

The Coleopterist

Volume 4 Part 1 ♦ April 1995

- 3 Changes to the British List published in 1994 *D. A. Lott*
7 Coleoptera associated with two introduced species of southern beech
Part 2 - phytophagous species *R. C. Welch*
17 Breeding habitat and biogeography of *Triplax russica* (Linnaeus)
(Erotylidae) in Britain *K. N. A. Alexander*
21 Recent advances in the higher systematics of Curculionoidea, as they
affect the British fauna *M. G. Morris*

Notes

- 2 A note on specimen labels *A. H. Kirk-Spriggs*
2 Swarming of *Pyrochroa serraticornis* (Scopoli) (Pyrochroidae) on an elm stump
B. Constantine
6 On the genus of *Hypomedon debilicornis* (Wollaston) (Staphylinidae) *A. G. Duff*
14 *Pogonocherus fasciculatus* (Degeer) (Cerambycidae) in Surrey *J. S. Denton*
14 Recent records of scarce *Donacia* Fabricius species (Chrysomelidae) in Surrey
J. S. Denton
14 *Trichiusa immigrata* Lohse (Staphylinidae) in Leicestershire *D. A. Lott*
15 Saproxylic Coleoptera from southern beech: additions and corrections *R. C. Welch*
19 *Hylesinus orni* Fuchs (Scolytidae) not a synonym of *H. varius* (Fabricius) *A. A. Allen*
20 Another *Anthaxia* Eschscholtz (Buprestidae) enigma *A. A. Allen*

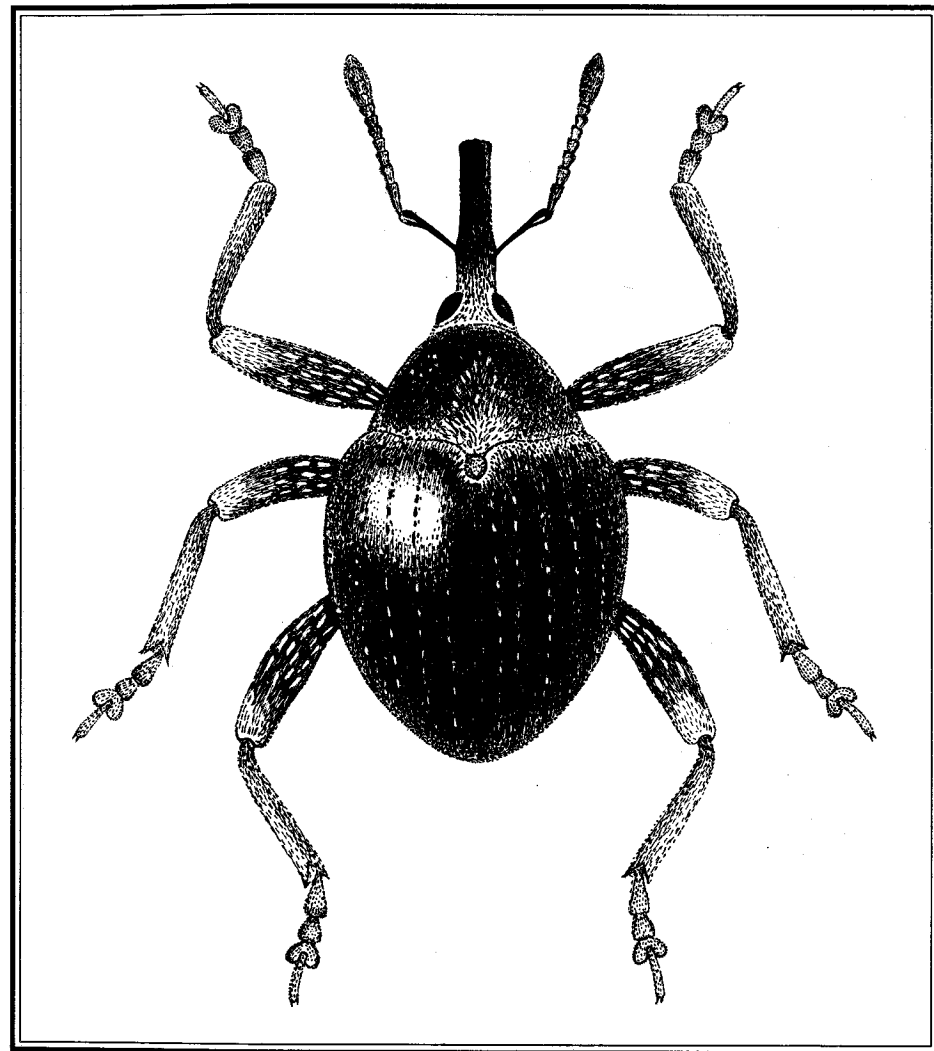
Review

- 6 Ground Beetles in the Yorkshire Museum by M. Denton *A. G. Duff*
1 Editorial
16 Subscribers' Notices
31 County and Regional Recorders
32 Literature Notices

Cover: *Orobitis cyaneus* (Linnaeus) (Curculionidae) *R. W. J. Read*

The Coleopterist

Volume 4 Part 1 ♦ April 1995



Changes to the British List in 1994
Phytophagous Coleoptera associated with southern beech
Breeding habitat and biogeography of *Triplax russica*
Higher systematics of Curculionoidea
Notes ♦ Review
County and Regional Recorders

The Coleopterist

Board of Governors: Dr R. G. Booth (*Secretary*), C. Johnson, H. Mendel, Prof. M. G. Morris (*Chairman*), Prof. J. A. Owen
Editorial Panel: Dr K. N. A. Alexander, M. J. Collier, Dr A. G. Duff (*Editor*), P. J. Hodge (*Hon. Treasurer*), Dr R. S. Key, D. A. Lott

Addresses

Papers, notes, letters, reviews, advertising, notices:

Dr A. G. Duff, 2 Weavers Court, Frome, Somerset BA11 4EJ

Subscriptions, back issues, missing issues, changes of address:

P. J. Hodge, 8 Harvard Road, Ringmer, Lewes, East Sussex BN8 5HJ

Subscription Rates for 1995

Three issues per annum, carriage included. Parts are issued three times per year, in March/April, July/August and November/December. Payment should be in £ Sterling, by cheque or money order payable to 'The Coleopterist', sent to the Hon. Treasurer. Cash in £ Sterling may be sent but no responsibility for loss will be accepted by *The Coleopterist*.

<i>Individuals (within EC)</i>	£ 7.00
<i>Individuals (other countries)</i>	£ 10.00
<i>Libraries, institutions, businesses, etc.</i>	£ 10.00

Instructions for Authors

The Coleopterist publishes material about the Coleoptera and Strepsiptera recorded from, or likely to occur in, the British Isles. General articles, news items and letters on subjects of relevance to British and Irish coleopterists are also welcome. Suitable subject areas include: systematics, nomenclature, identification, first country or county records, recording schemes, conservation, ecology, biology, behaviour, sampling and collecting techniques, rearing, specimen preparation, curation, field meeting news, and book reviews. Material accepted for publication must not be submitted in a similar form to any other journal.

Material should be typewritten double-spaced with 3 cm margins, on one side only of white A4 or letter sized paper, one copy only, or submitted on DOS-formatted computer diskette in ASCII format and accompanied by a hard copy. Footnotes should be avoided and pages should be numbered. Only names of species and genera should be underlined. Authority names should be given in full. Illustrations should be in black ink, boldly drawn and scaled to allow for a 50% reduction. They must be originals and not photocopies. The ideal position of figures should be indicated in the text. Every effort will be made to care for original artwork but the Editor cannot be held responsible for their loss or damage. For formatting of references, refer to a recent article in *The Coleopterist*.

Authors of papers of two or more pages in length will be provided with 20 free reprints (10 per author for papers with two or more joint authors). Selected papers will be submitted to a referee.

Opinions expressed in *The Coleopterist* are not necessarily shared by the Board of Governors, Editor or Editorial Panel.

Copyright © *The Coleopterist*, 1995
 ISSN 0965-5794

The Coleopterist

Volume 4 Part 1 • April 1995

Editorial

As a comparative newcomer on the scene I was surprised - and flattered - to be offered the post of Editor of this journal by my illustrious predecessor, Howard Mendel. *The Coleopterist* is now entering its fourth year in a period of steadily growing circulation and improving quality. Much of this success has been due to Howard's capable leadership. However, he now feels that he must concentrate on completing his *magnum opus* on the Elateroidea of the British Isles, a project whose completion is eagerly awaited. For leaving the journal in such good shape it is my pleasant duty to thank Howard and the rest of his editorial team for all they have done.

Apart from a change of Editor, *The Coleopterist* now has a Board of Governors (with Prof. Mike Morris as Chairman) to oversee production and financing of the journal and to ensure its long-term future. The Editor will in future be appointed by the Board but day-to-day production will remain in the hands of a separate Editorial Panel.

I have given much thought to the directions that I believe *The Coleopterist* should be taking. Firstly, I have tried to introduce a more professional appearance so that the journal can attract more readers as well as contributors. Secondly, I want to encourage more use of illustration. Budding entomological artists are invited to offer their work for use on the journal cover. Thirdly, I have rearranged the journal's contents into three main categories so as better to reflect the differing types of material submitted:

- * *main papers* of two or more printed pages in length, particularly for the more learned and scientific material, and for which a high standard of scholarship will be expected.
- * *short notes* of less than two pages in length, for documenting new or unusual finds and observations, and accessible to coleopterists at all levels of experience.
- * *general information* such as where to submit records, literature and subscribers' notices, reviews, and news and comment. I want to enlarge the role of the journal as a forum for coleopterists to obtain and exchange information of this sort.

I would like to set a higher standard for the reporting of species new to Britain and Ireland, which in my view have been given too scant a treatment. I would also like to include more on identification: we should not underestimate the difficulties now facing the novice coleopterist with the most recent English-language handbook (that is, one that covers the entire fauna) now more than sixty years old and currently out-of-print. As we have a duty to assist the next generation of British and Irish coleopterists as best we can, I believe that *The Coleopterist* should have a broad appeal while maintaining a high standard for the more technical papers. Finally, I would welcome debate on the question as to what criteria should be used in order to admit a species to our national lists.

This is your journal, and your comments will be welcome.

Andrew Duff

A note on specimen labels

A. H. Kirk-Spriggs

Zoology Department, National Museum of Wales, Cathays Park, Cardiff CF1 3NP

Many entomologists have cause to examine museum collections in order to check specimens on which records are based. As part of my work on the genus *Meligethes* (Nitidulidae) I have checked material in many collections around the country and I am continually coming across the same problem. In many cases specimens have been reidentified, or transferred to an amalgamated series, with no indication as to which name the specimen or specimens stood under in the original collection. In the common situation where more than one species has been collected on the same day at the same site it then becomes impossible to ascertain which specimen a collector's record is based upon.

This problem is avoidable simply by adding a label to each specimen moved, stating for example 'standing as *Meligethes lumbaris*' or 'standing as *Meligethes lumbaris* in the A. E. Gardner Coll.'. This is the system I am now adopting when amalgamating the Coleoptera collections at the National Museum of Wales. In these days of computer-generated labels it takes seconds to produce a whole sheet of such labels, and it takes a minimal amount of extra time to add them to the specimens as they are repinned.

Swarming of *Pyrochroa serraticornis* (Scopoli) (Pyrochroidae) on an elm stump

Barry Constantine

4 The Green, Skipsea, North Humberside, YO25 8SZ

In early March 1994 I began an entomological survey of the grounds of Sewerby Hall (TA 202687), an early 18th-Century house near Bridlington, East Yorkshire. Part of the grounds, which are owned and administered by East Yorkshire Borough Council, has been turned into a zoo, which includes a small colony of Bennett's Wallabies *Macropus rufogriseus*.

On 13th May 1994 I was told by Richard Dibb, the Area Parks Officer, of some red beetles that he had noticed the day before in the wallaby enclosure. On entering the enclosure we found 40-50 *Pyrochroa serraticornis* crawling over an old elm *Ulmus* stump, one of five stumps in the corner of the enclosure, all within a few metres of each other. The trees were cut down about 15 years ago and all the stumps were of about the same height (c. 0.5 m) and girth, with the same fungi growing on them and all in the same reasonably well preserved condition. Only the one stump had beetles on it and none of the stumps had signs of exit holes. Where it was possible to remove bark from some of the stumps, this was done, but there were no signs of the beetles' distinctive larval galleries.

While *P. serraticornis* swarms are not unknown, they are fairly rare, as the species normally only occurs in ones and twos (R.S. Key, *pers. comm.*). What triggers these occasional swarms appears to be unknown, although scent may be a factor. It could be that the wallabies use the stump as a rubbing post, or for scent-marking their territory (since the stump was at the edge of their enclosure), in either case leaving a scent that might be attractive to the beetles. Whatever the cause it seems to have been a short-lived phenomenon: the beetles first appeared on 12th May and had all disappeared within about a week.

Acknowledgements

I would like to thank Richard Dibb, Area Parks Officer, East Yorkshire Borough Council, for bringing the beetles to my attention, John Pickering, Zoo Keeper at Sewerby Hall, for allowing me access to the wallaby enclosure, and Dr Roger Key, for his comments.

Changes to the British List published in 1994

Derek Lott

Leicestershire Museums Service, The Rowans, College Street, Leicester, Leicestershire LE2 0JJ

Introduction

The list below covers additions to and deletions from the British beetle list that were published in 1994. A new category for reidentified species (i.e. a deletion followed by an addition) is included for the first time.

Added or reinstated species

The following status codes are used:

A - species that appear to have *arrived* in (or been introduced to) the British Isles within the last 25 years or so.

C - species that have been *confused* in the past with other species.

D - species that have been *discovered* in collections but without recent confirmation.

N - species apparently *native* or long *naturalised* in the British Isles that have previously escaped detection.

R - species considered to be native by some authorities in the past but not included in recent lists or amendments and now *reinstated*.

CARABIDAE

Calathus cinctus Motschulsky, 1850 C

= *mollis* sensu auct. partim nec (Marsham, 1802)

Added by Anderson & Luff (1994).

STAPHYLINIDAE

Stenus calcaratus Scriba, 1864 N

Included in Hyman & Parsons (1994). This species was also listed in Shirt (1987). For identification see Freude *et al.* (1964).

Philonthus pseudoparcus Brunne, 1976 N

= *sordidus* sensu auct. partim nec (Gravenhorst, 1802)

Included in Hyman & Parsons (1994). A record of this species was published by Owen (1993). To separate this species from others in the *Philonthus sordidus* group see Brunne (1976) or Lohse (1989).

Atheta (Anopleta) verulamii Allen, 1994 N

Described by Allen (1994). Note also that Allen gives details of the additions of *Atheta* ('*Lohse Group I*') *autumnalis* (Erichson, 1839) and *A. (Atheta) laevicauda* Sahlberg, J., 1876, to the British List. These species were first included by Pope (1977) but details of their occurrence in Britain have not been recorded previously.

Atheta (Microdota) atomaria (Kraatz, 1856) R

= *glabricula* sensu auct. partim nec Thomson, C.G., 1867

Reinstated by Allen (1994). This species was removed by Pope (1977) because it was considered to have been confused with *A. glabricula*. Both species occur in Britain.

Ischnoglossa turcica Wunderle, 1992 C

Added by Owen (1994a). See Owen (1994b) for a more detailed account and characters for identification.

BUPRESTIDAE

Agrilus sulcicollis Lacordaire, 1835 N

Added by James (1994).

COCCINELLIDAE

Cryptolaemus montrouzieri Mulsant, 1853 A

Added by Constantine & Majerus (1994). Two specimens of this exotic species were recorded outdoors, but the authors doubt whether the species is established in the wild. *Cryptolaemus* Mulsant, 1853 should be listed near *Nephus* Mulsant.

CHRYSOMELIDAE

Longitarsus obliteratoides (Gruev, 1973) C

= *obliteratus* sensu auct. partim nec (Rosenhauer, 1847)

Added by Booth (1994a). This species is likely to be mixed in collections with *L. obliteratus* (Rosenhauer, 1847). For identification see Gruev (1982).

APIONIDAE

Apion (*Helianthemapion*) *aciculare* Germar, 1817 N

Added by Fowles & Morris (1994). Subgenus *Helianthemapion* Wagner, 1930, would be subsumed in s. *Perapion* Wagner if following Morris (1990), but as the first genus (and species) in the tribe Aplemonini [i.e. before *Pseudaplemonus limonii* (Kirby)] if following the modification of Alonso Zarazaga's arrangement (Morris, 1993) (M.G. Morris, pers. comm.).

Reidentified species**STAPHYLINIDAE**

Phloeopora bernhaueri Lohse, 1984

= *teres* sensu auct. Brit. partim? nec (Gravenhorst, 1802)

Reidentified by Whitehead (1994), who reports that specimens in his collection previously identified as *P. teres* (Gravenhorst, 1802) should be referred to this species, following the revision by Lohse (1984). He also notes that *P. teres* is unlikely to occur in Britain but further work is required in order to establish whether both species are present.

Phloeopora corticalis (Gravenhorst, 1802)

= *angustiformis* sensu auct. Brit. partim? nec Baudi, 1869

Reidentified by Whitehead (1994), who reports that specimens in his collection previously identified as *P. angustiformis* Baudi, 1869, should be referred to this species, following the revision by Lohse (1984). He also notes that *P. angustiformis* is unlikely to occur in Britain but further work is required in order to establish whether both species are present.

CHRYSOMELIDAE

Oulema duftschmidi (Redtenbacher, 1874)

= *melanopus* sensu auct. partim? nec (Linnaeus, 1758)

Reidentified by Booth (1994b). Four males previously named as *O. melanopus* (Linnaeus, 1758) have been identified by the author as the closely related *O. duftschmidi* following a revision by Berti (1989). Further work is required in order to establish whether both species are present in Britain. See also Kippenberg (1994) for identification. Note that the use of "*melanopa*" in Pope (1977) is incorrect.

Deleted and questionable species**STAPHYLINIDAE**

Atheta pusilla Brundin, 1952

Synonymised with *A. benicki* Allen, 1940 by Allen (1994).

References

- ALLEN, A.A. 1994. Notes on some British Staphylinidae (Col.) - 5. The Genus *Atheta* Thoms.: three additions to the fauna, a reinstatement and two synonymies. *Entomologist's Mon. Mag.* **130**: 165-171.
- ANDERSON, R. & LUFF, M.L. 1994. *Calathus cinctus* Motschulsky, a species of the *Calathus melanocephalus/mollis* complex (Col., Carabidae) in the British Isles. *Entomologist's Mon. Mag.* **130**: 131-135.
- BERTI, N. 1989. Contribution à la faune de France. L'identité d'*Oulema* (*O.*) *melanopus* (L.) [Col. Chrysomelidae Criocerinae]. *Bull. Soc. Ent. Fr.* **94**: 47-57.
- BOOTH, R.G. 1994a. *Longitarsus longiseta* Weise rediscovered and *Longitarsus obliteratoides* Gruev (Chrysomelidae) new to Britain. *Coleopterist* **3**(1): 4-5.
- 1994b. *Oulema* '*melanopus*' (Chrysomelidae) in Britain. *Coleopterist* **3**(1): 6.
- BRUNNE, G. 1976. Die Artengruppe des *Philonthus sordidus* Gravenhorst. *Ent. Bl. Biol. Syst. Käfer* **72**: 65-89.
- CONSTANTINE, B. & MAJERUS, M. 1994. *Cryptolaemus montrouzieri* Mulsant (Col., Coccinellidae) in Britain. *Entomologist's Mon. Mag.* **130**: 45-46.
- FOWLES, A.P. & MORRIS, M.G. 1994. *Apion* (*Helianthemapion*) *aciculare* Germar (Col., Apionidae), a weevil new to Britain. *Entomologist's Mon. Mag.* **130**: 177-181.
- FREUDE, H., HARDE, K.W. & LOHSE, G.A. 1964. *Die Käfer Mitteleuropas*. Band 4. Krefeld: Goecke & Evers.
- GRUEV, B. 1982. Beitrag zur Kenntnis der *Longitarsus obliteratus*-Gruppe (Col. Chrysomelidae, Alticinae). *Deut. Ent. Z., N.F.* **29**: 469-473.
- HYMAN, P.S. & PARSONS, M.S. 1994. A review of the scarce and threatened Coleoptera of Great Britain. Part 2. U.K. Nature Conservation No. 12. Peterborough: Joint Nature Conservation Committee.
- JAMES, T.J. 1994. *Agrilus sulcicollis* Lacordaire (Buprestidae): a jewel beetle new to Britain. *Coleopterist* **3**(2): 33-35.
- KIPPENBERG, H. 1994. In: G.A. Lohse & W.H. Lucht *Die Käfer Mitteleuropas*. Band 14. Krefeld: Goecke & Evers.
- LOHSE, G.A. 1984. *Phloeopora*-Studien (ein nomenklatorische Horror-Krimi). *Ent. Bl. Biol. Syst. Käfer* **80**: 153-162.
- 1989. In: G.A. Lohse & W.H. Lucht *Die Käfer Mitteleuropas*. Band 12. Krefeld: Goecke & Evers.
- MORRIS, M.G. 1990. Orthocerous Weevils. Coleoptera: Curculionoidea (Nemonychidae, Anthribidae, Urodontidae, Attelabidae, and Apionidae). *Handbk Ident. Br. Insects* **5**(16), 108 pp.
- 1993. 'British Orthocerous Weevils': corrections and new information (Coleoptera, Curculionoidea). *Entomologist's Mon. Mag.* **129**: 23-29.
- OWEN, J.A. 1993. Use of a flight interception trap in studying the beetle fauna of a Surrey wood over a three year period. *Entomologist* **112**: 141-160.
- 1994a. *Ischnoglossa turcica* Wunderle (Staphylinidae) new to Britain. *Coleopterist* **2**(3): 65.
- 1994b. *Ischnoglossa turcica* Wunderle (Col.: Staphylinidae) in Britain. *Entomologist's Rec. J. Var.* **106**: 241-244.
- POPE, R.D. 1977. Kloet & Hincks. A Check List of British Insects. Part 3: Coleoptera and Strepsiptera. Second revised edition. *Handbk Ident. Br. Insects* **11**(3), pp. xiv+105.
- SHIRT, D.B. 1987. *British Red Data Books: 2. Insects*. Peterborough: Nature Conservancy Council.
- WHITEHEAD, P.F. 1994. *Phloeopora bernhaueri* Lohse 1984, not *P. teres* (Gravenhorst) (Col., Staphylinidae), a British species. *Entomologist's Mon. Mag.* **130**: 173-174.

On the genus *Hypomedon debilicornis* (Wollaston) (Staphylinidae)

A. G. Duff

2 Weavers Court, Frome, Somerset BA11 4EJ

This species was added to the British List by Drane (1994), who followed Lohse (1989) - albeit with some reservations - in naming it *Chloecharis debilicornis* (Wollaston). However, according to Blackwelder (1952), *Lithocharis debilicornis* Wollaston is the type species of *Hypomedon* Mulsant & Rey, 1878, an earlier genus than *Chloecharis* Lynch Arribálzaga, 1884 (type species *Chloecharis rufula* Lynch, a subjective junior synonym of *debilicornis* (P.M. Hammond, pers. comm. per R.G. Booth)).

It would appear that the species should either be named *Hypomedon debilicornis*, with *Chloecharis* falling as a synonym of *Hypomedon*, or as *Sunius debilicornis* if the subjective synonymy of *Hypomedon* and *Sunius* Stephens is accepted. The former course of action is apparently now generally preferred.

Acknowledgements

I thank Dr R. G. Booth and Mr P. M. Hammond for their invaluable advice.

References

- BLACKWELDER, R.E. 1952. The generic names of the beetle family Staphylinidae: with an essay on genotypy. *U.S. Nat. Mus. Bull.* 200, iv+483 pp.
 DRANE, A.B. 1994. A belated note on *Chloecharis debilicornis* (Wollaston) (Staphylinidae) new to Britain. *Coleopterist* 3(1): 2-3.
 LOHSE, G.A. 1989. In: G.A. Lohse & W.H. Lucht *Die Käfer Mitteleuropas*. Band 12. Krefeld: Goecke & Evers.

Review

Ground Beetles in the Yorkshire Museum by Michael Denton. York: Yorkshire Museum. 1993. 83 pp. Available *gratis* from Yorkshire Museum, Museum Gardens, York YO1 2DR.

This booklet summarizes the 12,383 specimens of 324 species of British Carabidae in the large (80,000+ specimens) H.W. Ellis collection at the Yorkshire Museum, with the aim of attracting coleopterists to use this resource, amongst which are cotypes of *Tachys edmondsi* Moore. There is a biography and bibliography of Ellis, with a photograph.

All species of British Carabidae are listed, even where the collection has no specimens, presumably to emphasize where there are gaps. Details for each species are sparse, including just the number of specimens, in some cases a summary of the distributional data and a note on national status. There is an alphabetical index to species, with figures giving the number of specimens for each.

This work is perhaps mainly of value to carabidologists in the north of England, but should encourage all coleopterists to make wider use of the impressive Ellis Coleoptera collection.

Andrew Duff

Coleoptera associated with two introduced species of southern beech

Part 2 - phytophagous species

R. Colin Welch

The Mathom House, Hemington, Oundle, Peterborough PE8 5QJ

Introduction

After being unavailable in Britain for over 20 years, between 1976 and 1978 the Forestry Commission was able to import seed of two southern temperate species of southern beech *Nothofagus* from Chile. Roblé Beech *N. obliqua* (Mirbel) and Raoul *N. procera* (Poepp. & Endl.) Oerst. were not only planted in Commission trial plots but seed was made widely available to forest nurseries throughout Britain. The potential impact of widescale planting of these two exotic broadleaved deciduous trees in the near future prompted the present study, which was conducted on experimental plots planted by the Commission between 1954 and 1956.

Accounts of the surprisingly large associated faunas of phytophagous Lepidoptera larvae (Welch & Greatorex-Davies, 1993) and saproxylic Coleoptera (Welch, 1994) include details of the location of the sampling sites and of the methodology adopted.

Methods and selection criteria

Between 1978 and 1988 Coleoptera were retained from a total of 135 foliage samples, collected at 19 of the 21 sites, sampled on 50 dates. These ranged from Thetford Forest in East Anglia to the Forest of Dean in Gloucestershire, and from Alton Forest in Hampshire to Grizedale Forest in Cumbria. At most locations it was possible to sample the foliage of both tree species, either from nearby compartments or within the same forest area. But at some sites one species was far more abundant and occasionally only one species had been planted; this resulted in 70 samples being collected from *N. obliqua* but only 65 from *N. procera*. Arboreal samples were collected at 17 of the sites sampled for saproxylic Coleoptera (Welch, 1994), plus the following two sites:

FE = Foxley Estates, Mansel Lacey, Herefordshire SO 4142 & 4146.

P = Penyard, Herefordshire SO 611222.

Although some sampling was by fogging and pruning, approximately three-quarters of the samples from each host were obtained using a standardized method of beating (Welch & Greatorex-Davies, 1993).

During eight of the years between 1978 and 1988 in which the foliage of *Nothofagus* was sampled for arboreal Coleoptera, 3483 specimens of 165 species were collected. 61% of these specimens occurred on *N. obliqua* and 39% on *N. procera*. However, the majority of these can be classified as "tourists", a term devised by Moran and Southwood (1982) for species that may visit the flowers to feed on pollen or nectar, or use the foliage for

shelter, sunbathing, or sexual display, but have no intimate association with the plant on which they have been found. Such species are usually easily recognised from a knowledge of their biology, although the reason for the presence of a small number of species will remain uncertain until their life histories are better understood. Nearly half of the species designated as "tourists" occurred as single specimens, or were recorded in small numbers from a single site. Only 21 (13%) of the species recorded are regarded as arboreal phytophages, but these made up approximately 70% of all the beetles collected in the foliage samples.

Of the 21 species identified as phytophagous, only the two *Cryptocephalus* species (Chrysomelidae) and the two Attelabidae are known to have larvae that feed directly upon the leaves of a variety of trees. The unidentified *Cryptocephalus* larvae are thought to refer to one of the two species recorded as adults at other sites. The chafer *Phyllopertha horticola* (Linnaeus) is included because the adults are occasional arboreal foliovores, although their larvae feed on the roots of various grasses. The chrysomelid *Luperus flavipes* (Linnaeus) is included even though it only occurred singly at two sites, whereas another chrysomelid, *Orsodacne cerasi* (Linnaeus), is thought only to be attracted to flowers (usually of hawthorn *Crataegus*) and so, despite recording 16 specimens at two sites, is not included as a phytophage.

The presence of the two Attelabidae on *Nothofagus* may have been accidental: the larvae of *Rhynchites germanicus* Herbst develop in the partially detached stem of various Rosaceae, while those of *Deporaus betulae* (Linnaeus) develop in a conical leaf roll, usually on birch *Betula*, alder *Alnus*, or hazel *Corylus*. However, both species have been recorded less frequently on oak *Quercus* and beech *Fagus* respectively (Morris, 1990). No signs of larval presence were observed during the sampling programme, but neither were they specifically searched for and there is every chance that *Nothofagus* could be acceptable as a host plant.

The remaining species (with over two-thirds of all beetles collected) are all Curculionidae. The adults are known to be polyphagous on the foliage of a range of trees and shrubs, which usually includes at least one member of the Fagaceae or Fagales to which the *Nothofagus* species belong. Conversely, the weevil *Rhynchaenus fagi* (Linnaeus), a common leaf-miner of *Fagus* and recorded in *Nothofagus* foliage samples (Welch, 1994) is not included as no larval mines have been found despite repeated searching. Several of the weevils can be serious defoliators, particularly of young trees. All have root-feeding larvae, most of which attack the same hosts as the adult weevils, but there are some notable exceptions: larvae of *Strophosoma capitatum* (Degeer) feed on roots of ling *Calluna*, those of *S. melanogrammum* (Forster) on dock *Rumex*, those of *Phyllobius pyri* (Linnaeus) on the roots of various grasses, and larvae of the two *Otiiorhynchus* species are polyphagous on a wide variety of plants.

Results

Details of all records of phytophagous Coleoptera recorded from *Nothofagus* are given in Table 1.

Table 1: Phytophagous Coleoptera recorded from *Nothofagus* foliage.

Note: for each species, records are sorted alphabetically by locality (for abbreviations see Welch, 1994); for each locality, records are sorted by sampling method, with dates, tree host (No = *N. obliqua*, Np = *N. procera*) and numbers recorded if more than one.

SCARABAEIDAE

Phyllopertha horticola (Linnaeus)

GF 7.6.88: Np 3, beating.

CHRYSOMELIDAE

Cryptocephalus labiatus (Linnaeus)

AF 6.7.78: No, beating. AW 24.7.79: No 8, beating. GJ 2.7.87: Np, beating. MW 24.6.93: No 2, beating. PE 27.5.79: No 3, beating. TC 28.6.79: No 17, beating.

Cryptocephalus pusillus Fabricius

AW 24.7.79: No 3, Np, beating; 22.8.79: No 4, beating. FW 21.8.79: No, beating.

Cryptocephalus sp.

OP 5.6.86, 3.6.88: No larvae, fogging.

Luperus flavipes (Linnaeus)

OP 13.6.78: Np, beating. SD 4.6.85: No, fogging.

ATTELABIDAE

Rhynchites germanicus Herbst

OP 5.6.86: Np, fogging.

Deporaus betulae (Linnaeus)

L 13.6.78: No, beating. OP 26.5.82: No, beating.

CURCULIONIDAE

Otiiorhynchus rugosostriatus (Goeze)

AF 6.7.78: Np, beating. L 13.6.78: No 4, Np 3, beating. OP 13.6.78: No, beating.

Otiiorhynchus singularis (Linnaeus)

AW 26.6.79: No 19, Np 5; 24.7.79: No 3, beating. FW 5.6.79: Np 14; 26.6.79: Np 9; 24.7.79: Np 7; 27.5.80: Np 11; 22.7.80: Np, beating. GF 7.6.88: Np 2, beating. GJ 2.7.87: No 2, Np 7, beating. GS 7.6.88: No 22, fogging. GT 7.6.88: Np 9, beating. OP 27.5.82: Np, fogging; 3.6.88: No, Np, beating. PE 5.6.79: No; 6.6.79: Np 4; 27.6.79: No 2, Np 3; 25.7.79: No 5; 22.8.79: No, beating. QW 25.6.79: Np 2, beating. SH 6.6.79: No 3; 25.7.79, 22.8.79, 19.9.79: No, beating. TC 7.6.79: No; 26.7.79: Np, beating. W 28.6.79: No, beating. 31.5.86: Np, fogging.

Phyllobius argentatus (Linnaeus)

AF 6.7.78: No 32, Np 10, beating. AW 26.6.79: No 22, Np 56; 24.7.79: No 3, Np 12; 30.6.86: No 3, Np 3, fogging. FW 5.6.79: Np 5; 26.6.79: Np 7; 24.7.79: Np; 23.7.80, 27.8.80: Np 4, beating. GF 7.6.88: Np 12, beating. GJ 2.7.87: No 15, Np 14, beating; 6.6.88: Np 5, fogging. GS 7.6.88: No 20, fogging. GT 7.6.88: Np, beating. L 13.6.78: No 47, Np 61, beating. OP 13.6.78: No 9, Np 11; 11.5.82: Np 2; 26.5.82: No 4, beating; 27.5.82: No 2; 3.6.88: No 3; 5.6.86: No 22, fogging. PE 6.6.79: No 2; 27.6.79: No 11, Np 9; 25.7.79: No 3, Np; 22.8.79: No 2, beating. SD 13.6.78: No 2, Np, beating; 22.5.79: No, pruning. SH 6.6.79: Np 2; 27.6.79: No 26, Np 3; 25.7.79: No 6, Np 2; 22.8.79: No 2; 28.5.80: No 2; 23.7.80: No 3, beating; 4.6.85: No 34; 30.6.86: No 6, Np; 20.5.87: No 2, Np, fogging. TC 7.6.79: No 2; 28.6.79: No 48; 26.7.79: No 7, beating. W 7.6.79: No; 28.6.79: No 13, Np 6; 26.7.79: No, beating; 5.6.85: No 38, fogging.

Phyllobius calcaratus (Fabricius)

FW 29.5.86: Np, fogging. GJ 6.6.88: Np 4, fogging.

Phyllobius maculicornis Germar

FE 25.6.79: No, beating. FW 5.6.79: Np 5; 26.6.79: Np 3; 24.7.79: Np; 27.5.80: Np 5, beating; 4.6.85, 20.5.87: Np, fogging. GJ 2.7.87: No 4, Np, beating. L 4.6.79: No 2, beating. OP 5.6.86: No; 3.6.88: No 3, fogging. PE 6.6.79: Np 2; 27.6.79: No 7, Np 5; 25.7.79: No, Np 2, beating. QW 25.6.79: Np 2, beating. SH 6.6.79: No, Np 2; 27.6.79: No 24, Np 7; 25.7.79: No 7, Np; 19.9.79: No; 28.5.80, 26.6.80: No; 23.7.80: No 3, beating; 4.6.85: No 18, fogging. TC 7.6.79: No; 26.7.79: No 3, beating.

Phyllobius pyri (Linnaeus)

AF 6.7.78: No 14, beating. AW 26.6.79: No 16, Np 3; 24.7.79: No, beating. BP 22.4.80: No 3, beating. FE 25.6.79: No 8, beating. FW 5.6.79: Np 26; 26.6.79: Np 4; 27.5.80: Np 3, beating; 4.6.85: Np 4, fogging. GJ 2.7.87: No 2, beating. GS 7.6.88: No 10, fogging. L 22.5.79: Np, beating and pruning. OP 13.6.78: Np 2, beating; 22.5.79: No 2, beating, No 2, pruning; 27.5.82: Np; 5.6.86: No, fogging. P 5.5.82: No, beating. PE 6.6.79: Np 3; 27.6.79: No 3, beating. QW 25.6.79: No 6, Np 2, beating. SD 22.5.79: No, beating, No 2, pruning. SH 6.6.79: No 8, Np; 27.6.79: No 9, Np 2; 25.7.79: No; 25.8.80: No 9; 23.7.80: No 2, beating; 4.6.85: No 47; 30.6.86: Np; 20.5.87: No, fogging. TC 7.6.79: No 28; 28.6.79: No 17, beating. W 28.6.79: No 9; 26.7.79: No, beating; 5.6.85: No 3; 31.5.86: Np, fogging.

Phyllobius roboretanus Gredler

TC 7.6.79: No 71; 28.6.79: No 136, beating. W 28.6.79: No, beating; 5.6.85: No, fogging.

Phyllobius viridiaeris (Laicharting)

OP 22.5.79: No, beating.

Polydrusus cervinus (Linnaeus)

AW 26.6.79: No 49; 24.7.79: No 8, Np; 22.8.79: No 3, Np, beating. SH 6.6.79: Np 2; 25.7.79: Np, beating. TC 7.6.79: No 8; 26.7.79: No 3, beating.

Polydrusus flavipes (Degeer)

SH 4.6.85: No, fogging.

Polydrusus mollis (Ström)

AW 26.6.79: Np, beating.

Polydrusus pterygomalus Boheman

AW 26.6.79: Np 13; 22.8.79: Np, beating. FW 26.6.79: Np 3; 21.8.79: Np, beating; 20.5.87: Np, fogging. GF 7.6.88: Np, fogging. GS 7.6.88: No 3, fogging. OP 3.6.88: No, Np, beating. PE 27.6.79: No, beating. SD 13.6.78: No 12, Np 32, beating. SH 27.6.79: No, beating; 20.5.87: No 2, Np 2, fogging. TC 7.6.79: No 29; 28.6.79: No 8; 26.7.79: No 41; 23.8.79: No 6; 20.9.79: No 2, beating. W 7.6.79: No 4, Np; 26.7.79: No 7; 23.8.79: No; 20.9.79: No 4, beating; 31.5.86: Np 10; 21.5.87: No 2, fogging.

Polydrusus undatus (Fabricius)

AW 30.6.86: Np 3, fogging. FW 29.5.86: No 5, Np, fogging. SH 30.6.86: No 6, Np 3, fogging.

Strophosoma capitatum (Degeer)

GF 7.6.88: Np, beating. GS 7.6.88: No 3, beating. L 13.6.78: No 8, Np 30, beating. OP 5.6.86: No 7, Np, fogging; 3.6.88: No, Np 4, beating, No, Np, fogging. SD 13.6.78: No 4, Np 2, beating.

Strophosoma melanogrammum (Forster)

AF 6.7.78: No 5, Np, beating. AW 26.6.79: No 25; 24.7.79: No 4; 22.8.79: No, Np; 18.9.79: No 2, Np 2, beating; 30.6.86: Np 6, fogging. FW 5.6.79: Np 2; 26.6.79: Np 4; 24.7.79: Np 2; 21.8.79, 18.9.79: Np; 27.5.80: Np 10; 25.6.80: Np; 23.7.80: Np 2, beating; 4.6.85: Np 58; 20.5.87: Np 10; 29.5.86: No 117, Np 11, fogging. GJ 2.7.87: Np 2, beating; 6.6.88: Np 2, fogging. GS 7.6.88: No 4, fogging. L 13.6.78: Np, beating. OP 13.6.78: Np 11; 26.5.82: Np; 3.6.88: No 2, Np 2, beating; 5.6.86: Np; 3.6.88: No 7, Np 3, fogging. PE 6.6.79: No 5; 27.6.79: No 2, Np; 25.7.79: No 2, Np 5; 22.8.79: No 2, Np 5; 19.9.79: No 6, Np 10, beating. QW 25.6.79: Np 2; 23.7.79: Np 2, beating. SD 13.6.78: No 3, beating. SH 6.6.79: No 17, Np 13; 27.6.79:

No 42, Np 3; 25.7.79: No 14, Np; 22.8.79: No 10; 19.9.79: No 85, Np 10; 28.5.80: No 13; 26.6.80: No 6; 23.7.80: No 23, beating; 4.6.85: No 33; 30.6.86: No 7, Np 18; 20.5.87: No 4, Np 5, fogging.

Discussion

Table 1 shows that 17 species were recorded from each host tree species. The presence of three species on *N. obliqua* and of five on *N. procera* is based upon single individuals; such records may represent casual occurrences that would require further field observations and experimental trials to determine the acceptability of *Nothofagus* as a foodplant for these species. There can be no question, however, that many Curculionidae have successfully colonized both species of *Nothofagus* at sites over a wide geographic range in Britain within 35 years of planting at those sites and less than 90 years since their introduction (Welch & Greated-Davies, 1993).

From Table 1 it can be shown that 69% of the phytophagous Coleoptera specimens were collected from *N. obliqua* foliage. However these records are derived from three different sampling methods and of these only the beating samples are truly comparable. Beating samples produced 71% of the phytophagous Coleoptera specimens collected, and 70% of these were from *N. obliqua*. These figures in themselves could be misleading as 53 beating samples were collected from *N. obliqua*, compared with only 47 from *N. procera*. But this still leaves an average of 22.7 specimens per beating sample for *N. obliqua* compared to 10.9 specimens per beating sample for *N. procera*.

In order to determine whether one species of host is more attractive to phytophagous Coleoptera than the other, all records from sites where only one host was sampled on a given date were discounted, to control for variation due to site and date. Beating samples from both hosts on the same day and at the same site were taken on 30 occasions at 12 sites. This provided 132 records where a direct comparison could be made of their occurrence on the two alternative hosts. Data from these samples are presented in Table 2.

Although the same number (14) of species occurred on each host, twice as many specimens were collected from *N. obliqua* as from *N. procera*: 757 specimens in 102 of the 132 samples from *N. obliqua* (i.e. no phytophagous Coleoptera in the other 30 samples) but only 371 in 75 of the 132 samples from *N. procera* (i.e. 57 samples with no phytophagous species). A Mann-Whitney *U* test of these data indicated a highly significant ($p < 0.0002$) collective preference for *N. obliqua* foliage over that of *N. procera* for the 17 species of phytophagous Coleoptera recorded in beating samples during this study.

The occurrence of each species in these remaining beating samples was then examined separately for each host. Contrary to the overall picture, five species were more numerous in beating samples from *N. procera*, but of these, three species (*Phyllopertha horticola*, *Luperus flavipes* and *Polydrusus mollis*) were only recorded from single sites. Of the other two species, *Strophosoma capitatum* was found at five sites but at one of these sites only *N. obliqua* was present. Nevertheless, samples taken from both hosts on the same day at

the remaining four sites showed this weevil to be the only species to be significantly more numerous on *N. procera* (see Table 2). The second species, *Otiorhynchus singularis*, appears to be significantly more numerous on *N. procera* when only the samples in which it is present are considered. However, six samples containing 51 specimens were collected at two sites where only *N. procera* was present and single specimens were recorded at two sites containing only *N. obliqua*. When these are discounted, this species was found on 16 occasions when both hosts were sampled. In these samples the tendency is reversed, but the difference is not statistically significant (see Table 2).

Table 2: Number of specimens of phytophagous Coleoptera from *Nothofagus*, by host species, comparable beating samples only.

Note: χ^2 test * = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$ for d.f. = 1.

	<i>N. obliqua</i>	<i>N. procera</i>
<i>Phyllopertha horticola</i>	0	3
<i>Cryptocephalus labiatus</i>	12 **	1
<i>Cryptocephalus pusillus</i>	8 *	1
<i>Luperus flavipes</i>	0	1
<i>Deporaus betulae</i>	2	0
<i>Otiorhynchus rugosostriatus</i>	5	4
<i>Otiorhynchus singularis</i>	40	25
<i>Phyllobius argentatus</i>	181 **	134
<i>Phyllobius maculicornis</i>	57 ***	22
<i>Phyllobius pyri</i>	85 ***	14
<i>Phyllobius roboretanus</i>	1	0
<i>Phyllobius viridiaeris</i>	1	0
<i>Polydrusus cervinus</i>	63 ***	5
<i>Polydrusus mollis</i>	0	1
<i>Polydrusus pterygomalis</i>	72 *	49
<i>Strophosoma capitatum</i>	13	37 ***
<i>Strophosoma melanogrammum</i>	217 ***	74
Total specimens	757	371

It therefore appears that as far as phytophagous Coleoptera are concerned, with the probable exception of *Strophosoma capitatum*, the foliage of *N. obliqua* is more attractive or palatable than that of *N. procera*. Why should this be?

The size, shape, and arrangement of the leaves on the two trees are markedly different (Fig. 1). In *N. obliqua* the leaves are a smaller, rounded oval, and are more densely arranged, particularly near the tips of branches. In *N. procera* the leaves are larger, oblong or narrowly oval, with a looser foliage. Leaves of this species often attain a size and shape comparable with Sweet Chestnut *Castanea sativa* Mill. and, on average, have a leaf surface area approximately 2.5 times greater than *N. obliqua*. It could be postulated that the smaller, closely arranged leaves of *N. obliqua* provide better protection from the elements and predators. Certainly in a similar study of phytophagous Lepidoptera larvae

61.7% of the specimens were collected from *N. obliqua*, although more species were actually recorded from *N. procera* (Welch & Greatorex-Davies, 1993). However, it seems unlikely that increased shelter is its prime attraction to beetles as 57% of the "tourist" species were recorded in the *N. procera* samples. Alternatively, the broader lamina of the latter species could make its leaves more suitable for a species alighting temporarily. The fact that budburst in *N. obliqua* is consistently earlier than in *N. procera*, at least in southern England, may hold the key to explaining the differences between the insects colonizing the two trees.

Clearly our knowledge of what attracts phytophagous species to these two southern beech hosts, and what makes one tree more attractive than the other, remains fairly basic and hypothetical. As far as I am aware next to nothing is known of the plant chemistry of *Nothofagus* foliage, or how it compares with that of our native Fagaceae. It would require a considerable experimental input to go even part way to answering these questions.

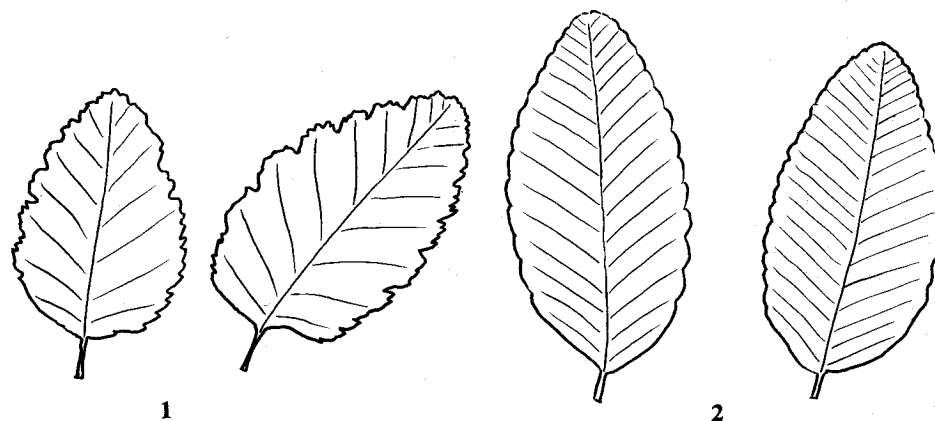


Fig. 1: Leaves of *Nothofagus* species (approx. 0.5X life size): 1 *N. obliqua*, 2 *N. procera*.

References

- MORAN, V.C. & SOUTHWOOD, T.R.E. 1982. The guild composition of arthropod communities in trees. *J. Anim. Ecol.* 51: 289-306.
- MORRIS, M.G. 1990. Orthocerous Weevils. Coleoptera: Curculionoidea (Nemonychidae, Anthribidae, Urodontidae, Attelabidae, and Apionidae). *Handbk Ident. Br. Insects* 5(16), 108 pp.
- WELCH, R.C. 1994. Coleoptera associated with two introduced species of southern beech: Part 1 - saproxylic species. *Coleopterist* 2(3): 71-79.
- & GREATORX-DAVIES, J.N. 1993. Colonization of two *Nothofagus* species by Lepidoptera in Southern Britain. *Forestry* 66(2): 181-203.

Pogonocherus fasciculatus (Degeer) (Cerambycidae) in Surrey

Dr J. S. Denton

26 Bow Street, Alton, Hampshire GU34 1NY

A single specimen of this handsome longhorn was found on a pile of pine *Pinus* logs at Churt Common (part of Frensham Common), Surrey (SU 8639) on 14th January 1989. The area is dominated by pine woodland, but is not near to any recent plantations. Identification of the specimen was confirmed by Peter Hodge in 1994.

The distribution of this species is centred on the Scottish Highlands, but there are occasional English records; these were summarised by Uhthoff-Kaufmann (1991) who regards it as an adventive south of the border and there appears to be no previous record for Surrey. The species is likely to be established in the area and so joins *Asemum striatum* (Linnaeus) and *Arhopalus rusticus* (Linnaeus) as a successful coloniser of southern pinewoods.

Reference

UHTHOFF-KAUFMANN, R.R. 1991. The genus *Pogonocherus* Zett. (Col.: Lamiidae) in the British Isles. *Entomologist's Rec. J. Var.* **103**(9-10): 243-246.

Recent records of scarce *Donacia* Fabricius species (Chrysomelidae) in Surrey

Dr J. S. Denton

26 Bow Street, Alton, Hampshire GU34 1NY

I swept three specimens of *Donacia obscura* (Gyllenhal) from sedge *Carex* tussocks at a pond on Thursley National Nature Reserve, Surrey (SU 9140), on 4th May 1992. This would appear to be the first record of this species in the south of England for many years. Whether this is a relict population or a recent colonist is not known, but the site already supports very isolated populations of other insects, notably the syrphid *Anasimyia lunulata* (Meigen) (Diptera) and the White-faced Dragonfly *Leucorrhinia dubia* (van der Linden) (Odonata), that are more widespread in the north.

The same pond was also visited by Peter Hodge who found one specimen of the RDB2 species *D. bicolora* (Zschach) on 21st June 1992. On 5th May 1994 I found a population of *D. bicolora* approximately 5 miles from the Thursley pond at Thundry Meadows, Surrey (SU 8942). The beetles were swept, along with hundreds of *D. marginata* (Hoppe), from a partly overgrown pond with emergent vegetation including reed-mace *Typha* and bur-reed *Sparganium*.

Trichiusa immigrata Lohse (Staphylinidae) in Leicestershire

Derek Lott

Leicestershire Museums Service, The Rowans, College Street, Leicester, Leicestershire LE2 0JJ

Trichiusa immigrata Lohse was first recorded in Britain in 1992 (Heal, 1993). It is an immigrant species believed to have originated in North America. On 26th November 1994 I sieved a single example from a dung heap in a field near Croxton Kerrial, Leicestershire (SK 82). This is about 100 miles north of its first recorded locality in Kent and indicates that *T. immigrata* has made considerable progress in its colonization of Britain.

Reference

HEAL, N.F. 1993. *Trichiusa immigrata* Lohse (Staphylinidae) - first record for Britain. *Coleopterist* **2**(1): 18.

Saproxylic Coleoptera from southern beech: additions and corrections

R. Colin Welch

The Mathom House, Hemington, Oundle, Peterborough PE8 5QJ

In my account of the saproxylic species of Coleoptera associated with two species of southern beech, Roblé Beech *Nothofagus obliqua* (Mirbel) Blume and Raoul *N. procerus* (Poepp. & Endl.) Oerst., introduced into Britain from Chile, I listed 90 Coleoptera identified to species plus the two genera *Cantharis* Linnaeus (Cantharidae) and *Mycetophagus* Hellwig (Mycetophagidae) based on undetermined larvae (Welch, 1994). Unidentified larval Aleocharinae, *Rhinosimus* Latreille (Salpingidae), and *Anaspis* O.F. Müller (Scraptiidae) were presumed to refer to species recorded as adults in other samples.

With the publication of a key to larval Carabidae (Luff, 1993) I have been able to identify larval *Dromius* Bonelli and so confirm the saproxylic status of *D. quadrimaculatus* (Linnaeus) on both species of *Nothofagus*. My published list can now be shown to include at least 55 confirmed saproxylics with another 32 probable saproxylic species whose breeding association with *Nothofagus* requires confirmation. The other six species, preceded by an asterisk in my earlier list, had no association with the host trees and are regarded as "tourists" (Moran & Southwood, 1982).

During the process of preparing an account of the phytophagous species of Coleoptera collected from *Nothofagus* foliage (Welch, 1995) I have identified a further five probable saproxylic species together with additional site/host records for 10 of the species previously listed.

Additional species

Note: + = breeding association with *Nothofagus* requires confirmation.

STAPHYLINIDAE

+ *Dropephylla ioptera* (Stephens)

PE 19.9.79: No 2, beating.

NITIDULIDAE

+ *Epuraea unicolor* (Olivier)

OP 5.6.86: No 4, fogging.

CRYPTOPHAGIDAE

+ *Atomaria pulchra* Erichson

FW 26.6.79: Np, beating. W 31.5.86: Np, fogging.

CORYLOPHIDAE

+ *Orthoperus atomus* (Gyllenhal)

FW 29.5.86: Np, fogging.

LATHRIDIIDAE

+ *Enicmus rugosus* (Herbst)

OP 3.6.88: Np, fogging.

Corrections and additional records

CARABIDAE

+ *Dromius agilis* (Fabricius)

SH add 20.5.87: No, fogging.

Dromius quadrimaculatus (Linnaeus)

Remove + sign before name. SH add 20.5.87: No 6 adults 2 larvae, Np 1 larva, fogging.

Dromius quadrinotatus (Zenker in Panzer)

Add SH 20.5.87, No 1 larva, fogging.

Dromius spp. larvae
AW 30.5.86 should read 30.6.86; delete FW 20.5.87, Np, fogging: add to *D. quadrimaculatus*; delete W 2.5.87, Np, fogging: add to *D. quadrimaculatus* as W 21.5.87.

STAPHYLINIDAE

Leptusa fumida Kraatz
Add SH 20.5.87: No 2, fogging.
Leptusa ruficollis (Erichson)
SH 20.5.87: add No 47. W 21.5.87: add No 3.

ELATERIDAE

Dalopius marginatus (Linnaeus)
Delete SD 13.6.78, No & Np, fogging. Amend record for L 13.6.78 to read: No 5, Np 3, beating.
Denticollis linearis (Linnaeus)
Change SD to L and insert No 2, before Np, beating.

THROSCIDAE

+ *Trixagus dermestoides* (Linnaeus)
Change SD to L.

SCRAPTIIDAE

+ *Anaspis maculata* Fourcroy
Change SD to OP: after 20.5.87, insert No 2.
+ *Anaspis rufilabris* (Gyllenhal)
Delete SD 13.7.78, No & Np, beating. Add SH 20.5.87, No 2, fogging.

References

LUFF, M.L. 1993. The Carabidae (Coleoptera) larvae of Fennoscandia and Denmark. *Fauna Ent. Scand.* 27, 187 pp.
MORAN, V.C. & SOUTHWOOD, T.R.E. 1982. The guild composition of arthropod communities in trees. *J. Anim. Ecol.* 51: 289-306.
WELCH, R.C. 1994. Coleoptera associated with two introduced species of southern beech: Part 1 - saproxylic species. *Coleopterist* 2(3): 71-79.
— 1995. Coleoptera associated with two introduced species of southern beech: Part 2 - phytophagous species. *Coleopterist* 4(1): 7-14.

Subscribers' Notices

This section is for subscribers to advertise requests for information, specimens wanted for loan, or entomological items wanted or for sale. **Notices of specimens for sale or exchange will not be accepted.** Notices will be repeated with each issue while space is available (or until withdrawn), newer ones appearing first, and may be edited for brevity.

Entomologist's Monthly Magazine wanted: I wish to purchase the following volumes/parts: 10(113) Oct 1873; 13(156-157) May-Jun 1877; 17(200-204) Jan-May 1881; 18(205-211) Jun-Dec 1881; 27(320, 329-330) Jan, Oct-Nov 1891; 29(334-351,354) Jan-Aug, Nov 1893; 33(392,395) Jan Apr 1897. Or any of the above as complete volumes. Plus complete volumes: 35, 36, 40, 42-44, 48, 51-53, 55-70. J. Cooter 19 Mount Crescent, Hereford HR1 1NQ.

Breeding habitat and biogeography of *Triplax russica* (Linnaeus) (Erotylidae) in Britain

K. N. A. Alexander

The National Trust, 33 Sheep Street, Cirencester, Gloucestershire GL7 1QW

T*riplax russica* appears mainly to occur in two quite distinct situations in Britain: i) northern woodlands with birch *Betula* on acidic soils, and ii) southern woodlands with ash *Fraxinus* on neutral to base-rich soils. Few published records of the species indicate either the fungus or the tree species but Carlier (1952), for example, mentions ash in Warwickshire, Stephens (1830) ash in Nottinghamshire and hawthorn *Crataegus* near Bristol, and Sculthorp (1949) beech *Fagus* in Epping Forest. Carlier's beetle was found by the fruiting body of the fungus *Daldinia concentrica* (Boet.) de Not., although no mention is made of whether the beetle was actually feeding on this fungus. D.K. Clements (*pers. comm.*) found two individuals under loose bark on an ancient Field Maple *Acer campestre* pollard at Hatfield Forest, Essex, on 8th September 1986.

In the Scottish Highlands and Sherwood Forest, Nottinghamshire, the beetle feeds primarily on the fruiting bodies of the fungus *Fomes fomentarius* (L. ex Fr.) Kickx and, to some extent, *Piptoporus betulinus* (Bull. ex Fr.) Karst (Angus, 1965; Key, 1993; Walker, 1900). *Fomes* forms long-lasting brackets and hence is an available food resource all year round. The Scottish records on birch tend to be in July, a time when entomologists regularly visit that region. However, Key's (1993) Sherwood birch record was in April and I have found it there in October, confirming year round use of *Fomes*.

In Gloucestershire, the beetle appears to be associated particularly with the fruiting brackets of the heart-rot fungus *Inonotus hispidus* (Bull. ex Fr.) Karst on ash. *I. hispidus* is the common and widespread hollower of ash trees but will also cause heart-rot in certain other tree species, including elm *Ulmus*, sycamore *Acer* and apple *Malus*. The brackets develop during the summer months but persist on the tree in a distinctive blackened state throughout the year. My records are all from the late summer/autumn period. Atty (1983) also associates *T. russica* in Gloucestershire with ash, as well as elm and horse-chestnut *Aesculus*. The Gloucestershire records from trees other than ash are: elm in January and April, and horse-chestnut in June, suggesting that the beetle may be obliged to utilise other fungus hosts at times of year when *I. hispidus* brackets are not available.

Although *Fomes* is mainly found recycling birch timber in the north, it does occur at a few old forest sites in the south, where it has been found on beech and sycamore. There appear to be no records for *T. russica* from *Fomes* in these southern localities. Interestingly, these southern *Fomes* are a different form from the northern brackets, being part of the fungus' near continental population rather than the boreal form to be seen in the north (E.E. Green, *pers. comm.*). Birch and ash woodland types are quite different ecologically. Could it be that the northern birch-associated beetle populations are distinct from the southern ash-associated ones? Most, if not all, English sites for *T. russica* are

classic ancient pasture-woodlands and support a good range of the characteristic species listed in Harding and Rose (1986). The northern localities also appear to be ancient woodland sites.

Superimposed on the northern/southern, birch/ash pattern of distribution there is also a distinct separation of north/south records, although not coincident with the habitat separation. Where the records are precise enough I have been able to map them on a 10 km scale and this shows the geographic separation well (Fig. 1).

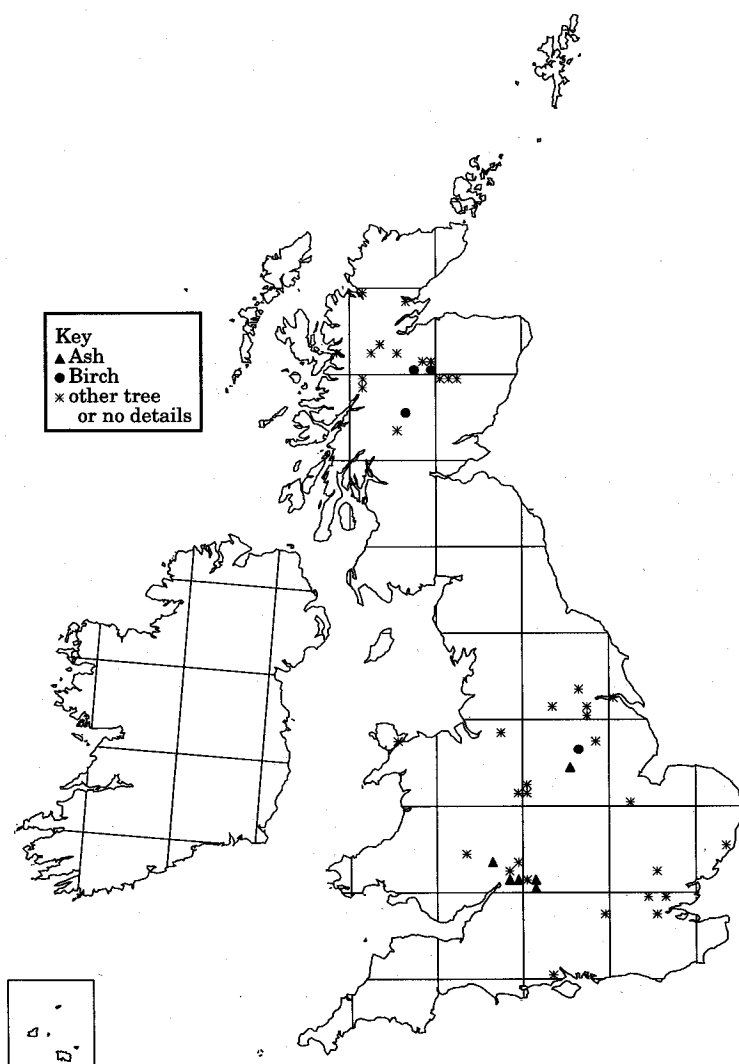


Fig. 1: 10 km square distribution of *Triplax russica*.

There is a well-focused concentration of localities in the Scottish Highlands but all other records lie in lowland England and Wales, south and east of a line from Co. Durham to Cheshire, southwards through Herefordshire to Glamorgan and Cornwall. Within this area localities are rather thinly scattered, with the occasional concentration such as the Cotswold Hills. Northern England has records from both birch and ash and is clearly a zone of overlap of the two populations. The birch population is split in two, with a small relict population in northern England.

References

- ANGUS, R.B. 1965. Further notes on northern Scottish Coleoptera. *Entomologist's Mon. Mag.* **101**: 9-12.
- ATTY, D.B. 1983. *Coleoptera of Gloucestershire*. Cheltenham: privately published.
- CARLIER, S.E.W. 1952. In: The Annual Exhibition - records of exhibits. *Proc. Trans. S. Lond. Ent. Nat. Hist. Soc.*, **1952-53**: 21-22.
- HARDING, P.T. & ROSE, F. 1986. *Pasture-woodlands in Lowland Britain*. Huntingdon: Institute of Terrestrial Ecology.
- KEY, R.S. 1993. *Aclypea opaca* (Linnaeus) (Silphidae) at Sherwood Forest, Nottinghamshire and Lowdales, North-east Yorkshire. *Coleopterist* **2**(2): 45.
- SCULTHORP, A.H. 1949. In: The Annual Exhibition - records of exhibits. *Proc. Trans. S. Lond. Ent. Nat. Hist. Soc.* **1949-50**: 43.
- STEPHENS, J.F. 1830. *Illustrations of British Entomology*. Vol. III. London: Baldwin & Cradock.
- WALKER, J.J. 1900. Coleoptera and Lepidoptera at Rannoch. *Entomologist's Mon. Mag.* **36**: 21-28.

Hylesinus orni Fuchs (Scolytidae) not a synonym of *H. varius* (Fabricius)

A. A. Allen

49 Montcalm Road, Charlton, London SE7 8QG

Because of recent doubt regarding the taxonomic status of *H. orni* (cf. Owen, 1993; Duff, 1993), arising in large measure from its having been placed in the synonymy of *H. varius* (= *fraxini* auctt.) in the current checklist (Pope, 1977), it may be as well to set the matter finally at rest. This I am able to do, having been informed some while ago by Mr Pope that the apparent relegation of *H. orni* to synonymy in the above work was the result of a typographical error. The names to be applied to the two species, however, seem by no means settled, as Owen (*ibid.*) shows.

I take this opportunity to point out one further error in the Scolytidae part of the checklist: *Xyleborus "dryophagus"* (p. 89) ought to be *dryographus*.

References

- DUFF, A.G. 1993. *Beetles of Somerset*. Taunton: Somerset Archaeological & Natural History Society. p. 234.
- OWEN, J.A. 1993. An annotated list of recent additions and deletions affecting the recorded beetle fauna of the British Isles. *Coleopterist* **2**(1): 1-18.
- POPE, R.D. 1977. Kloet & Hincks. A Check List of British Insects. Part 3: Coleoptera and Strepsiptera. Second revised edition. *Handbk Ident. Br. Insects* **11**(3), pp. xiv+105.

Another *Anthaxia* Eschscholtz (Buprestidae) enigma

A. A. Allen

49 Montcalm Road, Charlton, London SE7 8QG

Cooter (1992) tentatively added a second species of this buprestid genus to our list on the strength of two specimens which appear to have been taken in West Sussex in 1972. It is a bronzy-black species attached to pines *Pinus*. I now bring to the notice of coleopterists yet another and very curious case involving this genus, which despite tantalizing uncertainties I feel ought nonetheless to be put on record.

One June day in either 1962 or 1964, my correspondent Keith C. Lewis was collecting beetles at Chalk Wood, Bexley, W. Kent, when he found at the edge of a plantation bordering a large open area a stump of Blackthorn *Prunus spinosa*, about 5 ft. in height. The wood was dead but still fairly hard, and in it were "many beetles not unlike *Anthaxia nitidula*". Most unfortunately, no specimen survives to this day because of the loss of most of the finder's collection through a violent break-in not long after the event. Unhappily also, Mr Lewis suffers from colour-blindness - a serious handicap for an entomologist - but has contacted a friend who was with him at the time and who believes that the beetles' colour was "green-blue". Mr Lewis does however have a good sense of form, and kindly sent a sketch from memory which, I consider, leaves no room for doubt that the insect must indeed have been a species of *Anthaxia*. In the course of his many collecting visits to the area he has never again encountered the beetle, and the Blackthorn stump has long ceased to exist.

What are we to make of this astonishing find? I do not think the species can have been our native form of *A. nitidula* (Linnaeus), the sole undoubted British member of the genus, for the following reasons:

(1) The latter's colour, brilliant green with no tendency to blue, is remarkably constant in the British race (on the continent it is more variable), which, confined to a very restricted area in the New Forest, bears all the marks of a relict population.

(2) If a second centre for *A. nitidula* existed in the London area, could it have remained undiscovered up to the 1960s in view of all the work done there by the indefatigable early collectors? I greatly doubt it.

(3) The details of the Bexley occurrence do not at all fit that of *A. nitidula* in the New Forest, except only that Blackthorn is thought to be the principal larval host of that species, along with crab-apple *Malus* and perhaps hawthorn *Crataegus*. But *A. nitidula* adults appear never to have been found there by digging in dead wood, let alone a number together as in the case of the Bexley insect; the larva of the former is believed to mine under the bark of solid dead or dying branches of the host tree like those of *Agrilus* Curtis. The unknown *Anthaxia*, however, seems to show a gregarious tendency before emerging into the open.

A. salicis (Fabricius), once recorded from Dulwich in S.E. London, is even more definitely excluded on grounds both of colour and of host trees, which are not Rosaceae.

There remains the hypothesis of an introduced alien. One could envisage a gravid female *Anthaxia* of some foreign species accidentally imported in wood or with plants, being lucky enough to find the Blackthorn stump in the right condition for a brood to be raised. At any rate I can offer no more plausible suggestion; perhaps some reader may be able to put forward a better one.

Acknowledgement

My thanks are due to Mr K.C. Lewis for informing me of his extremely interesting find, and for his patience in filling in as many as possible of the details.

Reference

COOTER, J. 1992. *Anthaxia quadripunctata* (Linnaeus, 1758) (Coleoptera: Buprestidae) in England: an enigma. *Entomologist's Gaz.* 43: 75.

Recent advances in the higher systematics of Curculionoidea, as they affect the British fauna

Prof. M. G. Morris

Orchard House, 7 Clarence Road, Dorchester, Dorset DT1 2HF

Introduction

Most British coleopterists will be aware that considerable changes have occurred, and are still occurring, in the understanding of relationships between different taxa of beetles and the ways in which they are classified. At one level these developments may be unimportant, because excellent work can be done on faunistics, ecology, behaviour and many other fields without a detailed knowledge of, or even interest in, higher systematics. However, even in these fields, the use of checklists, survey reports and identification works, may require some familiarity with new arrangements. Moreover, changing nomenclature and the increasing use of alphabetical arrangements may, paradoxically, demand greater knowledge of the various possible classifications in order to locate taxa when they are transferred to unfamiliar families or other suprageneric groups.

It is not intended here to trace the complete history and development of weevil (Curculionoidea) systematics. Rather the purpose of these notes is to indicate proposed changes that have occurred in the last two decades or so, including several that are still controversial. A starting point for this discussion is Pope (1977); this checklist incorporated most (though not all) of the suggestions made by Crowson (1953, 1967) in his great survey of the classification of the Coleoptera. It includes names of some subfamilies, but not those of tribes.

A few preliminary comments on the study of higher classification may not be out of place. It should be obvious that such work cannot be done without the extensive collections in major museums, such as the Natural History Museum, London, and that comprehensive surveys of a group as speciose as the weevils are very time-consuming. These studies cannot be undertaken without great dedication and single-mindedness. For these and other reasons few workers have been attracted to this lengthy and at times unrewarding study. Their frustrations have been well described by one of the foremost researchers in the field:

"Classification of weevils is like a mirage in that their wonderful variety of form and the apparent distinctness of many major groups lead one to suppose that classifying them will be fairly straightforward but, when examined closely, the distinctions disappear in a welter of exceptions and transformation series." (Thompson, 1992).

Although classical morphology is, and doubtless will remain, the bedrock on which higher classification is erected, recent classifications have properly availed themselves of all available information. Crowson (1953, 1967) emphasised larval structures *inter alia*, and May (1993) and others continue research in this specialised field. Anderson (1993) has examined hostplant relationships in the Curculioninae, interpreted as subsuming

several other traditional subfamilies (see below). Other specialised studies have contributed to understanding of particular groups or functions; examples include the evolution of the metafemoral spring used in jumping (Furth & Suzuki, 1992) and a survey of stridulation in weevils (Lyal & King, in press).

Continental European workers have contributed many fine accounts of particular groups of weevils. Notable examples include revisions of *Tychius* Germar (Caldara, 1990), Palaearctic Anthonomini (Dieckmann, 1968), Raymondionyminae (Osella, 1977), Ceutorhynchinae (Colonnelli, 1984, 1986) and Palaearctic Apionidae (Alonzo-Zarazaga, 1989, 1990). These have been matched by publications in other zoogeographic regions by other authors. However, more comprehensive studies of the higher classification of weevils appear recently to have been characteristic of the English-speaking world.

Traditional arrangements

In more traditional and conservative treatments of the Curculionoidea only four families are usually recognised: Anthribidae, Curculionidae, Scolytidae and Platypodidae. This arrangement was followed by Freude, Harde & Lohse (1981, 1983), by Dieckmann (1972 *et seq.*) in his detailed treatment of the weevils of East Germany, and persists to the present day, for example by Jelinek (1993) (although adding Urodonidae [*sic*]).

Generally, however, recent checklists have more or less followed Crowson (1953) in which the families recognised are: Anthribidae, Nemonychidae, Attelabidae, Apionidae and Curculionidae (together with four other non-British ones) (e.g. Abbazzi & Osella, 1992; Hamilton, 1994; Heijerman, 1993; Mroczowski & Stefanska, 1991). However, and perhaps as a sop to the traditionalists, in a later publication Crowson (1956) added the Scolytidae (including the Platypodinae), though noting that Curculionidae and Scolytidae should probably be merged in a strictly natural classification. The checklist of Tempere & Pericart (1989) uses an idiosyncratic arrangement, particularly in the large number of taxa included in Calandrinae, but only because of a wish not to disturb unduly the works of Hoffmann (1950, 1954, 1958), to which theirs is a supplement.

The inclusion of Scolytinae in Curculionidae continues to be a contentious issue and is part of a wider debate on the constitution of the Curculionidae (in the modern sense). Whilst there is little point in lining up authorities supporting or opposing Scolytinae vs. Scolytidae, it may be observed that North American workers on the whole support Scolytidae (e.g. O'Brien & Wibmer, 1982; Wood, 1982) while those in Britain and New Zealand favour putting Scolytinae as a subfamily of Curculionidae. Current views on the distinctness of the Platypodidae seem to be less controversial, with most specialists (though not all) accepting family status for the group.

Recent arrangements

For some years Kuschel has been working to revise the higher classification of weevils. Several of his valuable contributions on particular groups will be referred to later. However, only a preliminary account of his views on the family arrangement has been

prepared (Kuschel, in press) and this has been subject to publication delays so that it has been preceded (and to some extent overtaken) by the most important other recent contribution (Thompson, 1992).

In his treatment of families Kuschel is the more conservative and his arrangement echoes pre-Crowsonian classifications. The families recognised are: Nemonychidae, Anthribidae, Belidae, Attelabidae, Brentidae (including Apioninae) and Curculionidae, the last including Platypodinae and Scolytinae. But into the relatively stable system of families established by Crowson and his successors the findings of Thompson (1992) have burst like a bombshell (if a touch of hyperbole may be permitted). Thompson's work is based particularly on morphological studies of the abdomen, the deciduous mandibular processes, the tibia, and adult male genitalia. His work is impressive both in its careful attention to detail and its comprehensive coverage of the world fauna. It is also profusely illustrated. Thompson recognises 16 families of Curculionoidea, though contrasting this with the three accepted families of Chrysomeloidea and suggesting that some amalgamation of weevil families may be possible when their relationships are better understood.

Thompson takes as his starting point the distinction, first made by Schönherr (1823), between Orthoceri and Gonatoceri (weevils with straight and geniculate antennae respectively). Following Kuschel (1971) this distinction is modified, using the more fundamental difference between the male genitalia in the two groups. In the revised scheme a few taxa are transferred from the Gonatoceri to the Orthoceri. Thus three new 'orthocerous' families are created: Raymondionymidae, Rhynchophoridae and Eirrhinidae.

Zimmerman (1994) has further modified this scheme by erecting a group (Heteromorphi) intermediate between Orthoceri and Gonatoceri, terming all three groups 'divisions of convenience'. His Heteromorphi include Rhynchophoridae, Eirrhinidae and, surprisingly, Nanophyidae. Moreover his Eirrhinidae (which, whether orthocerous or heteromorphous, is certainly not gonatocerous) includes a tribe Hydronomini based on *Hydronomus* Schönherr; this genus is definitely bagoine and so Zimmerman's Eirrhinidae appears to be polyphyletic as some of the other genera included in his family are true erirrhinids. Zimmerman's accounts (1993, 1994) thus require some clarification to reconcile their details with Thompson's review (1992).

British families of Curculionoidea

The families of Curculionoidea recognised by Thompson (1992), which have British representatives, are discussed below. In addition, Thompson recognises Brachyceridae; individuals of *Brachycerus* Olivier, particularly *B. albodentatus* Gyllenhal, are occasionally imported into Britain in garlic or other bulbs.

NEMONYCHIDAE

Regarded as a distinct family by Thompson, and by Kuschel who has recently clarified its position (Kuschel, 1989). Only the most conservative of recent publications include the group in Anthribidae. North American species have recently been catalogued (Hamilton, 1994).

ANTHRIBIDAE

This family includes only Choraginae and Anthribinae, though Kuschel adds Urodontinae.

URODONTIDAE

Regarded as a distinct family by Thompson, but a subfamily of Anthribidae by Kuschel. Both views have been supported by other authors and there is no reason to depart from the treatment of Morris (1990).

ATTELABIDAE

Regarded as comprising Attelabinae (Attelabini+Apoderini) and Rhynchitinae by Kuschel and Thompson. However, several recent publications, particularly in North America, distinguish Rhynchitidae from Attelabidae (e.g. O'Brien & Wibmer, 1982; Wood, 1982; Zimmerman, 1994). A 'lumping' approach to the British fauna seems appropriate, as nearly monotypic higher categories are best avoided unless there are outstandingly good reasons for them.

BRENTIDAE

In the classifications of both Kuschel and Thompson the Apionidae are subsumed into Brentidae, which name has priority. This name can be used in future British publications without unduly disturbing the current arrangement.

RAYMONDIONYMIDAE

Established as a family by Thompson, this is represented in the British fauna by *Raymondionymus marqueti* (Aubé), recently discovered to be resident in Britain (Thompson, 1995). The absence of eyes and hypogean habits characteristic of the family may not be fundamental differences from Curculionidae, but Thompson points out that the group has 'orthocerous' male genitalia and genuinely tetramerous tarsi.

RHYNCHOPHORIDAE

This is another 'new orthocerous' family. On a world basis it is important and speciose, but the British representatives include only *Sitophilus* Schönherr and *Dryophthorus* Germar. British coleopterists may be surprised to find these two genera related, but it has been known for some time that *Dryophthorus* is not cossonine. Thompson has some interesting observations on the family, particularly on the homology of the antennal club. The correct name for the family is Dryophthoridae, which is prior (*vide* Alonso Zarazaga).

ERIRHINIDAE

This is the remaining 'new orthocerous' family to be established by Thompson and is by far the most complicated to explain. Briefly, the subfamily Erirhininae of Pope (1977) is polyphyletic, consisting of the Erirhinidae in the modern sense and a group of curculionid subfamilies. Thompson refers to a manuscript list of the world genera of Erirhinidae, compiled by Kuschel. This includes the following British genera: *Stenopelmus* Schönherr, *Procas* Stephens, *Notaris* Germar, *Eirrhinus* Schönherr (these two genera are distinct), *Thryogenes* Bedel, *Grypus* Germar and *Tanysphyrus* Germar.

The non-erirhinid groups include the subfamilies Bagoinae (*Bagous* Germar *s. lat.* and *Hydronomus*) and Smicronychinae (*Smicronyx* Schönherr), both of which have achieved currency in some recent literature (e.g. Silfverberg, 1979), and a group of genera (*Dorytomus* Germar, *Pachytychius* Jekel, *Pseudostyphlus* Tournier and *Orthochaetes* Germar) that currently has no accepted subfamily name but for which Styphlinae appears to be available. These three subfamilies are included in Curculionidae.

CURCULIONIDAE

It is in their treatment of this large family that Kuschel and Thompson differ most widely. Once Rhynchophorinae and Brachycerinae are removed to Orthocerini, only Curculioninae, Cossoninae, Scolytinae and Platypodinae remain as subfamilies in Kuschel's arrangement. The validity of the last three subfamilies may be accepted, but Curculioninae *sensu* Kuschel is a most unwieldy group. Kuschel's amalgamation of subfamilies, for example in Molytinae (see

below) can be welcomed, but from a purely practical point of view the inclusion of so many taxa in Curculioninae is unhelpful. Anderson (1993) estimates that about 50% of *known* weevil diversity at generic and species levels is included in Curculioninae *sensu* Kuschel. Although distortion of natural relationships is undesirable, a rational alternative to this lumping procedure is clearly wanted. Such an alternative is provided by Thompson, and is discussed more fully below.

PLATYPODIDAE

Considered to be a good family, as traditionally accepted, by Thompson but not Kuschel. Retention of the family would disturb current arrangements less than amalgamation with Scolytidae and is the course favoured by the present author.

British subfamilies of Curculionidae

The subfamilies of Curculionidae accepted by Thompson are discussed below:

ENTIMINAE

This unfamiliar subfamily includes all the British 'broad-nosed' weevils (Adelognatha) i.e. Otiorhynchinae, Brachyderinae and Sitoninae of Pope (1977). These are given the status of tribes in the recent literature, but Morris (in press) and others also include the tribes Tropiphorini, Tanymericini and Alophini in the subfamily. Thompson points out that establishment of the subfamily owes much to the work of Kuschel.

CLEONINAE

Morris (in prep.) utilises the well-established tribes Cleonini, Lixini and Rhinocyllini in this subfamily, which remains unaltered in Thompson's arrangement.

HYPERINAE and CIONINAE

Both subfamilies are retained by Thompson with their currently included genera.

MOLYTINAE

Thompson follows Kuschel (1987), who amalgamated some 30 tribes and subfamilies to form the currently accepted group. In the British fauna the taxa so subsumed are Hylobiinae, Pissodinae and Acicnemidinae *sensu* Pope (1977).

RHYPAROSOMINAE

This subfamily is retained by Thompson, who notes, however that it is of uncertain rank and composition.

RHYTIRHININAE

Retained by Thompson with spelling of the name corrected from Pope (1977).

MAGDALIDINAE

A subfamily included by Thompson as distinct, and not closely related to Molytinae-Pissodini (cf. Lohse, 1983, for example).

ANOPLINAE

This group is not mentioned by Thompson though it is discussed by Kuschel. It is assumed to be a distinct subfamily.

COSSONINAE

A well-defined and distinct group, this subfamily excludes *Dryophthorus*, which is currently placed in Rhynchophoridae, as noted above.

CRYPTORHYNCHINAE

Though poorly represented in Britain, this is a large and important subfamily on a world basis.

BAGOINAE

As noted in the discussion of the 'new' family Erirhinidae, this is one of the self-standing subfamilies representing the curculionid part of the polyphyletic "Erirhininae" auctt.

STYPHLINAE

Not mentioned by Thompson, this subfamily includes those genera that are neither erirhinid nor included in the curculionid Bagoinae and Smicronychinae, as noted above.

SMICRONYCHINAE

Thompson includes this subfamily, which contains only *Smicronyx* in the British fauna.

CEUTORHYNCHINAE

The British species in this subfamily were listed by Morris (1991) following Colonnelli's treatment of the world fauna. One more recent change has been the proposed transfer of *Amalus* Schönherr from Ceutorhynchini to Scleropterini on the basis of its possession of a metafemoral spring, characteristically absent from all Ceutorhynchini (Furth & Suzuki, 1992).

OROBITIDINAE

Although *Orobitis* Germar is not currently considered ceutorhynchine, the genus is best regarded as closely related to that subfamily. Colonnelli (1984) places the genus in Ithyporinae, but this is not correct. *Orobitis* is not mentioned by Thompson and the most satisfactory solution is to place this anomalous genus in its own subfamily, as has been done occasionally in the past.

BARIDINAE

This is a very speciose subfamily on a world basis, though poorly represented in the British (and European) fauna.

ANTHONOMINAE

This subfamily is retained by Thompson, though it is amalgamated with Curculioninae in several recent publications (e.g. Abbazzi & Osella, 1992).

CURCULIONINAE

This subfamily is not specifically mentioned by Thompson, but its limits can be determined accurately from his treatment of other taxa. In the British fauna it includes only *Curculio* Linnaeus s. lat.. The present author recommends using Curculioninae in this narrow sense.

TYCHIINAE

Retained by Thompson as a subfamily, this group has been subsumed in Curculioninae by some other authors (e.g. Anderson, 1993). Its composition in the British fauna may be assumed, at least for the present, to be as in Pope (1977). Although Abbazzi & Osella (1992) place *Acalyptus* Schönherr in their Curculioninae, I prefer to retain the genus in Tychiinae.

GYMNETRINAE

This is merely Thompson's use of a senior name for the Mecininae of Pope (1977).

RHAMPHINAE

Likewise, Thompson shows that Rhynchaeninae is a junior synonym for the name he uses for the 'jumping weevils'.

SCOLYTINAE

Thompson could find no compelling reason to exclude the bark beetles from Curculionidae, but cites no new evidence for his view. Several other recent authors have adhered to separate family rank for this group (e.g. Bright, 1976); a practical reason for this is that so many catalogues of weevils exclude bark beetles (e.g. O'Brien & Wibmer, 1982; Abbazzi & Osella, 1992). In the British fauna an identification handbook (admittedly old and out-of-date) to the Scolytidae (and Platypodidae) already exists (Duffy, 1953) and it is not proposed to include the group in the current author's projected coverage of Curculionidae in this series.

Conspectus of family-group names of British Curculionoidea

The following list attempts to summarise the British weevil fauna down to tribal level, using the information briefly discussed above. Some tribes have been omitted, particularly

in some cases where they are monogeneric. It is hoped that there will be no doubt as to the correct placement of any British species, though it should perhaps be stated that Cossoninae-Cotasterini includes only *Pselactus* Broun.

CURCULIONOIDEA**('ORTHOCERI')****NEMONYCHIDAE****ANTHRIBIDAE****ANTHRIBINAE****CHORAGINAE****URODONTIDAE****ATTELABIDAE****ATTELABINAE****ATTELABINI****APODERINI****RHYNCHITINAE****BRENTIDAE****APIONINAE****NANOPHYINAE****RAYMONDIONYMIDAE****DRYOPHTHORIDAE****SITOPHILINAE****DRYOPHTHORINAE****ERIRHINIDAE****STENOPELMINAE****ERIRHININAE****TANYSPHYRINAE****('GONATOCERI')****CURCULIONIDAE****ENTIMINAE (= Adelognatha)****OTIORHYNCHINI****BRACHYDERINI****SITONINI****TROPIPHORINI****TANYMECINI****ALOPHINI****CLEONINAE****CLEONINI****LIXINI****RHINOCYLLINI****HYPERINAE****CIONINAE****MOLYTINAE (= HYLOBIINAE+PISSODINAE+ACICNEMIDINAE)****LEPYRINI****HYLOBIINI****MOLYTINI (= LIPARINI)****PISSODINI****ACICNEMIDINI****ANCHONINI****RHYPAROSOMINAE****RHYTIRHININAE****MAGDALIDINAE****ANOPLINAE****COSSONINAE****PENTARTHINI****COTASTERINI****COSSONINI**

RHYNCOLINI
 CRYPTORHYNCHINAE
 BAGOINAE
 STYPHILINAE
 SMICRONYCHINAE
 CEUTORHYNCHINAE
 MONONYCHINI
 PHYTOBIINI
 SCLEROPTERINI
 CEUTORHYNCHINI
 OROBITIDINAE
 BARIDINAE
 ANTHONOMINAE
 CURCULIONINAE
 TYCHINAE
 ELLESCINI
 TYCHIINI
 ACALYPTINI
 GYMNETRINAE (= MECININAE)
 RHAMPHINAE (= RHYNCHAENINAE)
 SCOLYTIDAE
 SCOLYTINAE
 HYLESINAE
 IPINAE
 PLATYPODIDAE

Acknowledgements

This wholly derivative paper owes a great deal to discussion with many coleopterists. I thank particularly Mr R.T. Thompson and Dr C.H.C. Lyal for their unstinting help and advice.

References

- ABBAZZI, P. & OSELLA, G. 1992. Elenco sistematico-faunistico degli Anthribidae, Rhinomaceridae, Attelabidae, Apionidae, Brentidae, Curculionidae Italiani (Insecta, Coleoptera, Curculionoidea) I Parte. *Redia* **75**: 267-414.
 ALONSO-ZARAZAGA, M.A. 1989. Revision of the supraspecific taxa in the Palaearctic Apionidae Schoenherr, 1823. 1. Introduction and subfamily Nanophyinae Seidlitz, 1891 (Coleoptera, Curculionoidea). *Fragm. Ent.* **21**: 205-262.
 — 1990. Revision of the supraspecific taxa in the Palaearctic Apionidae Schoenherr, 1823 (Coleoptera, Curculionoidea). 2. Subfamily Apioninae Schoenherr, 1823: introduction, keys and description. *Graellsia* **46**: 19-156.
 ANDERSON, R.S. 1993. Weevils and plants: phylogenetic versus ecological mediation of evolution of host plant associations in Curculioninae (Coleoptera: Curculionidae). *Mem. Ent. Soc. Can.* **165**: 197-232.
 BRIGHT, D.E. 1976. The bark beetles of Canada and Alaska (Coleoptera: Scolytidae). *Insects and Arachnids of Canada* **2**, 241 pp.
 CALDARA, R. 1990. Revisione tassonomica delle specie Palearctiche del genere *Tychius* Germar (Coleoptera Curculionidae). *Mem. Soc. Ital. Sci. Nat. Mus. Civ. Stor. Nat. Milano* **25**: 53-218.
 COLONELLI, E. 1984. Notes sur quelques Ceutorhynchinae de l'Afrique tropicale (Coleoptera, Curculionidae). *Annls Hist. Nat. Mus. Natn. Hung.* **76**: 207-238.

- 1986. Checklist of Phytobiini of the world, with a key to the genera and description of a new species from South Africa. *Fragm. Ent.* **19**: 155-168.
 CROWSON, R.A. 1953. The classification of the families of British Coleoptera (continuation). *Entomologist's Mon. Mag.* **89**: 237-248.
 — 1956. Coleoptera. Introduction and keys to families. *Handbk Ident. Br. Insects* **4**(1), 59 pp.
 — 1967. *The Natural Classification of the Families of Coleoptera*. Hampton: E.W. Classey [reprint with addenda and corrigenda].
 DIECKMANN, L. 1968. Revision der westpaläarktischen Anthonomini (Coleoptera: Curculionidae). *Beitr. Ent.* **17**: 377-564.
 — 1972. Beiträge zur Insektenfauna der DDR: Coleoptera - Curculionidae: Ceutorhynchinae. *Beitr. Ent.* **22**: 3-28.
 — 1974. Beiträge zur Insektenfauna der DDR: Coleoptera - Curculionidae (Rhinomacerinae, Rhynchitinae, Attelabinae, Apoderinae). *Beitr. Ent.* **24**: 5-54.
 — 1977. Beiträge zur Insektenfauna der DDR: Coleoptera - Curculionidae (Apioninae). *Beitr. Ent.* **27**: 7-143.
 — 1980. Beiträge zur Insektenfauna der DDR: Coleoptera - Curculionidae (Brachycerinae, Otiorhynchinae, Brachyderinae). *Beitr. Ent.* **30**: 145-310.
 — 1983. Beiträge zur Insektenfauna der DDR: Coleoptera - Curculionidae (Tanymericinae, Leptopiinae, Cleoninae, Tanyrhynchinae, Cossolinae, Raymondionyminae, Bagoinae, Tanysphyrinae). *Beitr. Ent.* **33**: 257-381.
 — 1986. Beiträge zur Insektenfauna der DDR: Coleoptera - Curculionidae (Eirrhinae). *Beitr. Ent.* **36**: 119-181.
 — 1988. Beiträge zur Insektenfauna der DDR: Coleoptera - Curculionidae (Curculioninae: Ellescini, Acalyptini, Tychiini, Anthonomini, Curculionini). *Beitr. Ent.* **38**: 365-468.
 DUFFY, E.A.J. 1953. Coleoptera: Scolytidae and Platypodidae. *Handbk Ident. Br. Insects* **5**(15), 20 pp.
 FREUDE, H., HARDE, K.W. & LOHSE, G.A. 1981. *Die Käfer Mitteleuropas* Band 10. Krefeld: Goecke & Evers.
 — 1983. *Die Käfer Mitteleuropas* Band 11. Krefeld: Goecke & Evers.
 FURTH, D.G. & SUZUKI, K. 1992. The independent evolution of the metafemoral spring in Coleoptera. *Syst. Ent.* **17**: 341-349.
 HAMILTON, R.W. 1994. *A Catalog of the Coleoptera of America North of Mexico*. Family: Nemonychidae. Washington: U.S. Dept. of Agriculture.
 HEIJERMAN, T. 1993. Naamlijst van de snuitkevers van Nederland en het omliggende gebied (Curculionoidea: Curculionidae, Apionidae, Attelabidae, Urodontidae, Anthribidae en Nemonychidae). *Nederl. Faun. Meded.* **5**: 19-46.
 HOFFMANN, A. 1950. Coléoptères Curculionides (1re partie). *Faune de France* **52**, pp. 1-486. Paris: Paul Lechevalier.
 — 1954. Coléoptères Curculionides (2me partie). *Faune de France* **59**, pp. 487-1208. Paris: Librairie de la Faculté des Sciences.
 — 1958. Coléoptères Curculionides (3me partie). *Faune de France* **62**, pp. 1209-1839. Paris: Librairie de la Faculté des Sciences.
 JELINEK, J. (ed.) 1993. *Check-list of Czechoslovak Insects*. IV. (Coleoptera). Praha: Folia Heyrovskyana.
 KUSCHEL, G. 1971. Entomology of the Aucklands and other islands south of New Zealand: Coleoptera: Curculionidae. *Pacific Ins. Monog.* **27**: 225-259.
 — 1987. The subfamily Molytinae (Coleoptera: Curculionidae): general notes and descriptions of new taxa from New Zealand and Chile. *New Zealand Ent.* **9**: 11-29.
 — 1989. The Nearctic Nemonychidae (Coleoptera: Curculionoidea). *Ent. Scand.* **20**: 121-171.

- in press. A phylogenetic classification of Curculionoidea to families and subfamilies. *Mem. Ent. Soc. Washington* **14**: 5-35.
- LOHSE, G.A. 1983. Unterfamilie: Pissodinae. In: Freude, Harde & Lohse, *loc. cit.*, pp. 110-120.
- LYAL, C.H.C. & KING, T. in press. Elytro-tergal stridulation in the Curculionoidea (Insecta: Coleoptera). *J. Nat. Hist.*
- MAY, B.M. 1993. Larvae of Curculionoidea (Insecta: Coleoptera): a systematic overview. *Fauna of New Zealand* **28**: 1-225.
- MROCKOWSKI, M. & STEFANSKA, J. 1991. *Checklist of Animals of Poland*. III. Coleoptera. Krakow: Krakowskie Wydawnictwo Zoologiczne.
- MORRIS, M.G. 1990. Orthocerous Weevils. Coleoptera: Curculionoidea (Nemonychidae, Anthribidae, Urodontidae, Attelabidae, and Apionidae). *Handbk Ident. Br. Insects* **5**(16), 108 pp.
- 1991. A taxonomic check list of the British Ceutorhynchinae, with notes, particularly on host plant relationships (Coleoptera: Curculionidae). *Entomologist's Gaz.* **42**: 255-265.
- 1993. A review of the British species of Rhynchaeninae (Col., Curculionidae). *Entomologist's Mon. Mag.* **129**: 177-197.
- in press. Broad-nosed Weevils. Coleoptera: Curculionidae (Entiminae). *Handbk Ident. Br. Insects*
- in prep. True Weevils (part). Coleoptera: Curculionidae (Cleoninae to Erihinae).
- O'BRIEN, C.W. & WIBMER, G.J. 1982. Annotated checklist of the weevils (Curculionidae *sensu lato*) of North America, Central America, and the West Indies (Coleoptera: Curculionoidea). *Mem. Amer. Ent. Inst.* **34**, pp. ix+382.
- OSELLA, G. 1977. Revisione della sottofamiglia Raymondionyminae (Coleoptera, Curculionidae). *Mem. Mus. Civ. Stor. Nat. Verona (Ila serie) Sez. Sci. Vit.* **1**: 1-162.
- POPE, R.D. 1977. Kloet & Hincks. A Check List of British Insects. Part 3: Coleoptera and Strepsiptera. Second revised edition. *Handbk Ident. Br. Insects* **11**(3), pp. xiv+105.
- SCHÖNHERR, C.J. 1823. Tabula synoptica familiae curculionidum. *Isis von Oken* **7**(10): cols. 1132-1146.
- SILFVERBERG, H. (ed.) 1979. *Enumeratio Coleopterorum Fennoscandiae et Daniae*. Helsinki: Helsingin Hyonteisvaihtoyhdystys.
- TEMPERE, G. & PERICART, J. 1989. Coléoptères Curculionidae (4me partie). *Faune de France* **74**, pp. 1-534. Paris: Federation Française des Sciences Naturelles.
- THOMPSON, R.T. 1992. Observations on the morphology and classification of weevils (Coleoptera, Curculionoidea) with a key to major groups. *J. Nat. Hist.* **26**: 835-891.
- 1995. Raymondionymidae (Col., Curculionoidea) confirmed as British. *Entomologist's Mon. Mag.* **131**: 61-64.
- WOOD, S.L. 1982. The bark and ambrosia beetles of North and Central America (Coleoptera: Scolytidae), a taxonomic monograph. *Great Basin Nat. Mem.* **6**, 1359 pp.
- ZIMMERMAN, E.C. 1993. *Australian Weevils (Coleoptera: Curculionoidea)*. Vol. III. Nanophyidae, Rhynchophoridae, Erihinae, Curculionidae: Amycterinae, literature consulted. Melbourne: CSIRO.
- 1994. *Australian Weevils (Coleoptera: Curculionoidea)*. Vol. I. Orthoceri Anthribidae to Attelabidae. The Primitive Weevils. Melbourne: CSIRO.

County and Regional Recorders

The aim of publishing this list is to encourage the submission of records to the relevant county or regional Coleoptera recorder. Recorders should have access to a reasonably complete and up-to-date database of species records for their area, and be able to advise when a record is new for a county or vice-county. They may not be able, or willing, to check identifications. Records generally should be submitted in systematic order, with full details of locality (including grid reference), date, numbers and habitat. It is courteous to enclose a stamped self-addressed envelope if you require an acknowledgement.

Offers to fill currently vacant positions will be appreciated. It would help if recorders could liaise with each other to agree their respective boundaries (vice-county boundaries are recommended). This list will be updated periodically so please advise of any corrections.

England

- Cheshire (VC 58) L. W. Hardwick, 4 Caister Way, Over, Winsford, Cheshire CW7 1LT
- Cornwall (VCs 1-2) A. P. Foster, 61 Pittsfield, Cricklade, Swindon, Wiltshire SN6 6AW
- Derbyshire (VC 57) G. J. Maynard, 7 Holbrook Close, Walton, Chesterfield, Derbyshire S40 3JP
- Dorset (VC 9) A. J. W. Allen, 56 Windsor Way, Alderholt, Fordingbridge, Hampshire SP6 3BN
- Gloucestershire (VCs 33-34) I. S. Carter, 165 Leckhampton Road, Cheltenham, Gloucestershire GL53 0AD
- Herefordshire (VC 36) J. Cooter, Hereford City Museum, Broad Street, Hereford HR4 9AU
- Hertfordshire (VC 20) T. J. James, 56 Back Street, Ashwell, Baldock, Hertfordshire SG7 5PE
- Huntingdonshire (VC 31) Dr R. C. Welch, The Mathom House, Hemington, Oundle, Peterborough PE8 5QJ
- Kent (VCs 15-16) E. G. Philp, 6 Vicarage Close, Aylesford, Kent ME20 7BB
- Leicestershire (VC 55) D. A. Lott, Leicestershire Museums Service, The Rowans, College Street, Leicester LE2 0JJ
- Lincolnshire (VCs 53-54) Dr R. S. Key, 67 Peterborough Road, Crowland, Lincolnshire PE6 0BB
- Norfolk (VCs 27-28) M. J. Collier, 67 Church Lane, Homersfield, Harleston, Norfolk IP20 0EU
- Northamptonshire (VC 32) A. B. Drane, Rocklands, 19 Station Road, Cogenhoe, Northampton NN7 1LT
- Nottinghamshire (VC 56) Mrs S. Wright, Nottingham Natural History Museum, Wollaton Hall, Wollaton Park, Nottingham NG8 2AE
- Oxfordshire (VC 23) J. M. Campbell, Dept. of Leisure & Arts, Oxfordshire Museums Store, Witney Road, Standlake, Oxfordshire OX8 7QG
- Somerset (VCs 5-6) Dr A. G. Duff, 2 Weavers Court, Frome, Somerset BA11 4EJ
- Suffolk (VCs 25-26) D. R. Nash, 3 Church Lane, Brantham, Suffolk CO11 1PU
- Sussex (VCs 13-14) P. J. Hodge, 8 Harvard Road, Ringmer, Lewes, East Sussex BN8 5HJ
- Wiltshire (VCs 7-8) Dr M. D. Darby, The Old Malthouse, Sutton Mandeville, Salisbury, Wiltshire SP3 5ND
- Yorkshire (VCs 61-65) R. J. Marsh, 11 Crusader Drive, Sprotborough, Doncaster, South Yorkshire DN5 7RX

Wales

- Anglesey (VC 52) Mrs M. J. Morgan, Dept. of Animal Zoology, Brambell Building, University College of North Wales, Bangor, Gwynedd LL57 4BA
- Caernarvonshire (VC 49) As for Anglesey
- Denbyshire (VC 50) As for Anglesey
- Flintshire (VC 51) As for Anglesey
- Merionethshire (VC 48) As for Anglesey
- Montgomeryshire (VC 47) As for Anglesey
- Radnorshire (VC 43) As for Lincolnshire

Scotland

- Orkney Islands (VC 111) K. Fairclough, Viewforth, Swannay-by-Evie, Orkney KW17 2NR

Literature Notices

- ALLEN, A.A. 1995. An apparently new species of *Mordellistena* (Col.: Mordellidae) in Britain. *Entomologist's Rec. J. Var.* **107**(1-2): 25-27. [*M. imitatrix*, sp. nov.; illus.].
- ALLEN, A.A. 1995. *Apion laevicolle* Kirby (Col.: Apionidae) in the New Forest. *Entomologist's Rec. J. Var.* **107**(1-2): 41.
- ALLEN, A.A. 1995. *Apion sedi* Germar (Col.: Apionidae) in Dorset. *Entomologist's Rec. J. Var.* **107**(1-2): 46-47.
- BLAKE, S., FOSTER, G.N., EYRE, M.D. & LUFF, M.L. 1994. Effects of habitat type and grassland management practices on the body size distribution of carabid beetles. *Pedobiologia* **38**: 502-512.
- COLOMBINI, I. & CHELAZZI, L. 1991. A comparison between the life cycles of different populations of *Eurynebria complanata* (Linnaeus, 1767) (Coleoptera: Carabidae). *Elytron Suppl.* **5**(1): 5-14.
- DEL TIO, R., SORIA, F.J. & OCETE, M.E. 1993. Estudio morfológico de la larva de *Platypus cylindrus* Fabricius (Coleoptera: Platypodidae). *Elytron* **7**: 37-47. [In Spanish; illus.].
- DESENDER, K., MAELFAIT, J.-P. & BAERT, L. 1991. Carabid beetles as ecological indicators in dune management (Coleoptera: Carabidae). *Elytron Suppl.* **5**(1): 239-247.
- DIGWEED, S.C. 1994. Detection of mucus-producing prey by *Carabus nemoralis* Mueller and *Scaphinotus marginatus* Fischer (Coleoptera: Carabidae). *Coleoptis Bull.* **48**(4): 361-369.
- DORADO MONTERO, F.R. 1991. Estudio ecológico de *Chaetabraeus globulus* (Creutzer) y *Acritus nigricornis* Hoffmann (Coleoptera: Histeridae). *Elytron Suppl.* **5**(1): 249-256. [In Spanish].
- JÄCH, M.A. 1991. Revision of the Palearctic species of the genus *Ochthebius* Leach. VII. The subgenus *Enicocerus* Stephens (Coleoptera: Hydraenidae). *Elytron* **5**: 139-158.
- JONES, R.A. 1995. Leg teratology in *Galerucella sagittariae* (Gyllenhal) (Col.: Chrysomelidae). *Entomologist's Rec. J. Var.* **107**(1-2): 33-37.
- KANGAS, E. & RUTANEN, I. 1993. Identification of females of the Finnish species of *Altica* Müller (Coleoptera, Chrysomelidae). *Ent. Fenn.* **4**: 115-129.
- KNILL-JONES, S.A. 1995. *Hydrophilus piceus* (L.) (Coleoptera: Hydrophilidae) on the Isle of Wight - a correction. *Entomologist's Gaz.* **46**(1): 2.
- KUIJPER-NANNENGA, J.L. 1995. *Rhopalapion longirostre* nieuw voor Nederland: een grote sprong noordwaarts (Coleoptera: Apionidae). *Ent. Ber., Amst.* **55**(1): 4-5. [A Malvaceae-feeding *Apion* spreading rapidly across Europe; in Dutch; illus.].
- LOMBARDERO, M.J. & NOVOA, F. 1993. *Liparthrum mandibulare* Wollaston, 1854 (Coleoptera: Scolytidae), primera cita para la fauna de Europa continental. *Elytron* **7**: 105-110. [In Spanish; illus.].
- LYSZKOWSKI, R.M. 1995. The larval habitat of *Leiodes rufipennis* (Paykull) (= *clavicornis* (Rye)) (Col.: Leiodidae): some preliminary observations. *Entomologist's Rec. J. Var.* **107**(1-2): 39-40.
- PEDERSEN, J. 1994. Trøffelbillen *Leiodes cinnamomea* (Panzer, 1793) fundet i Danmark (Coleoptera, Leiodidae). *Ent. Meddr.* **62**: 101-104. [In Danish; illus.].
- SCHMIDT, J. 1994. Zur Synonymie und Verbreitung einiger montaner *Agonum*-Arten (Insecta: Coleoptera: Carabidae). *Ent. Abhandl.* **56**(1): 89-99. [*A. chalconotum* Ménétériés, 1832 = *A. sahlbergii* Chaudoir, 1850; in German; illus.].
- SILFVERBERG, H. 1991. Colour variation in Finnish Chrysomelidae (Coleoptera). 1. Cryptocephalinae. *Elytron Suppl.* **5**(1): 149-157.
- VIG, K. 1991. The effect of the photoperiod on the life cycle of *Phyllotreta* flea beetles (Coleoptera: Chrysomelidae). *Elytron Suppl.* **5**(1): 269-274.
- WHITEHEAD, P.F. 1991. The breeding population of *Meloe rugosus* Marsham, 1802 (Coleoptera: Meloidae) at Broadway, Worcestershire, England. *Elytron Suppl.* **5**(1): 225-229.
- WHITEHEAD, P.F. 1992. The floodplain Coleoptera of the River Avon, Worcestershire, England, with provisional diagnoses of ancient assemblages. *Elytron* **6**: 15-33.

D.J. & D. Henshaw

manufacture a large range of the high-quality Stainless Steel

HENSHAW-KE entomological pins

at very competitive prices

Specimen labels printed to order

and other equipment for the entomologist
including specimen tubes/containers, chemicals,
dissection instruments, microscope accessories,
mounting fluids and genitalia tubing.

Come and visit us on the
MARRIS HOUSE NETS stand at:

The Amateur Entomologists' Society Annual Exhibition

Kempton Park Racecourse, Sunbury, Middlesex
on Saturday 7th October 1995

and

The Leicester Entomological Fair

Granby Halls Leisure Centre, Leicester
on Sunday 26th November 1995

Please send for our lists to:

34 Rounton Road, Waltham Abbey, Essex EN9 3AR
FAX/Tel.: (01992) 717663