J.—Some rare and local species found in Dorset, Cornwall and Scotland in 2001: *Tabanus sudeticus* Zeller (Tabanidae), male on window pane at St Joseph’s School, Launceston, Cornwall, SX328860, 10.vii; *Acroceria orbiculatus* (F.) (Acroceridae), female swept from vegetation at Winfrith Heath, Dorset, SY808874, 20.viii; *Villa modesta* (Meig.) (Bombyliidae), male basking on bare sand at Penhale sand dunes, Cornwall, SW773565, 13.vii; *Spiriverpa lunulata* (Zett.) (Therevidae), male swept from Riverside vegetation adjacent to shingle beds on River Nairn at Howford, Nairnshire, NH8753, 20.vi; *Pamponerus germanicus* (L.) (Asilidae), female swept from grassy sand dune at Culbin Forest, Nairnshire, NJ0064, 23.vi; *Meligranna trianguliferum* (Zett.), female at *Euphorbia amygdaloides* at Oakers Wood, Dorset, SY8091, 13.v; *Orthonevra geniculata* (Meig.), male and female swept from *Salix* catkins at Throop Heath, Dorset, SY822917, 19.iv; *Platycheirus europaeus* Goeldlin de Tiefenau, Maibach & Speight (Syrphidae), male from meadow adjacent to Raasay Forest, Isle of Raasay, NG556362, 26.vi; and female from meadow at Grantown-on-Spey, Morayshire, NJ027264, 18.vi; *P. melanoepis* Loew (Syrphidae), male at *Caltha palustris* flowers at Coire an lochain, 910 m, Cairngorm, Inv., NH981030, 22.vi; *P. perpallidus Verral* (Syrphidae), male and female swept from poolside vegetation on heathland near Dava, Nairnshire, NH9939, 18.vi; *P. podagratus* (Zett.) (Syrphidae), male swept from meadow near Brae, NG562416, Isle of Raasay, 26.vi; *Sphegina sibirica* Stackelberg (Syrphidae), swept in numbers from a flowery clearing adjacent to Glen Brittle picnic area, NG424264, Isle of Skye. 29.vi.

PERRY, I.—A selection of uncommon Diptera found in 2001: *Hybonitra criweai* (Séguy) (Tabanidae), Walberswick NNR, Suffolk, 2.vii; *Stratiomys longicornis* (Scop.) (Stratiomyidae), Walberswick NNR, Suffolk, 12.vi; *Chersodromia curstians* (Zett.) (Hybotidae), Walberswick NNR, Suffolk, 26.vi, running over damp shingle; *Dolichopus signifer* Hal. (Dolichopodidae), Walberswick NNR, Suffolk, 26.vi; *Brachyopa bicolor* (Fall.) (Syrphidae), Wimpole Hall, Cambs, 23.v, flying around beech *Fagus* tree with small sap run; *Mallota cinenticornis* (Fall.) (Syrphidae), Wimpole Hall, Cambs, 19.vi on *Rubus* flowers; *Pocota personata* (Harris) (Syrphidae), Wimpole Hall, Cambs, emerged 30.iii, from larva found in a rot hole of a fallen ash *Fraxinus*, 19.xii.2000; *Sphaerophoria potentillae* Claussen (Syrphidae), Retire Common, Cornwall, 8.vii, swept from wet heath, first record for Cornwall; *Anticheta oblivia* Enderlein (Sciomyzidae), Wicken Fen, Cambs, 26.v; *Tethina incisuralis* (Macq.) (Tethinidae), Cubert Common, Cornwall, 10.vii, swept from low dunes in coastal cove; *Eurina lurida* Meig. (Chloropidae), Snettisham Coastal Park, Norfolk, 11.v, swept from ditch containing its foodplant *Bolboschoenus maritimus*; *Chiroisa aberrans* Collin (Anthomyiidae), Wicken Fen, Cambs, 26.v. swept from an area of scrub containing the Marsh Fern *Thelypteris palustris*.

STUBBS, A.E.—*Tipula serrulifera* Alexander (Tipulidae), a male from Aversley Wood, Sawtry, Hunts, 3.x.2001, the fifth British record. It had last been taken live in Scotland at Pentlands, Midlothian by Sir Arthur Duncan on 24.viii.1945, although in the late 1970s it was also taken in pitfall traps on moorland in Yorkshire and Durham. A distribution map was displayed.

**COLEOPTERA**

ALEXANDER, K.N.A.—A selection of the more interesting and locally rare beetles found during 2001: *Lebia chlorocephala* (Hoffmannsegg) (Carabidae), Beeston Tor,

ALLEN, A.J.W.—*Trechus rubicundus* Dejean (Carabidae), Paignton, Devon, one under stone behind Safeway supermarket, 12.iv.2000; A. Allen is grateful to J. Owen for showing him the site; *Thalassophilus longicornis* (Sturm) (Carabidae), Dungeness, Kent, one by pushing gravel into a long-established pit, 18.v.2001, not previously recorded from southeast England; *Bembidion monticola* Sturm (Carabidae), North House Burn, Roxburghshire, one under stone at edge of burn, 24.viii.2001; *Perigona nigriceps* (Dejean) (Carabidae), Wimborne St Giles, Dorset, 13.x.2000, also recorded from several dung heaps and piles of hay or straw in the Fordingbridge area, South Hampshire, and in east Dorset and South Wiltshire; *Anisodactylus nemorivagus* (Duftschmid) (Carabidae), Bovingdon, Dorset, two under stones on army ranges, 1.vi.2001; *Acupalpus brunnipes* (Sturm) (Carabidae), Shell Bay, Dorset, a number on various dates among litter at edge of small pond on beach and on banks of stream leading to it, iv–v.2001; *Acupalpus flavicollis* (Sturm) (Carabidae), Littlebourne, Kent, 15.v.1994; *Stenolophus teutonus* (Schrank) (Carabidae), Dungeness, Kent, a number under stones in sandy area close to a pit, 18.viii.2001, apparently a new county record; *Pseudopsis sulcata* Newman (Staphylinidae), Cranborne, Dorset, in open barn filled with straw bales, 12.xi.1999; *Rugilus fragilis* (Gravenhorst) (Staphylinidae), Cranborne, Dorset, in open barn filled with straw bales, 12.xi.1999; *Lomechusa paradoxa* Gravenhorst (Staphylinidae), Eype, Dorset, one running on bare sand, 16.iv.2001, apparently a new county record; *Atomaria punctithorax* Reitter (Cryptophasagidae), Cranborne, Dorset, in open barn filled with straw bales, 12.xi.1999, identified by C. Johnson and a new county record; *Mycetophagus quadrinotatus* Müller (Mycetophagidae), Cranborne, Dorset, in open barn filled with straw bales, 12.xi.1999, a new county record; *Tetratoma desmaresii* Latreille (Tetratomidae), Linwood, South Hampshire, several on oak boughs covered in a pink encrusting fungus, 16.x.2000.

BARCLAY, M.V.L.—A woodworm beetle new to Britain. *Priobium carpini* (Herbst) (Anobiidae), specimens collected in sticky traps in the Cryptogamic Herbarium and the Entomology Department, The Natural History Museum, and also in a residential building in South Kensington, London, vii.2001. This is a scarce anobid in central and northern Europe, and is associated with dry timber of coniferous or deciduous trees, although its breeding source in London is still unknown. *Thylodrias contractus* Motschulsky (Dermestidae), The Natural History Museum, London, males on sticky traps, vii–viii.2001; *Chrysolina americana* (L.) (Chrysomelidae), Barnes, London, Surrey, TQ2277, from a garden wall, 10.x.2001; *Otiorhynchus avumadillo* (Rossi) (Curculionidae), Chelsea Harbour, London, Middlesex, TQ28, nine specimens, some in cop., from railway bridge overhung with ivy, 27.viii.2001, also collected there at

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the same time by A.D. Esin; this species is a minor pest of horticulture in parts of Europe and has possibly been introduced into Britain with ornamental plants as examples have also been seen from Cardiff and Edinburgh.

BOOTH, R.G.—A selection of rare or notable species identified during 2001. *Pogonus hirudipennis* (Germar) (Carabidae). Salthouse, East Norfolk, TG0744, a single female found on the muddy edge of a brackish pool, together with several examples of both other *Pogonus* species, 31.vii.2001; *Harpalus froelichii* Sturm (Carabidae), Wangford, West Suffolk, TL756836, in pitfall trap at base of small pine tree, 28.vii.–4.viii.2001; *Microlestes minutulus* (Goeze) (Carabidae), Newhaven, East Sussex, TQ4500, three found by grubbing among small stones and sparse vegetation, 7.vii.2001; *Onthophilus punctatus* (Müller) (Histeridae), Hilborough, West Norfolk, TL8099, one female in a pitfall trap in cereal field, 18.v.2000; *Agathidium marginatum* Sturm (Leiodidae), Harnhill, East Gloucestershire, SP0700, two in pitfall traps in field, 14.vii and 23.ix.1999; *Ptomaphagus varicornis* (Rosenhauer) (Leiodidae), Bacome Hill, Wendover, Buckinghamshire, SP8607, one female in a suction sample from a grassland and scrub site, 27.viii.1999, and Hilborough, West Norfolk, TL8099, one male in a pitfall trap in cereal field, 18.v.2000, a new county record; *Nicrophorus vestigator* Herschel (Silphidae), Hilborough, West Norfolk, TL8099 and TF8100, two males in pitfall traps in cereal fields, 18.v.2000; *Anotylus hamatus* (Fairmaire & Laboulbène) (Staphylinidae), Hackbridge, Surrey, TQ282660, one male in a small flight interception trap in the garden, 15–28.iv.2001; *Lathrobium fennicum* Renkonen, Hickling Broad, East Norfolk, TG4221, one female from the vegetated edge of a small pond, 2.viii.2001, a new county record and a considerable extension of its current British distribution (females of *L. fennicum* possess a strongly convex, boat-shaped, genital tergite which separates them readily from the otherwise similar *L. quadratum* (Paykull) in which the genital tergite is oval and more or less flat); *Lathrobium pallidum* von Nordmann (Staphylinidae), Harnhill, East Gloucestershire, SP0700, one female in pitfall trap in field, 26.ix.2000; *Lathrobium ripicola* Czwalina (Staphylinidae), Broadnymett, Bow, North Devon, SS698014, in pitfall traps in cereal field, 1.vi.2000; *Heterothops dissimilis* (Gravenhorst), Hilborough, West Norfolk, TL8099, one male in a pitfall trap in cereal field, 17.v.2000; *Brachida exigua* (Heer) (Staphylinidae), Whinless Down, Dover, East Kent, TR28/2941, one female in a suction sample from a grassland and scrub site, 13.v.1999, a second modern Kent site; *Falagria concinna* Erichson (Staphylinidae), Epsom Common, Surrey, TQ1860, one male under a freshly cut section of oak trunk, 24.vi.2001; *Atheta puberula* (Sharp) (Staphylinidae), Harnhill, East Gloucestershire, SP0700, in pitfall traps in field, 26.ix.2000, a new county record; *Ilyobates nigricomis* (Paykull) (Staphylinidae), Holmwood Common, Surrey, TQ173462, one female sieved from bracken litter in open oak woodland, 5.vi.2001; *Oxypoda exoleta* Erichson (Staphylinidae), Hilborough, West Norfolk, TL8099, in suction sample from cereal field, 15.vi.2000; *Athous campyloides* Newman (Elateridae), Hackbridge, Surrey, TQ282660, 27 males and 2 females in a small flight interception trap in the garden, 10.vi.–22.vii.2001; *Anisoxya fuscula* (Illiger) (Melandryidae), Harnhill, East Gloucestershire, SP0700, one in pitfall trap in field, 14.vii.1999; *Mordellistena pseudoparvula* Ermisch (Mordellidae), Newhaven, East Sussex, TQ4500, one female found by grubbing among small stones and sparse vegetation, 7.vii.2001; *Mordellistena neuwaldeggiana* (Panzer) (Mordellidae), Broyle Side, East Sussex, TQ4714, one female beaten from old hawthorn hedge, 7.vii.2001; *Curculio betulae* (Stephens) (Curculionidae), Hickling Broad, East Norfolk, TG4221, a pair beaten from alders, 2.viii.2001.
Separating females of three common species of Lathrobium (Staphylinidae). Lathrobium fulvipenne (Gravenhorst), L. geminum Kraatz and L. elongatum (L.) are three common species which are very difficult to separate using the published external key characters. Males are readily separated by their genitalia. Although no details of the female identification characters appear to have been published, they are readily separable using sternite 8 and the genital tergites. Female sternite 8 rounded in L. fulvipenne, truncate in L. geminum and L. elongatum; female genital tergites with small excision in L. fulvipenne, medium in L. geminum and large in L. elongatum.


COLE, S.G.—A weevil new to Britain. Otiorhynchus salicicola (Heyden) (Curculionidae), Victoria, London, TQ28, one found dead in Government buildings, xii.2000, and a further six collected on and around the building’s roof garden up to October 2001, exhibited on S. Cole’s behalf by M. Barclay. This European species has also been introduced into Sweden with ornamental plants. Ornamental plants may also be the source of the present colony.

Ips sexdentatus (Boerner) (Curculionidae). Spring Covert, Didlington, abundant under bark, pile of logs in conifer plantation, 26.viii.2001, apparently a new county record.


HACKETT, D.S.—One species new to Britain. Scymnus rubromaculatus (Goeze) (Coccinellidae), Lower Lee, Stratford, London, several individuals swept from undistinguished dry canal-side vegetation, 20.vii.2000; the species is widespread in Europe and inhabits dry, warm grassy places so one might expect it to be able to spread easily in Britain; it was named by Roger Booth.

Other Coleoptera from in and around London. Amara consularis (Duftschmid) (Carabidae), Stratford, London, on clay subsoil embankment colonised by ruderal vegetation, 15.vi.2000; Polistichus connexus (Fourier) (Carabidae), London, in pitfall trap on wet clay infill of a former course of Channelsea river, 26.x.2000; Agrilus viridis (L.) (Buprestidae), Epsom Common, Surrey, an adult trapped in its pupal chamber in sallow log showing larval mines and D-shaped adult emergence holes, 23.ix.2001; Axinotarsus pulicarius (Fabricius) (Melyridae), Lower Lee area, London, a single female swept from rough herbage on a canal-side, 20.vii.2000, apparently the first British record since 1923; a female specimen of A. marginalis (Laporte) was also shown for comparison; Liparius coronatus (Goeze) (Curculionidae), Stratford, London, 21.ix.2000.

HAWKINS, R.D.—Hylecoetus dermestoides (L.) (Lymexylinidae), Chilworth, Surrey, in woodland by the River Tillingbourne, 10.v.2001; in flight it resembles a soldier beetle (Cantharidae), but the body is longer. Some beetles found on sandy soil at St Martha’s Hill, near Guildford, Surrey, 10.v.2001: Panagaeus bipustulatus (Fabricius) (Carabidae), which also occurs on chalk; Oiceoptoma thoracica (L.) (Silphidae); Athous subfuscus (Müller) (Elateridae), now rather common in a restricted area of west and central Surrey; Melanimon tibialis (Fab.) (Tenebrionidae) and Gronops lunatus (Fab.) (Curculionidae).

HODGE, P.J.—Coleoptera found at various locations in southern Britain during 2000 and 2001, including three species of weevils new to Wales. Microlestes minutulus (Goeze) (Carabidae), Newhaven, East Sussex, TQ454005, in suction sample, 12.vi.2001, new vice-county record; Helophorus longitarsis Wollaston (Hydrophilidae), Rotherfield Millennium Green, East Sussex, TQ55902976, in new clay-bottomed pond, 10.ix.2000; Saprinus virescens (Paykull) (Histeridae), Midhurst, West Sussex, SU890220, swept in meadow near River Rother, 2.v.2000, new vice-county record; Medon castaneus (Gravenhorst) (Staphylinidae), Midhurst, West Sussex, SU888219, swept in meadow by River Rother, 2.v.2000, new vice-county record; Cardiophorus vestigialis Erichson (Elateridae), Dinas Fawr, Pembroke, SM814232, beaten off nettles, 14.vi.2000; Sphinginus lobatus (Olivier)


KNILL-JONES, S.A.—*ColymbetES fusCEUS* (L.) (Dytiscidae), Freshwater, Isle of Wight, 27.x.2001.

MORRIS, M.G.—Four species of weevils (Curculionoidea) new to the fauna of the Canary Islands, not included in the *Elenco de los Coleópteros de las Islas Canarias: Catalogue of the Coleoptera of the Canary Islands* by Machado & Oromi (2000). *Stenopelthus ruatinus* Gyllenhal (Erihhrinidae), Ariones, Gran Canaria, one beaten from Canary pine *Pinus canariensis* Chr. Sm., 19.iii.1994; this North American species is well established in Europe and its host, the water fern *Azolla filicoides* Lam., has also been introduced to Tenerife and Gran Canaria; *Sibinia arenariae* Stephens (Curculionidae), near Teguise, Lanzarote, eight males and three females shaken from *Spergularia* sp., 12 and 15.ii.1995; *Sitona lepidus* Gyllenhal (Curculionidae), near Las Fuentes (Aguamansa area). Tenerife, two examples by general sweeping, 7.vi.1999, presumably recently introduced as a few examples have been taken in the area from 1995 onwards; *Hypolixus brachyhinus* Boheman (Curculionidae), Puerto S. Nicolas, Gran Canaria, one specimen beaten from *Tamarix canariensis* Willd., 12.xi.1999; *Hypolixus* species are difficult to identify and the genus is in need of revision (R.T. Thompson, pers. comm.), but no other species has been recorded from the Canary Islands.

OWEN, J.A.—*Hister quadrimaculatus* Linnaeus (Histeridae), Gilkicker Point, South Hampshire, shaken from moss, 10.iv.2001, the specimen exhibited on behalf of David Appleton; *Eucotes duboisi* Méquignon (Scydmaenidae), Little Bookham, Surrey, in stable sweepings, 1.xii.1999; *Stenus fossulatus* Erichson (Staphylinidae), Kellwood, Cumbria, wet landslip on banks of River Irthing, 4.v.2000; previous records of this species have been from Castle Eden Dene, Durham; *Medon piceus* (Kraatz) (Staphylinidae), Bookham Common, Surrey, in underground trap at roots of old oak, vi.1999; *Clambus simsoni* Blackburn (Clambidae), Box Hill, Surrey, one of several specimens in old hay, 24.xi.1999; *Cybocephalus fodorii* Endrödy-Younga (Nitidulidae: Cybocephalinae), Wimbledon Common, Surrey, crawling on tree trunk, 15.v.2000; *Dienerella argus* (Reitter) (Latridiidae), Lundy Island, North Devon, in hay in barn, 16.ix.1999.
PLANT, C. W.—Oncomera femorata (Fabricius) (Oedemeridae), Hexton Chalk Pit Nature Reserve, Hertfordshire, two males and one female attracted to mercury vapour lights, 21–22.vii.2001, a new county record.

HEMIPTERA


HOOG, P.J.—Four species of bugs found during 2000 and 2001. New vice-county records are prefixed with an asterisk (*). *Liorhysius hyalinus (Fab.) (Rhopalidae), E. Sussex, Rotherfield Millenium Green, TQ558296, 15.vii.2000, swept in flowery grassland; *Stictopleurus punctatonervosus (Goeze) (Rhopalidae), E. Sussex, Mayfield, TQ62, 9.vii.2001, swept on south-west facing, unimproved grassland; Trapezonotus ulrichi (Fieber) (Lygaeidae), Pembroke, east of Caer Bwdy Bay near Trelerw, SM771241, 12.vi.2000, swept off cliff-top grassland; Macronestes cyanus (Bohemian) (Cicadellidae), E. Sussex, St Dunstan’s Farm, Heathfield, TQ608196, 13.ix.2000, swept off vegetation in pond containing broad-leaved pondweed Potamogeton natans, and on 24.vi.2001 in the same pond on floating leaves of P. natans.

NAU, B.S.—Exhibit of four species of Micronecta (Kirkaldy) (Corixidae). M. poweri (Douglas & Scott) and M. scholtzi (Scholtz) are common in southern Britain. M. minutissima (L.) had not been recorded since 1949, but several found in River Lea near Hoddesdon, Hertfordshire, 2001. M. griseola (Horvath), new to Britain, River Great Ouse, Bedfordshire, 2001.

HYMENOPTERA


Chandler, J.M. & Gale, B.A.—Some examples of plant galls caused by cynipid wasps and other organisms. The exhibit also publicised the activities of the British Plant Gall Society and a forthcoming AIDGAP key to galls on British plants and fungi.


Halstead, A.J.—(a) Some scarce or local sawflies and aculeate Hymenoptera taken in 2001. Argidae: Sterictiphora geminata (Gmel.), female, 10.v.01, river bank wildlife area, RHS Garden, Wisley, Surrey, TQ63591. Diprionidae: Diprion similis (Hartig), male, reared, 1.v.01, as previous sp.; female, 26.vi.01, Frensham Common, Surrey, SU861415. Tenthredinidae: Heterarthrus microcephalus (Klug), female, bred
24.viii.01 from mined sallow leaf collected 13.vii.01, Brownsham Farm, nr. Hartland, Devon. SS285259; _H. ochropoda_ (Klug), male bred 9.v.01 from mined aspen leaf, collected 28.viii.00, Bookham Common, Surrey, TQ122565; _Parra tenella_ (Klug), female, on lime leaf, 4.vii.01, Knaphill, Surrey, SU966587; _Phyllocopa scotaspis_ (Förster), female, swept from willow, 11.vii.01. Papercourt Marshes nr Ripley, Surrey, TQ038563; _P. coriacea_ (Benson), female, swept 20.vi.01, river bank wildlife area, RHS Garden, Wisley, Surrey, TQ063591; _Nematus fuscomaculatus_ Först. and _N. frenalis_ Thom., females, swept 10.v.01, as previous sp.; _Amauronematus hedstroemi_ Malaise, female, swept 11.iv.01 as previous sp. Sphecidae: _Gorytes tumidus_ (Panz.) female, in a greenhouse, RHS Garden, Wisley, Surrey, TQ066583; _Astata pinguis_ (Dahlbom), male, swept 23.vi.01, Frensham Common, Surrey, SU861415.

(b) Some sawflies that feed on hawthorn. Pamphiliidae: _Pamphilius sylvaticus_ (L.); _Neurotoma saltuum_ (L.). Argidae: _Arge ustulata_ (L.); _A. melanochroa_ (Gmel.). Cimbicidae: _Trichiosoma tibiale_ Steph./_locorum_ (L.). Tenthredinidae: _Dineura stilata_ (Klug); _Hoplocampa crataegi_ (Klug); _H. pectoralis_ Thom.; _Caliroa cerasi_ (L.); _Priophorus pallipes_ (Lepeletier); _P. pilicornis_ (Curt.); _Nematus lucidus_ (Panz.) and _Pristiphora crassicornis_ (Hartig).

**HAWKINS, R.D.**—Two uncommon bees, _Nomada lathburiana_ (Kirby) and _N. signata_ Jurine (Hym. Anthophoridae), taken on Reigate Heath, Surrey, on 11.v.01. The latter was flying near burrows of its host bee, _Andrena fulva_ (Müller). Another specimen of _N. lathburiana_ was found on 25.v.01 at Earlswood Common, Surrey, about 4km to the east. These are new localities for this species but its host bee, _Andrena cineraria_ (L.), has not yet been found in the district.

**HODGE, P.J.**—A male solitary bee, _Sphecodes spinulosus_ von Hagens, which is new to Hertfordshire. It was swept from lush vegetation by a track adjacent to the perimeter hedgerow at Frogmore Gravel Pit, Aston, Herts, TL285206 on 29.v.2000.

**JONES, R.A.**—The ant _Lasius fuliginosus_ (Lat.) taken at Morden Cemetery, Surrey on 14.v.98 and 10.ix.98.

**PAVETT, P.M.**—Some Hymenoptera collected in the Horsh Ehden Nature Reserve, Lebanon, as part of a visit by National Museums & Galleries of Wales, Cardiff, in collaboration with the Lebanese University, Beirut.

**RAPER, C.M.T.**—A collection of insects collected xi–xii.2000 in French Guiana, including some Hymenoptera.


**STUBBS, A.E.**—A nest of the social wasp, _Dolichovespula media_ (Retz.) collected in Peterborough, Cambs.
ORTHOPTERA

COLEMAN, D.A.—The southern oak bush cricket, Meconema meridionale (Costa) in Carshalton, Surrey. The presence of this species in Britain was first recognised by Roger Hawkins when he found it at Thames Ditton, Surrey in 2001. On 18.x.01 a female was found by torchlight on the trunk of a sycamore tree in the exhibitor's Carshalton garden (TQ275639). During 20–30 October, other individuals, often ovipositing females, were seen. Only two males were seen during this period. Cold weather in early November was thought to have killed off the adults but two females and a male were seen on 7.xi.01. All of the sightings were on semi-mature sycamore trees which formed a continuous canopy. Other trees in the neighbourhood were examined but no other sightings were made. [Following the Exhibition, sightings continued until 30.xi.01 (female) and 4.xii.01 (male).]

JONES, G.H.—A provisional atlas of the orthopteran fauna of Glamorgan.

ARACHNIDA

SOUTH WALES ARACHNID GROUP—An exhibit to promote the activities of the South Wales Arachnid Group and their newsletter, Cobweb.

MISCELLANEOUS

STUBBS, J.—An exhibit chronicling the long friendship between Johann Christian Fabricius (1745–1808) and Sir Joseph Banks (1743–1820). This included records of Fabricius' first visit to London from Denmark in 1767, a letter from Fabricius which contains the only evidence that Banks may have fathered a child, and résumés of letters from Fabricius to Banks written between 1773–1805. The exhibit also showed Sir Joseph's penchant for recording the weights of people, although those for Fabricius do not indicate whether it was Mr or Mrs Fabricius. The correspondence includes a begging letter sent by Mrs Fabricius to Sir Joseph in July 1782 and the last poignant letter sent by Fabricius to Banks in 1805.
MINUTES OF THE BENHS ORDINARY MEETINGS

11 December 2001

The Secretary Dr J. Muggleton took the chair.

Mr R. SOFTLY showed a colour transparency of a noctuid moth, the Conformist, *Lithophane furcifera* Hufn. attracted to a light-trap in his garden at Hampstead. This rare migrant species was recorded on 21.ix.01.

Mr A. J. HALSTEAD showed a male and female crane fly, *Tipula flavolineata* Mg. (Diptera: Tipulidae) that had been bred from larvae found in rotten woody stems of a garden shrub, *Berberis* sp. The larvae were found as final instar larvae in March 2001 at the RHS Garden, Wisley, Surrey. The adults emerged on 2.iv.01.

The minutes of the meeting held on 13 March 2001 were read and approved.

The following persons were approved by Council as members: Dr Stanislav Abadjiev, Mr Jolyon Alderman, Dr James Archer, Professor Ted Benton, Mr David Brown, Mr Andrew Girling, Mr Michael Lush, Mr Norbert Maczey, Dr George Miskei, Mr Colin Moffatt, Mr Alan Newbury, Mrs Glenda Orledge, Mr Andy Page, Dr David Phillips, Mr Andrew Philpott, Mr Alex Ramsay and Mr Nicholas Steer.

Mr S. MILES reported that he had attended the Species Recovery Programme 10th Anniversary meeting organised by English Nature. He noted that the BENHS heathland fly project was not the only one to use a metal detector to keep track of its target insects. Another project on certain pot beetles, *Cryptocephalus* spp., was using metal strips and a detector to follow the movements of the larvae.

Mr A. J. HALSTEAD noted that the common sympetrum dragonfly, *Sympetrum striolatum* (Charpentier) is invariably the last dragonfly to be seen on the wing in the autumn. Cyril Hammond, in his 1977 book *The Dragonflies of Great Britain and Ireland*, quoted the latest sighting as 20th November in 1939. In 1999 Mr Halstead had seen two specimens in a sheltered sunny corner of the car park at the RHS Garden, Wisley, Surrey on 25.xi.1999. This year he had seen two specimens in the same place on 26.xi.01.

Mr R. HAWKINS said there had been three records of the Red Admiral butterfly in December in Surrey, including one under the eaves of his house at Horley, Surrey. Mr I. FERGUSON said he had also seen a Red Admiral at Down, Kent on 7.xii.01.

Dr MUGGLETON said that although social wasps had been reported as being scarce this year, he had recently been taking worker wasps in the light-trap run in his garden at Staines, Middlesex.

THE LECTURE

Dr P. WARING was unable to attend the meeting to give his talk on “Rare moths in the field”. However he provided a good substitute in the form of a video with a recorded commentary. The video showed some of the rare moths that Dr Waring has worked on in recent years. The Black-veined moth, *Siona lineata* Scop. was filmed taking nectar from dogwood flowers, and males were shown making display flights at dusk. The Four-spotted moth, *Tyta luctuosa* D.&S., was filmed taking nectar from convolvulus and red clover flowers during the day. Like the Black-veined moth, this species needs a tall sward and is threatened by excessive grazing. *Tyta luctuosa* larvae feed on convolvulus leaves and examples of early larval feeding in the field were detected by comparing feeding damage with that made by captive-bred larvae. The Reddish Buff moth, *Acosmetia caliginosa* Hb. was filmed in a light-trap and the nocturnal larvae were shown feeding on the foliage of saw-wort. Also filmed was the
White-spotted Pinion, *Cosmia diffinis* L., again at a light trap, with its larvae feeding between webbed leaves on elm, especially on epicormic growth. Other moths filmed were Bordered Straw, *Heliothis peltigera* D.&S., laying eggs; Humming-bird Hawkmoth, *Macroglossum stellatarum* L., taking nectar from *Echium* flowers; and the Dark Bordered Beauty, *Epione parallellaria* D.&S. filmed at Abernethy. Dr Waring’s video also showed male clearwing moths being recorded by attracting them to pheromone lures. These are available for several of Britain’s clearwings, including the Red-belted Clearwing, *Synanthedon myopaeciformis* Borkhausen, the Orange-tailed Clearwing, *S. anthraciformis* Esper and the Currant Clearwing, *S. tipuliformis* Clerck. While male *S. myopaeciformis* were being filmed at a lure, a female was found ovipositing on the bark of a garden apple tree. The larvae of the Thrift Clearwing, *Bembecia musgaeformis* Esper, were filmed feeding in the stem bases of its host plant. Infested rosettes can be detected by their brown appearance.

12 February 2002

The Vice President, Mr E. Philp took the chair.

Dr M. TELFER showed a live specimen of the hoverfly *Volucella inamis* (L.) bred from a larva which had been given to him last autumn from a roof-space wasp nest in a house in Buckinghamshire.

The following persons were approved as members by Council: Mr Timothy J. Baxter, Dr David S. Buckley, Mr Dom W. Collins, Mr Nicholas J. Donnithorne, Mr Wayne R. Elliott, Mr Steven J. Gregory, Mr Martin P. Jordan, Mr Paul Parmenter, Mr Philip J. Precey, Miss Juliet E. L. Timms, Mr Alan C. Wagstaff, Mr Anthony J. White and Mr Stephen A. Whitehouse.

Dr J. MUGGLETON reported that David Wedd had been nominated for the vacant post of Buildings Manager for the Pelham Clinton building.

Dr I. F. G. MCLEAN said that the Collembola Workshop on 16 February had had to be cancelled; the Pelham Clinton building would be open on that day for those who wished to use the collections and library.

Mr J. BADMIN announced there would be a one day meeting on “Spiders and Insects” organised by the Royal Entomological Society and the British Arachnological Society. It will be held on 3 April 2002 at 41 Queen's Gate, London SW7, starting at 10.30am.

Mr E. PHILP reported seeing a Red Admiral that day in his garden and a queen *Bombus terrestris* (L.) on 11.ii.02.

**The Lecture**

Dr MARK TELFER spoke on the changing ranges of British insects as illustrated by atlas databases. Studying changes in the ranges of insects helps to establish the conservation status of species and to set priorities for their conservation. These studies also help in understanding the causes of change. In considering range size a distinction must be made between the area of occupancy and the extent of a species’ occurrence. A rare species may be of widespread occurrence but will occupy only a few 10 km squares within that area. The data recorded in atlas schemes can be used to show changes in range by comparing the records made in two separate time periods. For many recording schemes there has been much greater activity since 1970 compared with earlier years. This can give the impression that species are now more abundant and widespread, whereas in fact they may have declined. By plotting old records against post 1970 records on a graph and measuring the relative change as
the residual variation about the average, those species which have increased or decreased their range can be identified. Dr Telfer illustrated this with some data collected for the Millennium Butterfly Atlas and the carabid recording scheme. With the carabids this analysis shows that larger carabid species have declined more than the smaller species, and those associated with arable fields have declined more than those in other habitats. Dr Telfer concluded that this method of analysis could be applied to any atlas data set where there was adequate historical data. It can be used to track changes without the need for continual monitoring in the field.

12 March 2002

The President, Mr R. A. JONES showed two unusual urban finds. A female *Tabanus bromius* L. (Diptera: Tabanidae) was caught in a Malaise trap on Goose Island, Battersea Park, 3–20.viii.2001 (vc 17, Surrey). This once common and widespread horsefly is believed to have declined dramatically in the last 50 years, mainly through the destruction of old grazing meadows where the predatory larvae live in the soil. There seemed to be just a single other recent Surrey record in the extreme south-west of the county in 1983 (R. K. A. Morris, 2000, *London Naturalist* 79: 143–159). Although fairly managed, Battersea has some rough corners and a deer enclosure could have provided the fly with victims for a blood meal. He also showed a single *Tetrix subulata* (L.) (Orthoptera: Tettigidae) caught in the same Malaise trap in Battersea Park, 20.viii–9.x.2001. In the recent atlas of *Grasshoppers and crickets of Surrey* (D. Baldock, 1999), both common *Tetrix* species were noticeably absent from the urban north-east corner of Surrey. However it has also recently been found at Barnes, 6 km west from Battersea and also on the Thames.

The following persons were approved by Council as members: Mr Roger J. Clooney, Dr Steve G. A. Compton, Mr Dennis D. Dormer, Mr John Hobart, Mr Geoff J. Hobson, Mr Lee Miles, Mr David J. Painter and Mr Ivan R. Wright.

Mr M. SHARDLOW gave details of the first AGM of the newly formed Invertebrate Conservation Trust (Buglife), to be held at Queen’s Gate on 26 March 2002. The meeting, which was open to everyone, would elect officers and hear short talks from three speakers.

Mr R. A. JONES reported seeing a Red Admiral in his garden three weeks previously. Mr R. Kemp had seen three Small Tortoiseshell butterflies in the previous week. Mr I. Sims had seen two Brimstone butterflies in the previous week at Medmenham, Buckinghamshire.

The Ordinary Meeting was then followed by the BENHS Annual General Meeting and the President’s Address.

9 April 2002

The Indoor Meetings Secretary, Dr I. MCLEAN requested members to stand for a minute’s silence in memory of HM Queen Elizabeth, the Queen Mother, whose funeral had taken place earlier in the day.

Mr R. K. MERRIFIELD showed a specimen of the dolichopodid fly, *Liancalus virens* Scop., taken on a house wall at Eastcote, Middlesex on 28.xii.2000. There was snow on the ground at the time. This was unusually late for this fly, although it had been recorded as occurring from February to November. It is of widespread occurrence in Britain and is associated with fresh water trickling down rock faces.

Dr I. MCLEAN showed a bottle of beer produced by the Badger Brewery of Blandford St Mary, Dorset. The beer was called “The Blandford Fly” and named in honour of the black fly, *Simulium posticatum* Mg. (Diptera: Simuliidae). This small
fly, which breeds in running water, has a vicious bite and is commonly known as the Blandford Fly. It emerges in summer in large numbers from the River Stour in the Blandford area. The beverage is described as “a hoppy beer with ginger added for extra zest and bite”.

Mr R. K. Merrifield reported seeing a bee fly, Bombylius major L. at Ruislip, Middlesex. Dr I. McLean reported seeing Holly Blue butterflies at the RSPB Reserve at Fowlmere, Cambridgeshire and in Brampton, Cambridgeshire. Mr R. Uffen had noted relatively few Andrena solitary bees seen in Hertfordshire during spring. Mr R. Softly had seen Small White and Speckled Wood butterflies in Hampstead on 1 April.

Professor Paul Buckland spoke on “The origins of insect faunas on Arctic and Antarctic islands”. Most of the talk related to the fauna of the Faroes, Iceland and Greenland. These North Atlantic islands and land masses have a Palaearctic assemblage of insects that is derived from northern Europe, with little contribution from North America. Some of the fauna and flora is likely to have been introduced when these places became settled by people migrating from Europe. The early settlers would have taken crop plants and livestock, all of which would have their associated insect fauna. Other insects would have been introduced through trade or by the disposal of ballast and dunngage from ships.

Other means of introduction from mainland Europe were considered. Some birds regularly migrate to and from the mainland and there is the possibility of some insects being carried in birds’ plumage. Driftwood washes up on the beaches and could carry insects. However this timber is mainly derived from the Baltic region and has a long and slow journey to Iceland and beyond.

It has been suggested that some of the North Atlantic island fauna has always been there. However there is geological evidence to show that these land masses were completely covered in ice during the ice ages and there were no refugia where insects could survive. If there had been refugia it might be expected that these islands would have endemic species but all the insects are found elsewhere in Europe. The fossil insect record suggests there is little recent change from the current species assemblage. After the arrival of settlers the fossil record contains many beetles and flies; before man’s arrival the fossil record is mainly of mites with few insects. The fossil record shows that the effects of glaciation take place rapidly, within a hundred years, with no gradual transition between warm and cold climate insect species. Professor Buckland suggested that the break-up and drift of ice sheets could be a mechanism by which some insects have been transported between the North Atlantic islands.

In the South Atlantic, the Falkland Islands have an insect fauna that pre-dates settlement by man. This is mostly of weevils which are likely to have come from South America on driftwood. The South Atlantic islands, unlike those in the North Atlantic, do have some endemic insect species.

14 May 2002

The President Dr P. C. Barnard announced the deaths of Mr S Petley and Miss Ruth Day.

Mr A. J. Halstead showed some larvae of the barberry sawfly, Arge berberidis Schrank (Hymenoptera: Argidae) feeding on the foliage of Berberis thunbergii DC. This continental European sawfly had recently been found established in gardens in Essex and Hertfordshire. The larvae came from a private garden at Church Langley, Essex where they had been present since the sumer of 2000. Mr Halstead also
showed a spider found by the staff of Squire’s Garden Centre, Hersham, Surrey on a tree fern, *Dicksonia antarctica*. The fern was imported from Australia and the spider was believed to be a *Badumna* species (Desidae). If this identification was correct, it was only a moderately poisonous member of the Australian spider fauna!

Mr G. Boyd showed a male specimen of the hoverfly *Brachyopa bicolor* (Fallen) taken on 1.v.02 at Glapthorn Cow Pastures Reserve, near Oundle, Northants. This was the most local of the four British *Brachyopa* species and there were no previous records in the Provisional Hoverfly Distribution Atlas for vc 32. Glapthorn Cow Pastures was perhaps a surprising location for a fly associated with sap runs as it had few old trees and no beech at all. The trees consisted mostly of blackthorn with some ash and field maple.

Dr I. F. G. McLean showed a male *Fannia lustrator* (Harris) (Diptera: Fanniidae) found swarming under a cherry tree about 1m above ground level on 4.v.02 in his garden at Brampton, Cambs. This large *Fannia* sp. has yellow second and third femora and the abdomen glistens with greyish reflections when seen from behind. It is a frequent species in Britain and the males form mating assemblies.

Mr R. D. Hawkins showed an exotic ladybird, *Cheilomenes lunata* (F.) found by R d’Ayala on South African grapes in a supermarket in Didcot, Berkshire.

The following persons were approved as members by Council: Mr Simon Colenutt, Miss Julie A. Kerans and Mr Wilfred Partridge.

Dr J. Muggleton said that some land owners were asking entomologists doing field work for public liability insurance cover for up to £5 or even £10 million. The BENHS Council had decided to raise the Society’s own cover to £5m. This would cover all BENHS members doing non-commercial field work or leading the Society’s field meetings.

Mr G. Boyd reported that Mr T. Smithson, Reserves Office for the Beds, Cambs, Northants and Peterborough Wildlife Trust, had caught a male of the scarce soldierfly, *Odontomyia argentata* (F.) (Diptera: Stratiomyidae) on 24.iv.02 at Southfield Farm Marsh SSSI, south of Kettering, Northants. Mr Smithson had no collecting equipment with him at the time so he improvised a collecting tube out of a dead hogweed stem.

Dr I. F. G. McLean reported seeing two deadwood hoverflies, *Criorhina asilica* (Fallen) and *C. berberina* (F.) found on hawthorn blossom at Hinchingbrooke Park, Huntingdon at 9.30am on 14.v.02.

The evening speaker Mr N. A. Calow showed a wide range of photographs of insects and other invertebrates, fungi and wild flowers taken in the UK, Bulgaria, the Pyrenees and the Himalayas.

11 June 2002

Mr R. A. Jones showed several specimens of *Ponera coarctata* (Latr.) (Hym.: Formicidae) vacuumed up from his garden lawn in East Dulwich, Surrey on 29.v.02, using a suction sampler made from a modified garden two-stroke blowervac. This ant is mainly a southern coastal species, although there are a few inland records from the Thames Valley. Also shown was a queen of the same species taken from Forster Memorial Park, West Kent on 20.ix.99. At the January BENHS indoor meeting, a queen of the local ant, *Myrmecina graminicola* (Latr.) was exhibited, caught flying in the same East Dulwich garden on 5.viii.01. The suction sampler showed that workers of this species were frequent in the lawn in May. Mr Jones also showed three specimens of the wasp beetle, *Clytis arietis* (L.) (Col.: Cerambycidae) taken that day.
at Honour Oak covered reservoir, Forest Hill, West Kent. They showed considerable variation in size (8–14 mm) and colour (cream to lemon yellow).

Mr H. MENDEL showed a piece of dead wisteria stem that had been tunnelled by larvae of the wasp beetle, *Clytis arietis* (L.).

Mr R. D. HAWKINS showed a full grown larva of Blair’s Shoulder-knot moth, *Lithophane leautieri* Boisduval found on *Chamaecyparis lawsoniana* (Murr.) at Mytchett, Surrey on 12.v.02.

Mr A. J. HALSTEAD showed some leaves of *Tilia americana* L. mined by the lime leaf-mining sawfly, *Parna tenella* (Klug). (Hym.: Tenthredinidae) collected at the RHS Garden, Wisley, Surrey. This sawfly causes a distinctive upward rolling of the leaf margins which are then mined by the larvae. It is of widespread occurrence and attacks a wide range of native and exotic *Tilia* species.

Mr R. A. JONES said that while driving from Calais to Caen in France at the beginning of June he had experienced hot weather with an overnight thunder storm. The following day he had noticed black ripples on the beach for as far as the eye could see. These consisted of alate ants and other insects that had presumably been washed down by the storm.

Mr M. BARCLAY said that he had recently visited Chelsea Harbour in London and had found a large number of the non-native weevils *Otiorhynchus armadillo* (Rossi) and *O. salicicola* (Heyd.), as well as the rosemary leaf beetle, *Chrysolina americana* L. It was possible that this cluster of non-native insects was due to landscaping with imported trees and shrubs.

The President Dr P. C. BARNARD reported that the mayfly, *Ephemera danica* Müller, which normally has a two year life cycle, may now be completing its development in one year in chalk streams in southern England.

Dr HOWARD MENDEL spoke on ‘The natural history of British click beetles’. About half the species on the British list have a restricted distribution and are listed as Notable or RDB species. The larvae, commonly known as wireworms, are either plant feeders or predators of other invertebrate animals in the soil or in rotten wood. Dr Mendel described the biology and distribution of some of the species associated with habitats such as river banks and shingle, sand dunes, grassland, marshes, dead wood and tree rot holes, and upland situations.

**9 July 2002**

Mr A. J. HALSTEAD showed a horse chestnut leaf, *Aesculus hippocastaneum* L., damaged by the leaf-mining moth *Cameraria ohridella* Desch. & Dem. (Lepidoptera: Gracillariidae). The leaf was sent to the Royal Horticultural Society (RHS) Garden, Wisley on 8.vii.02 from a private garden in Wimbledon SW19. This appeared to be the first record in Britain of this damaging pest that has spread rapidly through Europe since its first occurrence in Macedonia in 1985. In addition to horse chestnut, this leaf miner also attacks sycamore *Acer pseudoplatanus* L. and Norway maple *A. platanoides* L.

Mr HALSTEAD also showed a “Siamese twin” apple with two fruits fused at the sides from the orchard at the RHS Garden, Wisley, Surrey.

Mr R. A. JONES showed some uncommon woodland beetles from Downham Woodland Walk, in Bromley, SE London. This narrow wooded trackway zigzags between dense rows of houses built during the 1920s. The narrow angular woodland was shown on a map of 1805 and had produced an interesting list of scarce woodland beetles, indicating the ancient nature of the site. Recent finds there included: *Prionychus ater* (F.) (Tenebrionidae), *Aderus oculatus* (Payk.) (Aderidae), *Lissodema quadripustulata* (Marsh.) (Salpingidae) and *Agrius laticornis* (Ill.) (Buprestidae).
Mr K. MERRIFIELD showed a specimen of the chalcid wasp *Chalcis biguttata* Spin. which is a parasite of the larvae of aquatic solider flies of the *Stratiomys* genus. It was taken at Tollesbury Wick, an Essex Wildlife Trust reserve, on 16.vii.1999. Stubs and Drake in British Soldierflies and their Allies (BENHS, 2001) suggested that this rare species might be extinct in Britain.

Dr I. F. McLEAN showed a specimen of the crane fly *Tasiocera robusta* (Bangerter) (Dip: Limoniidae) found at Chippenham Fen NNR, Cambs. on 9.vi.02. This was an early date for this small crane fly. He also displayed an example of the psyllid gall on purging buckthorn that would feature in his lecture.

The following persons were approved as members: Dr David Chesmore, Mr Colin Eastham, Dr Richard Griffiths, Dr Brian Levy and Mr Tim Newton.

Mr R. JONES said that he had used his power vacuum equipment to record the ant *Ponera coarctata* (Lat.) in Battersea Park, London.

Dr Ian McLean spoke on “The Natural History of a Gall-forming Psyllid”. The psyllid, *Trichocharmes walkeri* (Forst.) causes thickened and curled leaf margins on purging buckthorn, *Rhamnus cathartica* L. The speaker’s interest in this insect was aroused when he found a previously undescribed species of a chamaemyid fly, *Leucopis psyllidiphaga* McLean, more than twenty years ago at Foulenden Common, Norfolk. Chamaemyid flies usually have larvae that are predators of aphids but the larvae of *L. psyllidiphaga* were found to be feeding on the psyllid nymphs under galled leaf margins. The psyllid overwinters as eggs that are laid on the stems. These hatch in the spring and nymphs begin feeding on the foliage causing affected leaf margins to thicken and curl upwards. There are five nymphal stages with the fifth instar emerging from the galls in late summer before ecdysing to the winged adult form. Galled leaves generally contain 1–4 nymphs. Galls containing more than one nymph are larger and the occupants develop more rapidly compared with galls containing a single nymph. Leaves supporting more than one nymph may be smaller because of resources being diverted to the gall and its occupants. Adult *T. walkeri* are present in late summer and autumn when they mate and lay eggs. Their patterned wings and head-down resting posture enables them to mimic the bud scales on their host plant.

The predatory fly, *L. psyllidiphaga*, deposits its eggs in the open end of the leaf margin galls. Although galls often have several eggs laid in them, only one *L. psyllidiphaga* larva develops in the gall. Presumably the first larva to get established in a gall preys on any subsequent eggs that are laid. The fly larva develops slowly, feeding as an external parasite on the early psyllid nymphal instars. The psyllids are not killed until they reach the fifth nymphal instar. Larger sized adult flies are produced from galls that contain more than one sucker nymph and the development time of the fly is reduced. The fully-fed fly larvae emerge and go into the soil where they overwinter as puparia.

There are other sap-feeding insects on purging buckthorn and some of these have an association with leaves galled by *T. walkeri*. The psyllids, *Psylla rhannica* Scott and *Trzoza rhanni* (Schr.) feed openly on the foliage but develop more rapidly on galled leaves. An aphid, *Aphis nasturtii* Kaltenbach is present in the spring and develops faster on galled leaves. The aphid *Aphis commensalis* Stroyan feeds on the upper surface of leaves, where it causes some upward curling of the leaf margins, in spring and early summer. From July to autumn it is only found on leaves galled by *T. walkeri*. Another aphid, *Aphis mambulata* Gimingham & Hille Ris Lambers, has no association with the galled leaves. It is a rare species feeding in the summer on the berry petioles and undersides of the leaves where they are attended by the ant *Lasius fuliginosus* Lat.
BOOK REVIEWS


This atlas covers the Watsonian vice-county of Warwickshire (VC38), which differs significantly from the modern administrative County only along its NW and SW boundaries. Generalized maps depicting landscape areas, geology, urban areas and important sites for beetles are provided within the vice-county outline, but only the last two include a 10 km grid. Curiously a small section of VC38 in grid square SK 30, shown on the Ray Society publication No. 46 (1969) is omitted from these maps. It is, however, included in a map of the county coverage on page 34 but, lacking any beetle records, is omitted from all species maps. Additional maps show the percentage land area by square kilometre for urban land, arable land, improved grassland, woodland and water, which would have been better modified to fit the outline of VC38 rather than that of the modern county.

In preparing this atlas the authors decided to restrict records to the period since the publication of the Victoria County History (VCH) in 1904, up to the end of 2000 and, commendably, only include records which they have determined or confirmed. Any uncertain records and species known only prior to 1904 or lacking locality data are listed separately at the end of this atlas. The introductory pages include brief descriptions of the landscape areas with examples of associated beetles; important sites in major habitats; a history of coleopterists active in Warwickshire since W.G. Blatch and E.W. Ellis in the 19th century; and a list of contributors to the County Records Scheme. A two page gazetteer lists all sites mentioned, each with a four figure grid reference, followed by a map of the 45 most frequently recorded sites, with lists of nationally scarce species recorded from 20 of these. All the County’s nationally scarce species are listed, giving the number of sites at which each has been recorded pre- and post-1970. The authors question the status of 39 highlighted species, an issue which is long overdue for more general discussion. The introduction is completed with a checklist of all Warwickshire Coleoptera.

It is to the 159 pages of species maps and their accompanying text that most users of this atlas will immediately turn. 1667 species are mapped on a 5 km square grid, approximately half of which, in the larger or better studied families, are mapped 8 or 10 to a page. Smaller families have 14 to a page. A further 143 species comprising the Ptiliidae, most of the aleocharine Staphylinidae, and a third of the Cryptophagidae have a written entry but no map due to paucity of reliable records. The atlas ends with a complete species index and a list of 11 new County records and six species not recorded in Warwickshire since 1904.

One is tempted to compare this type of atlas presentation with Duff’s (1993) ‘Beetles of Somerset’ which attempted to include every known County record for each species, with 10 km grid reference and date of capture at each site, but lacks any maps. The clearly boxed maps and text in this atlas will provide users with an immediate visual appreciation of the occurrence and distribution of over 90% of the known beetle fauna of Warwickshire (VC38). The VCH or first post-1904 record is given for each species. Only broad habitat details are given for common species whilst those for scarcer species are given in full. The authors may be considered fortunate by some in not only having access to collections in three local museums but
also to sources of funding and other support. But no-one maps 35000 records without a lot of hard work and the authors have laid down a standard for others to follow. A page of mostly minor addenda and errata is inserted which in no way detracts from what is an excellent, value for money, publication.

**Colin Welch**


The town of Stratford-upon-Avon is best known as the birthplace of William Shakespeare. Fifty years ago it was a sleepy country town visited by few, but with the rising growth in international tourism, it now ranks as one of the most-visited “must-do” places in Britain. As a consequence the town has grown apace, and it is timely that at the beginning of a new millennium, another local inhabitant should put pen to paper to describe the town’s flora and fauna. John Price, an assiduous entomologist, has carefully compiled a checklist of species, mainly from his own observations, but latterly with some help from Steve Lane (Coleoptera) and Stephen Falk (Diptera). The book begins with a map of the study area, giving key place names and features such as the river Avon and the Stratford canal that bisect the town. This is followed by a brief introduction and acknowledgements section (4 pp.). The number of species found is listed as: insects (2139), other invertebrates (190), birds, amphibians and mammals (65, 4 & 20), vascular plants (493), fungi (389) and lichens and bryophytes (123). Thus, insects constitute approximately 62% of the total, suggesting that, despite the hard work to date, many more species remain to be discovered. The rest of the book (209 pp.) is devoted to a conventional check list, which has obviously taken the author many hours to complete, as no errors were detected by the reviewer. For each taxon, there is one line of text describing present distribution and status. Although this might be considered sufficient information now (and starting from an almost zero data-base it is certainly useful), it is likely that future users will wish to know much more about the status of species than presented here. Just how widespread is “widespread”, and how many sightings/captures were involved in reaching this judgement? Apart from the Lepidoptera, little information is given on this subject. For obvious reasons of space, the author chose not to present distribution maps, which might have assisted future historians in this respect. The book is primarily a check list. It is a pity that with so much information at his fingertips the author did not provide any comparative information on the numbers of species present in the inner town compared with the suburbs and peripheral rural areas to show the effects of urbanisation: a current hot topic in ecology. It would have been interesting to compare the biodiversity of Stratford with other nearby towns such as Solihull and Birmingham for which quantitative as well as qualitative data on Lepidoptera and other orders have been published (Badmin, 1969). That said, the book is a useful addition to the growing number of excellent books on the fauna and flora of Warwickshire, and I wish that such a book had been available when I started taking an interest in entomology, just a short walk away.

**John Badmin**

**Reference**

OBITUARY

ALEXANDER DONALD ABBOT RUSSWURM
1904–2001

Alexander Donald Abbot Russwurm was born in Guildford, Surrey, on the 11 June 1904, the eldest of three children. To avoid potential confusion arising from the long standing family tradition of naming first sons Alexander, he was known as Donald, or Don. The origin of the very unusual surname is mentioned in a fascinating family history dating back to around 1720 and Virginia, America. It is thought to be Scandinavian, circa 1200 in the form of Ruzwurm, although sometimes spelt Rossworm and Rosworm. The English branch of the family was established by Don’s grandfather.

Don was born into an Edwardian age of great interest in the natural world; indeed, his relatives included the 19th century ornithologist and naturalist Reverend Canon Atkinson, author of several popular books on various natural history topics, and Edward L. Atkinson, surgeon and parasitologist on Captain Robert Scott’s fateful Antarctic expedition that began in 1910.

Don’s interest in butterflies started about the age of twelve when his father showed him how to set them on an improvised setting-board made from two matchboxes. A copy of Richard South’s Butterflies of the British Isles from his parents one Christmas became a treasured possession. His father was an accomplished artist and encouraged his children accordingly, although regrettably, circumstances prevented him living to see the rewards of his efforts. For besides Don’s achievements, his sister Gaye also went on to be successful, with her work accepted by the Royal Academy. The proximity of their home in Leighton Buzzard to the London and North Western railway line was instrumental in the development of another of Don’s life-time interests: steam locomotives and railways.

The family summer holidays were spent at Selsey, in Sussex, staying at their converted seaside railway carriage (later mistakenly destroyed in an arson attack by the suffragette movement—their intended target being a similar one owned by the Liberal MP Charles Masterman). There, armed with his net, Don would take himself off collecting, out towards the peaceful solitude of Church Norton, overlooking Pagham Harbour.

Completing his schooling in Bletchley and Dunstable, he left at sixteen to join the Eastern Telegraph Company as a trainee submarine cable telegraphist. After qualifying, he was posted abroad to their cable station at Carcavellos, in Portugal, where he was delighted to find many of the migrant butterflies rare to Britain, in abundance. The station had its own golf course and tennis courts and he soon became quite a proficient player. Postings to Marseille, Alexandria, and Suez followed, with the end of his first five-year term overseas completed in Aden, where his health was affected by the oppressive climate and poor diet. On his way back to England an insect bite on his leg turned septic, resulting in him having to spend a large part of his six months’ leave convalescing.

His final tour of duty saw him return to Suez before going on to Zanzibar, a posting he enjoyed tremendously. With less work, ample opportunity to indulge in tennis and collecting, this tropical island was a paradise, although ironically, the first butterfly he caught proved to be nothing more exotic than a Painted Lady, Cynthia cardui (L.). Later on, he was fortunate to witness the dazzling spectacle of a mass immigration of the beautiful day-flying moth Chrysiridia croesus Gerstaecker.
He returned to England in 1932, to work at the company’s London head office in Moorgate. With less free time to collect, he pursued his other interests of oil painting (apart from his father’s tuition, he was self-taught), model railways and classical music. At the outbreak of war he opted to work night duty at considerable personal risk from the continual bombing raids: the first flying bomb to strike London in June 1944 fell close by, just as he was coming off duty one morning. The shift pattern suited collecting and so he continued with it until his retirement in 1959.

Don neither drove nor owned a car. After he retired to the New Forest, a bicycle met most of his collecting needs and there was never a shortage of friends to take him on trips further afield. His interest in aberrations extended to all species and this was reflected in the breadth of varieties in his collection. The Chalk Hill Blue, *Lysandra coridon* (Poda) (after which he named his Brockenhurst home), was a particular favourite and he enjoyed some of the last good seasons for it at Portland, Dorset, including those of 1975 and 1976, when his efforts were rewarded with a boardful of varieties including a female *ultraradiata* B. & L. Although well past its heyday, the New Forest produced some fine captures for him including: *ab. obliterae* Robson & Gardner of the White Admiral, *Limenitis camilla* (L.); *ab. semilechmusoides* Pronin of the Small Tortoiseshell, *Aglaia urticae* (L.); and several melanic forms in the Small Pearl-bordered Fritillary, *Boloria selene* (D. & S.), and the Pearl-bordered Fritillary, *Boloria euphydryne* (L.). His garden also proved lucky, with a Comma, *Polygonia c-album* (L.) *ab. obscura* Closs; and in the remarkable ‘cardui’ year of 1996, an ab. *ocellata* Rebel was taken there by his collecting companion Mark Middleton. Many of their captures are featured in *South’s British Butterflies, Aberrations of British Butterflies*, and *Variation in British Butterflies*.

Despite his advancing years, Don continued to enjoy remarkably good health. A hip replacement operation at the age of seventy-six was only a temporary set-back to his collecting. He was in his eighties when mobility problems finally curtailed his field-work. He then derived immense pleasure from his successful temperature experiments on the Nymphalidae, guided by his friend Karl Bailey.

Don’s career as a butterfly illustrator began rather by chance. Regularly exhibiting at the company’s private art exhibitions, his work had been noticed by a colleague who informed him that the publishers of the magazine *Nature Lover* required an artist. With his interest in collecting recently rekindled by the marvellous migrant years after the war (he took eight Pale Clouded Yellow, *Colias hyale* (L.) in September 1947 at Seaford, Sussex), his season’s captures formed the basis of the illustrated articles he began contributing to the magazine in 1948. His first book illustrations appeared in 1947 in Captain Bernard Acworth’s *Butterfly Miracles and Mysteries*.

His skill and reputation for painting aberrations steadily increased. In 1968 he was commissioned to paint the adult stages for Graham Howarth’s *South’s British Butterflies*, having been recommended for the job by Richard Ford. Don’s own book *Aberrations of British Butterflies* was published in 1978. In between he undertook numerous private commissions including one for myself—later to be reproduced in our joint collaboration *Variation in British Butterflies*, which also included his biography and featured many examples of his work over the years. The launch of the book was held on his ninety-sixth birthday.

Don joined what was then the ‘South London’ in 1952, and only a few weeks before his death, was made a Special Life Member. A regular exhibitor at the annual exhibitions, he was often called upon to select specimens for the exhibition photograph. Although he contributed a few articles to the entomological journals, his illustrations appeared more often.
He never received the financial recognition his work truly deserved. Success, however, comes in many guises. In addition to the two aberrations dedicated to him (Clouded Buff, Diacrisia sannio Hübner ab. russwurni Watson, and the Clouded Yellow, Colias croceus (Geoffroy) ab. russwurni Harmer), he has bestowed upon entomology a wonderful legacy through his books, illustrations and the many lepidopterists he inspired with his infectious enthusiasm for aberrations.

He was a benign, generous and good-natured person. Notwithstanding his many splendid captures, he always enthused over the good fortune of others in the field. If he could help them acquire a particular insect he would willingly do so, whether by way of a locality, access to his moth trap, or inviting them to make Coridon their collecting pied-à-terre. I well remember his kindness and generosity when we first met in 1971. With the wide age difference between us, the only thing we seemed to have in common was our mutual interest in butterflies—yet from this developed a long-lasting friendship. He was extremely polite and although appearing rather self-conscious at times (never more so than when being photographed), he was jovial and relaxed enough in familiar company. He had a gentle and cheerful sense of humour and a fund of entomological anecdotes. Despite receiving at least one proposal of marriage in his earlier days, he chose to remain single: he could recite too many instances where matrimony had come between fellow collectors and the pursuit of their hobby, often with the same predictable, unfortunate outcome.

With Mark Middleton later going to live at Coridon, Don was able to enjoy over forty years of idyllic retirement there, immersed in his interests. Despite arthritis in his hands and failing eyesight, he continued painting well into his nineties, concentrating on producing his own personalised Christmas cards. Only in the last year or so of his life did his age catch up with him. It was hoped that a cataract operation in early 2001 would restore some of his lost vision but it did not bring about any noticeable improvement—those eyes that had served him so faithfully for nearly a century were all but worn out. Gradually his overall state of health declined and, after a brief illness, he passed away peacefully on the 15 December.

In accordance with Don’s wishes his funeral service was conducted by his friend and fellow member of our Society the Reverend Steve Pittis and his ashes interred at Church Norton, where his mother, elder sister and his cousin the distinguished dramatist Robert Cedric Sherriff, who wrote Journey’s End, are buried. In paying tribute to one of the most eminent British butterfly artists of the last century, Karl Bailey said of Don: ‘He left this world without ever having made an enemy.’ I don’t think anyone fortunate to have known A. D. A. Russwurm would disagree.

We extend our sympathy to Gaye in her sad loss, and I am deeply indebted to her for all the help she has given me here.

Alec S. Harmer

I first met Donald at Bob Watson’s home in Boldre, in the New Forest, in 1964. As we chatted, it was not long before he suggested that we should collect together. Prior to this I had only collected moths and did not know the best butterfly localities. Later on, I readily agreed to his suggestion that, having decided to leave his collection to me, we should amalgamate our efforts, thus avoiding taking too many typical specimens. In 1967 we decided to go further afield so we travelled up to Arnside, Westmorland, to take the Scotch Argus, Erebia aethiops aethiops (Esper). We found this species so rewarding that we decided to spend another holiday at the same place, this time installing a moth trap at the hotel. We also spent two holidays
in pursuit of the Large Heath Coenonympha tullia davus (Fabricius), also with the same excellent results. We later went with Bob Watson to Ben Lawers, Perthshire, and obtained a varied series of the Small Mountain Ringlet, Erebia epiphron scotica Cooke.

In 1966 I was away from home for six weeks and asked Donald if he would run my moth trap in his garden. He was keen to do this, and when I got back I found that he had captured a number of species which did not occur at my home in Boldre, so I asked him if I could install a trap permanently in his garden. He readily agreed and I wrote to Watkins & Doncaster ordering one to be delivered to his home. The late Richard Ford delivered it himself as for some time he had wanted to visit Donald, and it was this visit that led to him illustrating the new ‘South’. Over the years Donald’s captures included several male ab. albescens Tutt of the Privet Hawk-moth, Sphinx ligustri L., and two notable migrants: the Striped Hawk-moth, Hyles lineata livornica Esper; and the Slender Burnished Brass, Diachrysia orichalcea Fabricius.

When my mother went into a rest home, her house was sold, so I moved in with Donald. It worked well enough, though a little cramped. His life was full of interest, and apart from butterflies, he was a fan of a variety of sports and interested in railways and photography. His greatest love, though, was classical music. He will be sadly missed by his very large circle of friends.

H. G. Mark Middleton

I first met Donald in March 1968 when he visited me at the Natural History Museum, South Kensington to discuss the selection of the specimens to be figured in the then ‘new’ edition of ‘South’, which I had been given the task of writing. Following that initial meeting we corresponded and met frequently during the next three years. There was a great deal of work and discussion involved over the specimens concerned as they were very widely scattered, some being at South Kensington, some at Tring and some in private collections. The sheer logistics involved were intriguing and time consuming.

I was always—and still am—amazed at how quickly and accurately Donald painted his beloved aberrations and his fund of knowledge concerning their data. He was fundamentally a rather shy man (one could not imagine him ever ‘cocking a snook’ at authority), exceedingly kind and generous and made many collecting friends. His exquisite brushwork was greatly appreciated by them and he would gladly paint an excellent likeness of an extreme variety for the lucky person who had the good fortune to capture it. He figured many of these in his own book Aberrations of British Butterflies.

Apart from his absorbing interest in British Lepidoptera, he had a great love and encyclopaedic knowledge of classical music. He eventually replaced all of his large collection of long playing records with compact discs. He adored Wagnerian opera and, when he was living near London, made visits to Covent Garden and other venues. His other great interests were steam locomotives, cricket and lawn tennis (only the men’s game). When he came to stay with us in Arkley, we would sometimes go to a concert. And, in later years, when he was confined to his wheelchair, I would visit him and Mark Middleton fortnightly at Coridon. The time went exceedingly rapidly and I often drove back home in the early hours, having had lengthy discussions concerning the specimens in their joint collections.

As a generous friend and expert entomological artist he will be greatly missed.

Graham Howarth
Fig. 2. A. D. A. Russwurm working on his 1994 Christmas card. October 1994. Photo: ©Alec S. Harmer.
Donald was a sensitive man who had spent his working life in an occupation which he did not find congenial; on retirement he found his haven and solace in the New Forest among his beloved butterflies. He was too shy to make friends readily, but in and around the Forest he found other nature-lovers and neighbours with whom he enjoyed mixing.

He loved classical music and was forever tinkering with his ‘gramophone’ equipment, continually trying to improve the quality of sound. Much of his time was also spent in depicting butterflies, their varieties and aberrations, in watercolour and, despite his reticence, he quickly became known for the fidelity and beauty of these ‘portraits’ and as a natural successor to F. W. Frohawk.

I first got to know him well when he came to see me with forty beautiful plates and the text of a projected book. He was crestfallen and unhappy and told me that the Publications Department of the British Museum (Natural History) (now the Natural History Museum) had had it in hand for some months with a view to publishing it, but that it had just been returned to him with a brief note saying that they had decided against it. He asked if E. W. Classey Ltd. would publish it and, although I felt sure that the BM(NH) would have done a better job, I agreed. It was thus that Aberrations of British Butterflies saw the light of day in 1978.

In later life a great blow fell on him: arthritis in his hands and failing eyesight gradually affected his painting ability. Despite this however, he continued to send to a few of his friends (of whom I was fortunate to be one) hand painted Christmas cards. December 2000 brought the last card from Donald and it was of a colour photograph of an earlier painting of Vanessa cardui (L.); it must have cost him dear to thus admit defeat—but he was indomitable and would not let his friends down.

I was proud to have known Donald: quiet, shy, reliable, knowledgeable, gifted and staunch . . . I could think of several other epithets, all of praise and all true.

ERIC W. CLASSEY

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THE AMATEUR ENTOMOLOGIST’S SOCIETY

The AES is a Society for all entomologists and aims to promote and disseminate entomological knowledge by every means possible especially encouragement of an interest in entomology among the younger generation.

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