The Coleopterist

Volume 5 Part 1 • April 1996

Cover: *Cicindela maritima* Latreille & Dejean (Carabidae) - Thornham Point, Norfolk *R. S. Key*

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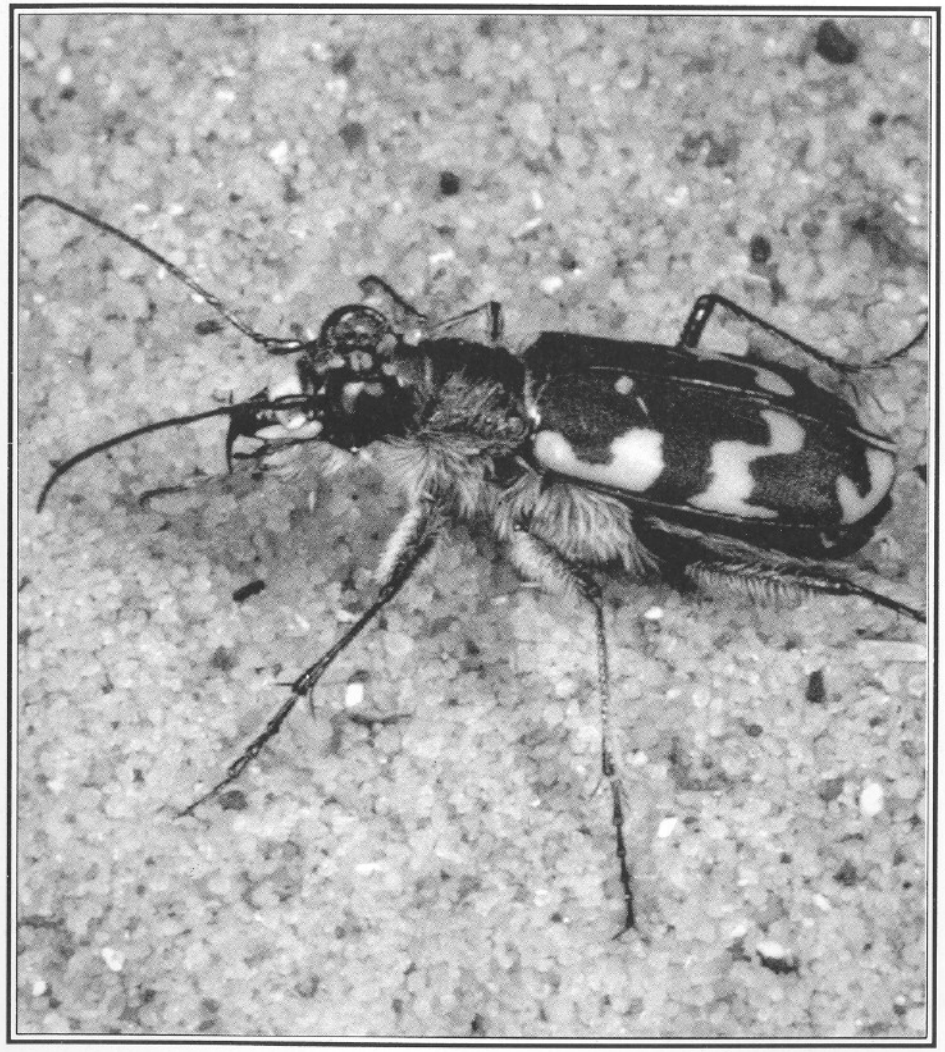

Changes to the British List in 1995
Identity of *Oxypoda brachyptera* and *O. tarda*
Coleoptera in wrack beds in north-east England
Coleoptera recording schemes update
Notes • Letters • Reviews

The Coleopterist

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ISSN 0965-5794

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Changes to the British List published in 1995

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Introduction

The list below covers additions to and deletions from the British beetle list that were published in 1995.

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.

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

STAPHYLINIDAE

Cypha tarsalis Luze, 1902 **C**

Three specimens standing over the name *C. laeviusculus* in two collections have been reidentified as this species by Welch (1995).

MORDELLIDAE

Mordellistena imitatrix Allen, 1995 **N**

A species newly described from Kent by Allen (1995a).

CHRYSOMELIDAE

Oulema melanopus (Linnaeus, 1758) **C**

Lott (1995) provisionally listed *O. duftschmidi* (Redtenbacher) as a reidentification of at least some British *O. melanopus*, following Booth (1994). Cox (1995a) has now confirmed that both species occur in Britain and also reports that the correct name for *O. duftschmidi* is *O. rufocyanea* (Suffrian).

Psylliodes cucullata (Illiger, 1807) **N**

Three specimens were swept in two Welsh localities by Mark Pavett (Cox, 1995b).

RAYMONDIONYMIDAE

Raymondionymus marqueti (Aubé, 1863) **A**

A subterranean species first recorded in Surrey in 1964 by Williams (1968) but then considered to have been a casual introduction. It is now presumably established at least in Kent (Thompson, 1995) and Surrey (Owen, 1995) and was probably introduced to this country some time before 1964. The family Raymondionymidae is one of several new families that were formerly included in the Curculionidae (see Morris, 1995).

Reidentified species

STAPHYLINIDAE

Scopaeus ryei Wollaston, 1872

= *minimus* sensu auct. Brit. nec (Erichson, 1839)

Allen (1995b) reports that the true *Scopaeus minimus* (Erichson) does not occur in Britain and all British records should be referred to *S. ryei* which has been raised from synonymy with *S. minimus*.

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WILLIAMS, S.A. 1968. *Raymondionymus marqueti* (Aubé) typical form (Col., Curculionidae) in Surrey. *Entomologist's Mon. Mag.* **104**: 112.

Gabronthus thermarum (Aubé) (Staphylinidae) recorded from Scotland in error?

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Fergusson (1912) records *Philonthus thermarum* Aubé as follows: "Stirling, in debris of old straw, Rowardennan, September, 1911 (W.E. Sharp)" but in my copy of his paper the entry is neatly crossed out in ink, but with no annotation to explain the reason. The deletion was almost certainly made by Fergusson's own hand as the cover of the paper is endorsed "With Compts., A.F." indicating that it was a personal gift from the author.

Gabronthus thermarum is not recorded from Scotland by Fowler (1888), Fowler & Donisthorpe (1913) or Joy (1932).

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The identity of *Oxypoda brachyptera* (Stephens) and *O. tarda* Sharp (Staphylinidae)

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Introduction

The means of identifying British specimens of *Oxypoda* Mannerheim regarded as *O. tarda* Sharp, rather than other comparably small species in the *brachyptera* group, has not so far been established. Joy (1932) was evidently so perplexed as to how *O. tarda* and *O. brachyptera* (Stephens) might be distinguished that he decided that the former was both a variety of the latter and a species in its own right! They are synonymised in Pope (1977). The type description of *O. tarda* in its four lines of Latin (Sharp, 1871) can scarcely be regarded as adequate for a species in a moderately difficult genus.

During the past decade or so I have observed some 70 English examples that I and other workers had regarded as representing *O. brachyptera*. Any nagging elements of doubt about the specimens I had kept were not immediately dispelled by reference to the genitalia figures in Lohse (1974), so I wrote to Dr Lothar Zerche of Eberswalde, Germany, a recognised authority on the genus. Lohse (1974) indicated that the two could be separated on primary sexual characters, although Zerche (*in litt.*) has cast doubts on the security of this, which my own work tends to confirm. Assing (*in litt.*, 22.5.1995) has also confirmed difficulty in separating the two taxa. Dr Zerche has agreed that all of my own *O. tarda* provisionally named as such are correct in the light of present knowledge. Recent experience and discussion has only served to underline the complexity of the issues; indeed, those who like to pigeonhole taxa run the risk of disappointment with what follows.

Other species of *Oxypoda* may be confused with *O. tarda*. In England the equally small *O. nigrocincta* Mulsant & Rey is a rare species of southern valley-wetlands. It can be recognised at once by its more quadrate pronotum and antennomeres. At first sight, large dark specimens of *O. tarda* may be confused with small *O. lurida* Wollaston, a thermophilous species apparently not occurring in Britain north of the English midlands, where it is limited to dry insolated sites. The subquadrate pronotum and antennomeres of *O. lurida* will readily distinguish it.

The identity of *O. brachyptera*

Continental imagines (named as such by Zerche) are pale or testaceous, the head darker but apparently *not black*. (It is not clear what "nigra" in the type description of *O. tarda* refers to, but the confirmation by Stephens (1839) that "*O. brachyptera*" has a black head is of some significance.) Abdomen less obviously parallel-sided than in *O. tarda*, the

proximal abdominal segments in some cases tapering inwards leaving the elytra visibly wider. *Brachypterous or hindwings vestigial* (generally reduced to a functionally useless vestige), however the constancy and diagnostic significance of this feature is uncertain. Post-cranial dorsum generally appearing significantly less rugose than in *O. tarda* due to weaker and less dense pigmentation. Elytral length 0.24 mm at suture (8 exx.). Antennae a trifle more slender than in *O. tarda* with antennomeres from fourth onwards very slightly more transverse.

Aedeagus (Fig. 1: 5) usually less robust than in *O. tarda*, apparently lacking the conspicuously extended, elongate, distally truncate apex seen in some *O. tarda* aedeagi (Fig. 1: 1-2). Spermatheca as in Fig. 1: 10.

In continental Europe characteristic of well-drained sandy soils, especially *Calluna*-heath (Assing, 1988). British status: unknown. The conventional wisdom in Germany at the present time is that of the two, *O. brachyptera* is characteristic of sandy areas and heathland, whereas *O. tarda* is not. It could therefore be predicted that *O. brachyptera* might be expected in Britain on dunes, heaths and the Breckland. I have now seen two specimens collected at Mildenhall, Suffolk, by Prof. J.A. Owen, but neither conforms closely enough to German specimens named as *O. brachyptera* in my own collection to be regarded as the same.

The identity of *O. tarda*

Mature British imagines variable in colour, some *uniformly dark brown* with darker head, others paler with distal or most abdominal segments and head darker, more or less parallel-sided, some specimens large (males up to 2.6 mm in length) and noticeably robust. The generally blackened head is characteristic of this taxon. Apparently invariably *macropterous*, all of the English specimens that I have seen have had very well developed flight wings. Elytral length variable, not specifically diagnostic, 0.28-0.41 mm at suture (English midlands), 0.24 mm (Scotland). Antennae a trifle more robust than in continental *O. brachyptera* with the outer antennomeres similarly transverse.

Aedeagus as in Fig. 1: 1-4. In lateral aspect the truncate apex of the aedeagus may be noticeably large and robust (Fig. 1: 1); this is believed to be diagnostic. Spermatheca as in Fig. 1: 6-9.

Tolerant of damp valley sediments in England (widely), salt-marshes in Scotland (Sharp, 1871), as well as on cultivated land with grassy margins on heavy soils derived from soft rocks (Duff, 1993; Whitehead, *pers. obs.* e.g. 18 in pitfall traps on Jurassic clay at Drayton, Warwickshire, 1993-1994). Imagines April-August, earliest 3.iv.1988, Little Comberton, Worcestershire. Found on sandy sediments at Loch Garten, Easterness, Scotland, and at Mildenhall, Suffolk (Owen, *pers. obs.*). The finding by Prof. Owen of *O. tarda* in the Mildenhall area of Suffolk casts doubt on my earlier assumption that *O. brachyptera* is xerophilous and *O. tarda* is not.

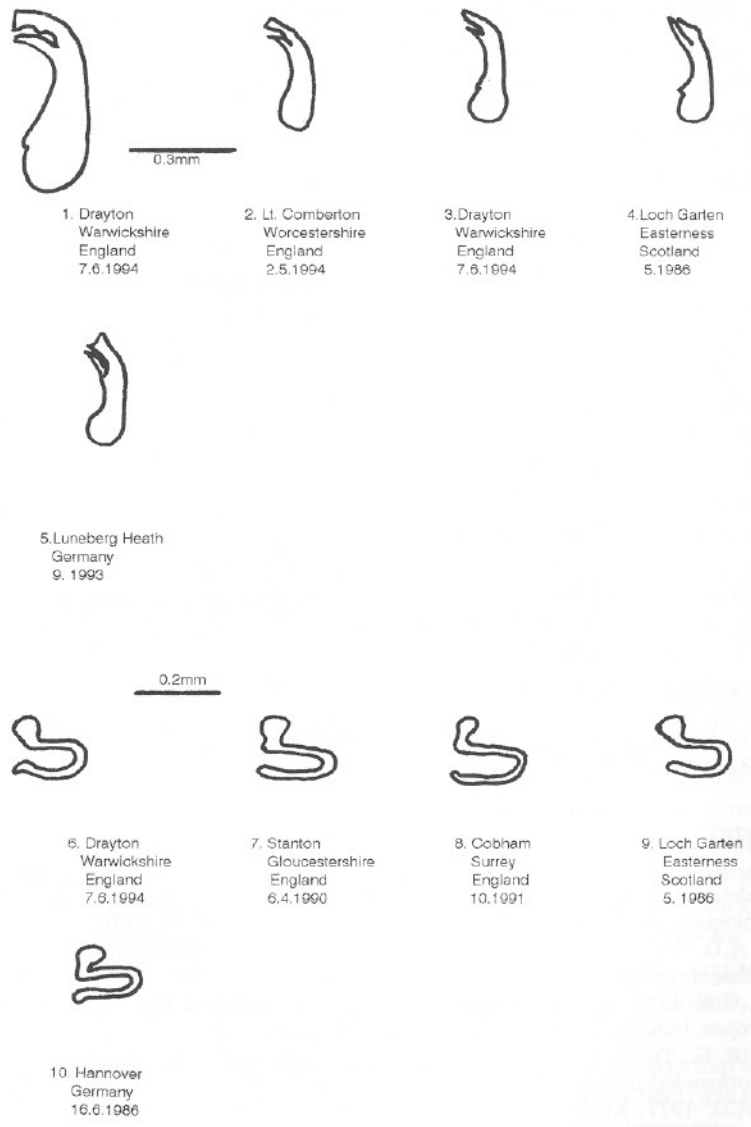

Fig. 1: 1-4. Aedeagi of *Oxypoda tarda* and **5**. *Oxypoda brachyptera* in lateral aspect. **6-9**. Spermathecae of *Oxypoda tarda* and **10**. *Oxypoda brachyptera*.

Discussion

Until British material can be located which compares closely with the continental taxon, *and* the continental view of its ecology, a firm taxonomic statement on the whole issue must be forestalled. Mr P.M. Hammond has suggested to me that examination of the type specimen of *O. tarda* in his care at the Natural History Museum is best done as part of a wider specialist overview. My present understanding (in the current absence of generally accepted synonymy), based on the examination of some 75 specimens, is that *O. tarda* is a well-authenticated British species. A German specimen of *O. tarda* (det. Assing) is, in my view, more like continental *O. brachyptera* than British *O. tarda*.

For the time being, I cannot dismiss the possibility that British and continental material exhibits variation within a single polymorphic complex; one gets a very clear impression that a larger examination of whole-range specimens would make a clear statement on lower taxonomy difficult. Further work on the extent of brachyptery in German populations would be especially helpful. Macropterous British specimens may be a reflection of ancient populations reacting to the rapid appearance of suitable post-glacial habitat with subsequent 'genetic drift' (Mesaroš, Tucic & Tucic, 1995) which type specimens do not allow for! The hope now, in view of the above discussion, is that scrutiny of type material of both *O. tarda* and *O. brachyptera*, by an authority such as Zerche, will provide a more secure nomenclature. It may well be that, if priority is then seen to be relevant and is established, that the last of Sharp's 1871 names remaining valid will finally be sunk.

Acknowledgements

I thank Herr V. Assing, Mr P.M. Hammond, Professor J.A. Owen, Mr S. Corbett and Dr L. Zerche for helpful discussion.

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Notes on Coleoptera found in wrack beds on the north-east coast of England

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Summary

This paper arises from an analysis of samples taken by S.H. in connection with studies on the ecology of coelopid flies (Diptera: Coelopidae). It examines the vertical distribution of Coleoptera within some wrack banks in north-east England and provides data on their relative abundance at three sites. The presence of the Notable species *Heterota plumbea* (Waterhouse) and *Cercyon depressus* Stephens on the north-east coast is confirmed.

Introduction

Walsh (1925), in describing the British coastal Coleoptera, classified the species by habitat type, including *arenicoles* (sand-dwellers), *argillicoles* (clay-dwellers), *limicoles* (mud-dwellers), *calcicoles* (chalk-dwellers), etc. Walsh included, as his category number IV, 'species connected with marine rejectamenta' i.e. those beetles that live in accumulations of rotting seaweed cast up on the shore. There is also some evidence that there exists a degree of specialisation between species utilising stranded seaweed and that this habitat can be further subdivided (Egglishaw, 1958, 1965). It is therefore too vague to describe beetles as 'coastal' without further reference to their particular microhabitat.

Seaweed washed up by the tide and stranded on the shore forms a semi-permanent component of some shores, being replenished with new seaweed as the old, decomposed, matter is washed away by high tides. Wrack beds constitute large masses of decomposing vegetable matter that provides a food resource for a limited number of salt-tolerant species of detritivorous arthropods, which in turn may constitute a food resource for a few specialist beetles. Wrack beds can be classified as *strings* (long, thin accumulations), *flakes* (shallow, carpet-like accumulations) or *banks* (large masses) (Egglishaw, 1958, 1965) and the insect faunas of the three categories can be quite distinct.

As wrack beds age, three distinct layers can be determined. These are: (i) a thin surface layer, 5 cm deep, which is usually dry and brittle and forms a crust on the bed; (ii) a middle layer, 10-20 cm in thickness, which is often dark in colour and highly fragmented due to the feeding action of dipteran larvae; and (iii) lying below this to the substrate, a deep layer where decay appears slower and more anaerobic and the wrack material is not so fragmented (see Phillips *et al.*, 1995). (The depths given should be taken as very general approximations, variation occurring between wrack beds and as the bed ages.)

Several lists of wrack-inhabiting beetle species have been published. Walsh (1991) included a list of seaweed-associated species. Backlund (1945) provided an extensive list of species associated with seaweed in Sweden and Finland, but the list should be interpreted with care since it includes many generalist or ubiquitous species. Egglishaw (1958, 1965) gave a list of species he took in wrack strings and beds from the same localities as in the present study. These were *Cercyon littoralis* (Gyllenhal) (Hydrophilidae) commonly; *Omalium rivulare* (Paykull) commonly; *Carpelimus corticinus* (Gravenhorst) 1 ex.; *Cafius xantholoma* (Gravenhorst) commonly, sometimes in accumulations of up to 100 specimens; *Quedius cinctus* (Paykull) 1 ex.; *Emplenota obscurella* Gravenhorst (as *Aleochara algarum* Fauvel) 10 exx. (Staphylinidae).

Systematic accounts of marine beetles are provided by Doyen (1976) and Moore & Legner (1976), and the ecology of some wrack species with respect to tidal zones was examined by Elliott *et al.* (1983).

Methods

Sampling of wrack banks was carried out between 1st June and 31st August 1995, at three sites on the north-east coast of England. From north to south these sites were: St Mary's Island (VC 67, NZ 349743), Whitburn (VC 66, NZ 409614) and Hartlepool (VC 66, NZ 530334). The sampling regime was not equally balanced between the three sites, with 250 samples taken at Whitburn, 82 at St Mary's Island and 6 at Hartlepool.

Samples of wrack material, from different levels in the wrack bank, were taken by cutting around a 1 litre container (9.5 x 9.5 cm open end, 12 cm deep) and quickly placing the sample into a plastic bag. Beetles were extracted from the wrack material by flotation: placing the sample in a bucket of concentrated saline solution and catching the beetles as they floated to the surface (Lavoie, 1985). Specimens were stored in 75% (methylated) ethanol, awaiting identification (by L.J.). Only adult beetles were identified.

Results and discussion

A total of 549 Coleoptera was taken, of which 349 were adults. One specimen comprised an unidentifiable elytron of a click beetle (Elateridae), the remaining 348 belonged to 10 species: Hydrophilidae - *Cercyon depressus*, *C. littoralis*; Staphylinidae - *Omalium laeviusculum* Gyllenhal, *Cafius xantholoma*, *Heterota plumbea*, *Atheta (Philhygra) palustris* (Kiesenwetter), *Emplenota obscurella*; Chrysomelidae - *Longitarsus luridus* (Scopoli), *Chaetocnema concinna* (Marsham); Curculionidae - *Sitona lineatus* (Linnaeus) (see Table 1).

Reflecting the very specialised nature of the habitat, the fauna was dominated by a very small number of species, and the pattern of species abundance does not approximate to the usual logarithmic series. The three abundant species were *Cercyon depressus*, *Cafius xantholoma* and *Emplenota obscurella*. Twenty specimens of *Cercyon littoralis* were taken and the remaining six species occurred as doubletons or singletons.

Table 1: Total number of adult beetles captured at each site in samples from the surface and middle layers of wrack beds

	Whitburn	*St Mary's Is.*	*Hartlepool*
No. of samples	166	56	6
Cercyon depressus	73	-	-
Cercyon littoralis	12	3	5
Omalium laeviusculum	2	-	-
Cafius xantholoma	116	2	-
Emplenota obscurella	118	2	1
Heterota plumbea	1	-	-
Atheta palustris	-	-	1
Longitarsus luridus	1	-	-
Chaetocnema concinna	1	-	-
Sitona lineatus	1	-	-

Three species, *Longitarsus luridus*, *Chaetocnema concinna* and *Sitona lineatus*, all taken as singletons, are phytophages and are obviously alien to the wrack habitat. All three are very common, almost ubiquitous, in north-east England and had possibly strayed onto the shore from the well-vegetated cliff tops found at Whitburn. The other seven species found have all previously been noted as living in wrack beds.

Walsh (1991) described the first five species listed in Table 1 as seaweed specialists. Backlund (1945) recorded these five species plus *Atheta palustris* amongst the fauna of Scandinavian wrack beds. Egglishaw (1958) recorded three of these species, *Cafius xantholoma*, *Cercyon littoralis* and *Emplenota obscurella*, from both St Mary's Island and Whitburn and more recently Phillips & Arthur (1994) recorded the same three species from wrack beds at Seahouses, Northumberland.

Excluding the phytophagous leaf beetles and weevils, all of the beetles sampled exploit the wrack bank for food. *Cercyon* species feed on decaying wrack at least in the adult stage, although the larvae may be predatory. The staphylinids *Cafius*, *Atheta*, *Heterota* and *Omalium* are predators and *Emplenota obscurella*, the most common species in the faunal samples, is a parasitoid (Scott, 1920). The predatory and parasitoid species feed mainly on coelopid flies and their maggots.

There was a significant difference between the number of adult beetles captured at each depth in the wrack bank (Fig. 1; Kruskal-Wallace test, $H=44.0$ for 2 d.f., $P < 0.001$). The surface and middle layers contained on average more than 20 times the number of beetles found in samples from the deep layer. To remove bias from the data due to differences in the number of 'deep' samples collected at each site, Table 1 gives the number of beetles collected from the uppermost two layers only.

The bias in the distribution of the beetles to the surface and middle layers of the wrack is likely to be caused by two factors. The deep layer becomes very compressed as the bank ages which will tend to hinder the movement of beetles and other insects through the wrack. The anaerobic nature of this layer would also tend to prohibit access or at least restrict visits to short time periods. An important factor in the distribution of beetles within

the banks is the distribution of their prey, mainly dipteran larvae. Personal observations (by S.H.) indicate that dipteran larvae tend to feed predominantly in the middle layer and the reference by Phillips *et al.* (1995) to a 'larval feeding layer' at a depth of 9 cm tends to support the hypothesis that the beetles are occupying the same depths as their prey. A spatial association with dipteran larvae, albeit horizontally over the wrack bank, has previously been shown quantitatively for one of these species, *Cafius xantholoma* (Phillips & Arthur, 1994).

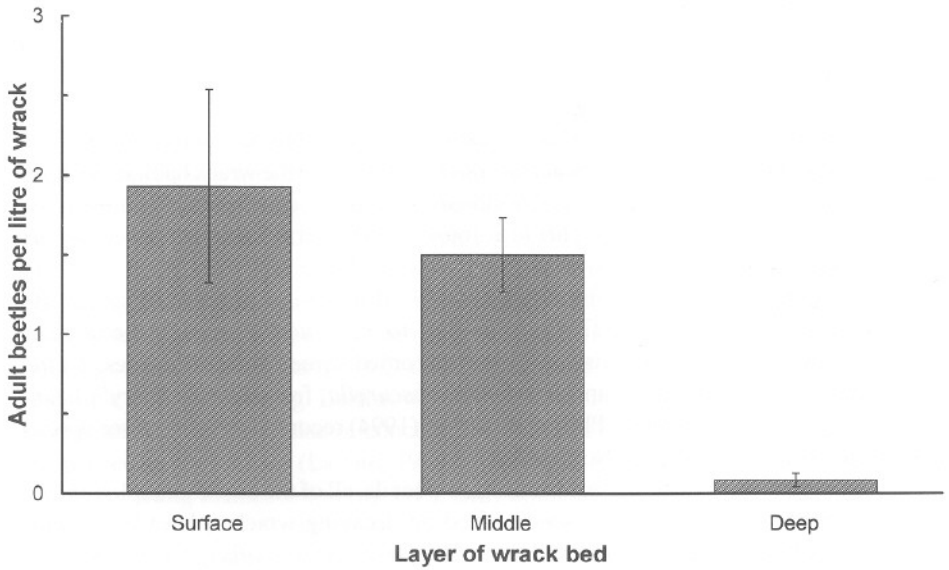

Fig. 1: Numbers of beetles at different depths in wrack bank

By far the richest and most abundant beetle fauna occurred at Whitburn. This is thought to be partly an artefact of the greater number of samples taken from this site. However, there was a significantly disproportionate number of beetles caught at Whitburn (and conversely a disproportionately small number of beetles caught at St Mary's Island) than if the beetles had been distributed randomly (for surface and middle layers; $\chi^2 = 95.1$ for 2 d.f., $P < 0.001$). This suggests a real difference in beetle densities between the sites. No obvious explanatory factors for this difference in beetle densities became apparent during the course of the investigation and this is an aspect of the system which requires further study.

The species found in the present samples differ slightly from those found by Egglishaw in the 1950s. Whereas Egglishaw found only *Cercyon littoralis*, *C. depressus* was the more common *Cercyon* species at Whitburn in 1995, although only *C. littoralis* occurred at Hartlepool and St Mary's Island. In addition, Egglishaw found *Omalium rivulare* commonly in all types of wrack accumulations: only one species of *Omalium* was found in 1995 and that was *O. laeviusculum*. *Cafius xantholoma* and *Emplenota obscurella* were both found in some numbers by Egglishaw and ourselves.

Of the seaweed specialists, two (*Cercyon littoralis* and *Cafius xantholoma*) are common, *Emplenota obscurella* and *Omalium laeviusculum* could probably be fairly described as 'local', and *Cercyon depressus* and *Heterota plumbea* are classified as 'Notable' by Hyman (1994).

The presence of *Heterota plumbea* on the north-east coast has in the past been open to doubt. Bold (1871) noted it as "Rare. Sea coast near Hartley". Hartley is about 1 km north of St Mary's Island (but it was not taken there in 1995). Fowler (1888) cast doubts on Bold's record, that persist to the present: "there is a record from Northumberland that requires confirmation" (Hyman, 1994). Generally, Bold was a very careful worker and Fowler's doubts about his identifications have in other instances proven to be unfounded. There are four specimens standing over *Heterota plumbea* in Bold's collection in the Hancock Museum (Newcastle), which have been checked by L.J.: all are correctly identified, but unfortunately they do not have locality data. The present sample shows that this species is present in north-east England, at least in vice-county 66.

Bold's records of *Cercyon depressus* were also queried by Fowler (1887) but this species has subsequently been recorded from north-east coasts.

There is ample scope for a wide range of simple experimental observations on Coleoptera living in seaweed. As these species occupy a relatively harsh environment, which is both ephemeral and unpredictable, work is required to examine the eco-physiological adaptations to such conditions and shed further light on what appear to be some complex life-history patterns.

Acknowledgement

This work was partly financed by Higher Education Funding Council monies designated to Professor Wallace Arthur, University of Sunderland.

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Lebia scapularis (Fourcroy) (Carabidae) in Britain

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Stephens (1827) states that Fabricius described *Lebia turcica* (now *L. scapularis*) in 1787 as a native of England from specimens in the collection of Dr Hunter. Six British specimens were known, all from Oakhampton Park, Somerset (near Wiveliscombe, ST 02/03), and four of these were presented to the British Museum collection by Dr Leach. Stephens quotes "the fate of the other two I have reasons to deplore"! Stephens (1839) also gives 'Zoological Gardens, Regent's Park'. Fowler (1887) repeats the Stephens record for Oakhampton Park stating that there were only four specimens.

The most recent record is for a single specimen taken by W.H. Bennett on 30th April 1883 from a birch *Betula* stump "in a clearing near Guestling" in East Sussex (Bennett, 1883). The Bennett collection was purchased by Hastings Museum in 1913 but since then it has been seriously attacked by museum beetle *Anthrenus* and a high proportion of the collection has been destroyed. What remains of Bennett's collection has been incorporated into the R.S. Mitford collection which is housed in a high quality thirty-drawer mahogany cabinet in the Museum. Miraculously the specimen of *L. scapularis* has survived and is in very good condition.

Acknowledgment

My thanks are due to Ms Victoria Williams, Curator of Hastings Museum, for allowing me to examine the Bennett and Mitford Coleoptera collections.

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Coleoptera recording schemes update

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Individual recording schemes have produced reports in this journal from time to time. This article aims to remind coleopterists about the operation of the beetle recording schemes in general, and bring them up to date with recent and current work and publications, as well as providing an updated list of recording scheme organisers. It also notes a few staff changes in the Biological Records Centre (BRC), and explains recent developments in the role of BRC, especially the uses of BRC data in research.

Submitting records to schemes

Most recorders send their records to scheme organisers on cards. The 'RA' series of cards, listing all or most of the British species in a family or group of families, is ideal for logging all the species found at a site on a particular date or over a period of time. The single-species GEN7 or GEN13 are more convenient for extracting data from collections, literature sources etc. which are arranged by species rather than by site. The GEN13 has an extra column for notes and comments, the GEN7 has more space for locality details. Supplies of cards, instructions on their completion, a full list of cards, and a synopsis of beetle recording cards and schemes, are available free of charge from BRC, at the above address.

Submitting computerised data on disk

Increasingly, coleopterists are computerising their own records, and many would prefer to supply records on disk rather than fill in record cards. BRC is pleased for this to happen, but advises recorders to contact the individual scheme organiser before sending disks or print-outs.

It is vital to make sure records on computer are fully checked, both for data entry errors and for taxonomic problems. Typing errors commonly occur during data entry, and many can be found only by careful proof-reading. Spellings of localities may need checking with reference to Ordnance Survey maps; this task is one which BRC undertakes before preparation of maps for atlases.

Identification problems arise with all groups of beetles, and computerised data are obviously no less prone to misidentification than records on cards. Problems are best solved by having doubtful specimens confirmed by a specialist. Many scheme organisers offer an identification service, or may be able to suggest competent people who will check specimens. Scheme organisers also assess the validity of incoming records, and may ask to see specimens in support of particularly unusual records, of rare species, or common species outside their known range or in unusual habitats. Such vetting is most effective if carried out soon after a record is made, when there is a better chance of the recorder remembering exactly where the specimen came from, and being certain there is less

likelihood of mis-labelling. So, there are advantages to passing records to scheme organisers regularly, perhaps on an annual basis. Some will prefer to receive print-outs of records, but others may rather receive data on disk. Once again, it is essential to contact the individual scheme organiser in advance.

Atlases in preparation

BRC has processed data for three beetle recording schemes for provisional atlases in the past few years, since Colin Johnson's (1993) atlas. Martin Luff's *Provisional Atlas of the ground beetles (Carabidae)* will go to press shortly, after several years of regrettable delays. Most of Keith Alexander's data for Cantharoidea and Buprestoidea have now been computerised and fully checked at BRC. It is hoped that a Provisional Atlas will be published late in 1996 or early in 1997. All available data for Cerambycidae to the end of September 1995 have now been computerised. Checking, validation and editing of the dataset is in progress, and draft text for an atlas has been prepared by Peter Twinn.

List of scheme organisers and addresses

Aquatic Coleoptera: Dr G. N. Foster, 3 Eglinton Terrace, Ayr KA7 1JJ

Atomariinae and Ptiliidae: Mr C. Johnson, Dept of Entomology, Manchester Museum, The University, Manchester M13 9PL

Cantharoidea and Buprestoidea (soldier beetles and jewel beetles): Dr K. N. A. Alexander, National Trust, 33 Sheep Street, Cirencester, Gloucestershire GL7 1RQ

Carabidae (ground beetles): Dr M. L. Luff, Close House Field Laboratory, Heddon-on-the-Wall, Newcastle upon Tyne NE15 0BS

Cerambycidae (longhorn beetles): Dr P. F. G. Twinn, Upper Woodlands, Llanover, Abergavenny, Gwent NP7 9EP

Chrysomelidae and Bruchidae (leaf beetles and pulse beetles): Dr M. L. Cox, International Institute of Entomology, c/o Entomology Dept, The Natural History Museum, Cromwell Road, London SW7 5BD

Cleroidea, Lymexyloidea and Heteromera (except Scraptiidae and Mordellidae): Dr R. S. Key, English Nature, Northminster House, Peterborough PE1 1UA

Coccinellidae (ladybirds): Dr M. E. N. Majerus, Dept of Genetics, Downing Street, Cambridge CB2 3EH

Curculionoidea (part, orthocerous weevils): Dr P. S. Hyman, Luton Museum, Wardown Park, Luton, Bedfordshire LU2 7HA

[*Dermestoidea and Bostrichoidea*: data are being collated by Mr B. Constantine, 4 The Green, Skipsea, East Yorkshire YO25 8SZ]

Elateroidea (click beetles): Mr H. Mendel, 22 Harvesters Way, Martlesham Heath, Ipswich IP5 7UR

Scarabaeoidea (dung beetles, chafers etc.): Mr D. J. Mann, c/o Zoology Dept, National Museum of Wales, Cathays Park, Cardiff CF1 3NP

Scolytidae and Platypodidae (bark beetles): Dr T. G. Winter, Entomology Branch, Forest Research Station, Alice Holt Lodge, Wrecclesham, Farnham, Surrey GU10 4LH

Staphylinidae (rove beetles): Mr P. M. Hammond, Dept of Entomology, The Natural History Museum, Cromwell Road, London SW7 5BD

Gaps in coverage by schemes

Since Tim Winter set up a scheme for the Scolytidae and Platypodidae (Winter, 1992), and Barry Constantine proposed a study group for Dermestoidea and Bostrichoidea (Constantine, 1994), two of the major gaps in the recording schemes have been filled. The largest remaining gap is the Curculionidae (gonatocerous weevils), interest in which will presumably grow considerably when the remaining parts of Prof. Morris's Royal Entomological Society Handbook are published. Otherwise, the Histeridae, several families of Staphylinoidea, most of the 'clavicorn' families apart from Coccinellidae and the Atomariinae, and about a dozen small (mostly fewer than 20 species) families, remain outside the current schemes. If anyone is interested in setting up a recording scheme for any of these families, Paul Harding would be pleased to discuss the practicalities.

Changes at the Biological Records Centre

Correspondents may have noticed a range of new acronyms on BRC notepaper; these do not represent a name change, merely denoting a new place in the hierarchy of the Natural Environment Research Council (NERC), of which the Institute of Terrestrial Ecology (ITE) is a component body. Since 1990, BRC has been part of the Environmental Information Centre (EIC) at ITE Monks Wood, which brings together the databasing, remote sensing (satellite imagery etc.) and Geographic Information Systems work of the Institute. Within EIC, BRC is now the major part of the Biological Databases Section (BDS), which also includes the Butterfly Monitoring Scheme and a range of international database projects.

Paul Harding is the head of BRC and BDS, and senior co-ordinator of zoological recording. Brian Eversham is research co-ordinator in BRC (a post which has developed since 1989, reflecting the growing use of BRC data in research - see below), and helps with the invertebrate schemes. Henry Arnold has been database manager in BRC since March 1995, as well as continuing his previous role in charge of reptile, amphibian and mammal recording schemes. Nick Greatorex-Davies, who organises the Butterfly Monitoring Scheme, has recently become involved in BRC invertebrate recording.

Programme of data processing and publications

The databasing activities of BRC are a joint responsibility of the statutory conservation agencies and NERC, and the work reflects this balance. Its core activities of data gathering, databasing and publication of atlases of species distribution are jointly funded through a contract managed by the Joint Nature Conservation Committee (JNCC). Data priorities are drawn up annually in consultation with JNCC, the country agencies (English Nature, Scottish Natural Heritage, Countryside Council for Wales) and the Department of the Environment for Northern Ireland. In any one year, resources may allow BRC to work on data from perhaps two or three large schemes, and three or four smaller datasets, out of a total of around 60 active schemes. Some particularly popular schemes, such as the flowering plants, the vertebrates, the butterflies and the dragonflies, occupy a significant

proportion of BRC staff time every year. This prioritisation of work on popular groups reflects the importance of these groups in nature conservation.

Research applications of BRC data

Thanks to the skill and dedication of largely amateur recorders, the quality, detail and extent of species distribution data available in Britain is unrivalled elsewhere in the world (Lawton *et al.*, 1994). Collecting and collating data at BRC can only be justified if the data are put to use. The conservation agencies draw on the BRC databases when drafting or revising Red Data Books (e.g. Shirt, 1987), national reviews (e.g. Hyman 1992, 1994), and in other forms of advice, for example in developing lists for the Biodiversity Action Plan, and for individual site defence. Beyond these conservation applications, subsets of BRC data have always been made available to *bona fide* researchers, such as university ecologists, and in recent years BRC has also undertaken a programme of research into biogeography in Britain. Some early results of this were presented at a conference celebrating BRC's 25th anniversary in 1990 (Harding, 1992), and a review appeared in the ITE annual report for 1992 (Eversham, 1993).

Research commissioned by government agencies such as the Department of the Environment, Ministry of Agriculture, Fisheries and Food, English Nature and Scottish Natural Heritage, also make use of BRC data and personnel. Recent work of this type has included:

* predicting the impacts of climate change on ecosystems and on rare species (e.g. Watt *et al.*, 1990; Elmes & Free, 1994)
* setting priorities for long-term environmental set-aside (e.g. Firbank *et al.*, 1993, 1994)
* a review of 'corridors' for species dispersal in response to climate change (Hill *et al.*, 1994)
* a biogeographic classification for Scotland (Carey *et al.*, 1995)
* definition of key indicators and summary statistics on the state of British wildlife (for Department of the Environment)
* development of a Comparative Environmental Index (for H.M. Inspectorate of Pollution)

Biodiversity research results

Eversham *et al.* (1993) review the potential research applications of BRC data with particular reference to invertebrates. The following summary illustrates some of the important conclusions of recent research. This would have been impossible without the supply of accurate records by amateur naturalists.

One of the first topics to be examined was *biodiversity hotspots* (here defined as the top 5% of 10 km squares for species-richness of a taxonomic group), partly because they are a focus for international conservation research at present; but diversity is also a very important criterion for conservation evaluation within the UK. Hotspots for different

groups of organisms do not always coincide; the pattern of overlap between groups is hard to explain, but is not simply due to overlap of recorders (Prendergast *et al.*, 1993a), e.g. terrestrial and aquatic mollusc hotspots are poorly correlated. 'Flagship' taxa, such as birds or butterflies, fare no better than others in highlighting hotspots for a wider range of groups (Prendergast *et al.*, 1993b). No single 'indicator species' can diagnose hotspots, but some combinations of two or three species are more effective. At present, 'hotspot indicators' can be identified only *post hoc*, using large datasets, but there may be short-cuts through characterising indicators in other ways. There is also some evidence that hotspots change over time, and that in southern England especially, former hotspots have been lost through land use change and development (Prendergast & Eversham, 1995).

Rare species are often absent from diversity hotspots. These are of two kinds: the very rarest species, and those whose geographic distribution is confined to the low end of the national diversity gradient for the group (e.g. rare northern dragonflies, most hotspots being in the south). The detail varies between groups (Prendergast *et al.*, 1993b).

Methods of measuring range size: there are strong correlations between all measures of range size. In particular, 100 km square counts and vice-county counts relate well with 10 km counts. Partial sampling (mimicking the early stages of a recording scheme, when few records are available) showed similar results. Ranking species by status (e.g. the rarest 10% of species) produced almost identical answers by most methods (Gaston *et al.*, in press; Quinn *et al.*, in press). This suggests that status categories (Red Data Book, Nationally Notable, etc) can thus be considered equivalent between groups. A wide range of groups may therefore be used with confidence in site evaluation, and there is no justification for invertebrates to be neglected.

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Calathus cinctus Motschulsky (Carabidae) in south-east Scotland

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Blake (1995) recently published the first record of this species from Scotland. She had several specimens in pitfall traps in south-west Scotland.

On 11.x.1995 I took a male *C. cinctus* under a stone in an old limestone quarry very close to the sea near Barns Ness, East Lothian (VC 82, NT 718773). This is a predominantly sandy stretch of coast with scattered outcrops of rock.

Reference

BLAKE, S. 1995. *Calathus cinctus* Motschulsky (Col., Carabidae) in Kirkcudbrightshire. *Entomologist's Mon. Mag.* **131**: 258.

Hydrochara caraboides (Linnaeus) (Hydrophilidae) in Cheshire

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During the early summer of 1995, *H. caraboides* was twice netted in field ponds in Cheshire during invertebrate sampling activities. The first record, on May 23rd, was of a single adult beetle in a former marl-pit to the east of Chester. This pond lies adjacent to an agriculturally unimproved meadow and is surrounded by a wide, floating fringe of Bogbean *Menyanthes trifoliata*, Branched Bur-reed *Sparganium erectum* and Yellow Flag *Iris pseudacorus*. The beetle was netted from amongst the Bogbean. It was photographed by Mike Dix and returned to the pond. [Photographs were sent to Dr Garth Foster for verification.]

On June 5th 1995, during a survey of 250 ponds in north-western England for The Pond*Life* Project (Liverpool John Moores University), a single adult was netted in a marl-pit pond west of Winsford. The insect was shown to S. Clarke and T. Whittaker then released. This pond is largely shaded by Sallow *Salix cinerea* scrub but with floating mats of fen vegetation in more open areas. Bogbean was again present, along with Lesser Water-parsnip *Berula erecta*, Bottle Sedge *Carex rostrata*, Marsh Pennywort *Hydrocotyle vulgaris* and Great Spearwort *Ranunculus lingua*. The pond lies within a farm where fertiliser inputs are very low. It is surrounded by sheep-grazed, permanent, semi-improved pasture.

H. caraboides is a Red Data Book category 1 ('Endangered') species and believed to be restricted as a British breeder to the Somerset Levels. There is one other recent record from Cheshire (Biggs *et al.*, 1991). This small cluster of records suggests that a small population may be resident in the county. This improves the species' prospects only slightly, for hypertrophication of ponds through agricultural fertiliser run-off is very general in this intensive dairying area. Bogbean is considered to be a good indicator of unpolluted, mesotrophic ponds here. *H. caraboides* favours ponds with long-established vegetation, but floating mats of fen plants are still being torn from ponds in the name of conservation. Intended dredging of the second pond was averted only by this chance discovery and the exceptional enthusiasm of the farmer. There is an urgent need to identify ponds in the region with suitable vegetation for *H. caraboides* and to search these for breeding populations.

Reference

BIGGS, J., LANGLEY, J., WALKER, D., WHITFIELD, M. & WILLIAMS, P. 1991. *Hydrochara caraboides* from Cheshire. *Balfour-Browne Club Newsl.* **49**: 15.

Malachius viridis Fabricius (Melyridae) breeding in stem of Wild Cabbage

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Having read R.C. Welch's interesting article on finding *Caulotrupodes aeneopiceus* (Boheman) (Curculionidae) and *Anobium punctatum* (Degeer) (Anobiidae) in old woody stems of Wild Cabbage *Brassica oleracea* Linnaeus below Shakespeare Cliff, Kent (Welch, 1989), I took the opportunity of a recent visit to Purbeck, Dorset, to examine the contents of dead cabbage stems myself. My only find was of a single beetle pupa lying within the pith deep inside one stem. This subsequently proved to be of *Malachius viridis*. The locality was near Ballard Point (SZ 049815), the date 20.v.1995. This beetle has been assumed to breed in plant stems but this is the first actual record to my knowledge.

Reference

WELCH, R.C. 1989. Wild cabbage, *Brassica oleracea* L., a new host for two species of wood-boring Coleoptera. *Entomologist's Rec. J. Var.* **101**: 15-16.

The durability of laser printer and photocopier toners for data labels

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For over ten years I have been using a personal computer to generate rapidly large numbers of data, determination and cabinet labels. These are easily generated either from a word processor, spreadsheet or database. Originally I printed these on a dot-matrix printer, the ink of which is quick to fade in ordinary light and reacts to organic fumigants, such as naphthalene and paradichlorobenzene, by slowly diffusing into the surrounding paper and making an unreadable smear. I copied the dot-matrix output using a normal photocopier, achieving a much smaller and clearer print size by using the reduction facility of the copier and now produce them on a laser printer which has the advantage of producing very small print sizes and which uses the same technology as the photocopier, including the same resin-based toner.

I was concerned as to the long-term stability of the labels, not wishing to render my reference collection useless to others in a century's time by the fading of the data labels. Indian ink and pencil labels are more or less eternal, while ballpoint pen ink, which I have seen used by some entomologists, fades rapidly in ordinary light and can be affected by organic fumigants.

Ten years ago, I carried out various tests on photocopy generated labels to test their stability, and have repeated these tests in the last two years with laser-printed labels.

For stability with respect to light through glass, I set a sheet of labels up against the south facing window of a sunny greenhouse. Both laser and photocopy toner showed no sign of fading after two years, after which the humidity in the greenhouse had caused the paper to rot. This experiment did not test durability with respect to ultra-violet light, most of which is filtered out by ordinary glass, but it is unlikely that the labels of specimens in a collection are ever going to be exposed to very much ultra-violet light.

Testing for stability against fumigants and preservatives, I have kept photocopied and laser printed labels in the containers in which I store dichlorvos (chopped up commercial strip fly killers such as Vapona, as well as naphthalene, paradichlorobenzene and camphor, separately and in combination, all with no effect after at least two years (laser printed) and ten years (photocopied).

Organic solvents, such as ethyl acetate (ethyl ethanoate), benzene, toluene and carbon tetrachloride (tetrachloromethane), are sometimes used as fumigants, small quantities either being poured onto the bottom of the store-box or drawer, soaked onto some absorbant material or placed in a small container. Soaking photocopied or laser-printed labels with any of these solvents, or exposing the labels to their vapour for a period of several months, led to the resin of the toner dissolving, resulting in one of two types of reaction. Older photocopiers (ten and more years ago) used a dye-based toner. These dyes diffused out to form a lurid chromatographic effect, revealing a mixture of green, purple and yellow dyes, eventually leaving a totally illegible label. Modern toners use a particulate pigment, possibly carbon and, when exposing these to all of the above solvents, there initially appeared to be no effect, the writing remaining readable and apparently untouched. The resin base, however, totally dissolved away, even when only exposed to vapour (the resin presumably being absorbed into the paper) leaving the writing susceptible to the slightest touch and could even be blown off the paper.

Use of these organic solvents as pesticides or fumigants is, however, potentially dangerous as the vapour is highly inflammable or even explosive and, in some cases, toxic or carcinogenic. It is also technically illegal as they are not registered for this use under the COSSH regulations. Therefore it is hoped that no-one will continue to use them as fumigants. However, to be on the safe side, I have placed a label prominently inside and on the outside of each drawer and storebox stating "Resin based toner used for labelling - do not use organic liquid solvents for fumigation".

I have also tested the resin-based inks against various alcohols (absolute ethanol, propanol and methylated spirits at full strength and diluted to 70% with water), ethylene glycol (antifreeze) and glacial acetic (ethanoic) acid, all of which may be used as in wet preservatives. The ink has remained unaffected for at least ten years for methylated spirits and two years for the others.

Very old (early 1970s) photocopiers used a wet, solvent-based method which produced the whole image, both black and white, as a layer on the surface of the paper. These are easily recognised as a shiny, but chalky layer, usually with poor contrast. These earlier photocopy surfaces degenerate badly with time, the 'chalk' actually flaking off the surface of the paper and in extreme cases can easily be blown off. I have seen at least one collection where the species labels have been photocopied in this way from the checklist and where the only reason that the labels remained legible was that the drawers had not been opened for many years. I strongly recommend that if anyone has labels using this older technology, that they carefully replace them with modern material.

Of course the one factor that cannot be tested against is the effect of time - how stable are these resin-based inks after 50 or 100 years? Given the results from my experimentation, I have hazarded that they probably are stable, or at least as stable as the paper that they are printed on, and I now produce such labels for all my specimens. I hope I am right...

The Dune Tiger Beetle *Cicindela maritima* Latreille & Dejean (Carabidae) on the north Norfolk coast

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On a holiday in north Norfolk in late July 1995, Mr Graham Guest from Barnsley noticed a number of tiger beetles on bare sand in a dune slack open to the beach at Thornham Point (TF 7345). He communicated this to Mr David Hemingway of Wakefield who deduced that these might be the Dune Tiger Beetle *Cicindela maritima* Latreille & Dejean and that, if this was correct, then this would be a most significant record. David telephoned me and I was able to visit the site on the evening of 7th August and confirm that the species was indeed *C. maritima*. I found approximately half a dozen individuals on bare sand at the margin between a marram *Ammophila* dominated low dune and the sea lavender *Limonium* dominated vegetation of a small, sheltered dune slack at TF 739451. The dune slack was open to the flats of bare silty sand at the margin of Harbour Channel, the typical intertidal hunting ground of this species, but no individuals were found on these flats, despite it being low tide.

An additional find of interest at the same site was of *Perapion limonii* (Kirby, W.) (Apionidae) abundant on the sea lavender in the slack and in the saltmarshes east to the Royal Society for the Protection of Birds reserve at Titchwell.

This would appear to be the first record of *C. maritima* in East Anglia since 1952, when the species was found by Mr Harry Henson of Peterborough between Burnham Overy Staithe and Holkham Meals, about 15 km east of the current site, on 23rd August, when it was found to be abundant. *C. maritima* has not been seen since then, and was thought to have been exterminated from East Anglia by the 1953 floods, which inundated and eroded its habitat as an overwintering larva.

Acknowledgements

I am grateful to Graham Guest and David Hemingway for communicating their find to me and to Martin Collier and Harry Henson for informing me of earlier records.

Stenolophus skrimshiranus Stephens and *Badister unipustulatus* Bonelli (Carabidae) in South Lincolnshire

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On 2nd May 1994, while clearing soil and vegetation from a punctured artificial pond in my garden at Crowland in South Lincolnshire (TF 239093), I came across a number of carabids clustered together between the polythene pond liner and the wet clay in which pond plants were growing. There were about half a dozen specimens of *Stenolophus mixtus* (Herbst), together with a single specimen of *S. skrimshiranus* Stephens.

This is only the third record of this scarce species in the county since 1860, when E.C. Rye found the species "near Boston" on 9th April in a habitat that he described as similar fen country to that at Battersea (Rye, 1860)! The only other record is from 'South Lincolnshire' by W.K. Bissell in 1858 (Bissell, 1858). There would also appear to be no records from north of the Thames Marshes since 1970, apart from Woodwalton Fen (Hyman, 1992).

I have recorded a number of other wetland species of note in and around my garden pond over the last few years, including *Chlaenius vestitus* (Paykull) (Carabidae) in 1988, *Ilybius fenestratus* (Fabricius) (Dytiscidae) in 1995, *Enochrus melanocephalus* (Olivier) (Hydrophilidae) in 1990, *Platystethus nodifrons* (Mannerheim) (Staphylinidae) in 1995, *Anthocomus rufus* (Herbst) (Melyridae) in 1990, *Donacia versicolorea* (Brahm) in every year since 1989 and *Prasocuris junci* (Brahm) (both Chrysomelidae) in 1990, and *Bagous limosus* (Gyllenhal), *Hydronomus alismatis* (Marsham) and *Poophagus sisymbrii* (Fabricius) (all Curculionidae) in 1990.

The land around my garden, known as Crowland Alderlands, is typical peaty fenland arable land, with large fields separated by grassy ditches which are usually dry for most of the summer and in which marshland plants such as Water-plantain *Alisma plantago-aquatica*, Bur-reed *Sparganium erectum* and various pondweeds *Potamogeton* are occasionally found. Searching and pitfall trapping in the ditches within 0.5 km of the garden revealed only *Donacia versicolorea* of the species noted above, although *Stenolophus mixtus* was common and some of the other species occur in larger drains a few kilometres away.

I did, however, find two specimens of *Badister unipustulatus* Bonelli on 19th August 1995, a species otherwise known in Lincolnshire from only three records. These were both found together with *S. skrimshiranus* by Bissell and Rye (*op. cit.*) in 1858 and 1860. I found it at Taumberland (TF 260388) on 28th August 1989, in an arable field ditch similar to the ones near my house.

Acknowledgement

I am grateful to Dr Martin Luff for confirmation of the identification of *S. skrimshiranus*.

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Atheta (Pachyatheta) mortuorum Thomson (Staphylinidae) in East Sussex

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Fowler (1888) records *Atheta mortuorum* on the strength of specimens taken by Dr Power from Shirley, Esher, Birch Wood, Highgate and Littlington (Litlington, East Sussex?), adding "I do not feel sure that they all belong to this species". Fowler also adds 'Scotland, rare, Tay, Dee, and Solway districts'.

Early British specimens of *A. mortuorum* have all proved to be *Atheta (Microdota) atricolor* (Sharp) and it was not until B.S. Williams discovered the true *A. mortuorum* in Hertfordshire in 1930 that its presence in England could be confirmed. Williams (1931) records that he took two females of *A. mortuorum* (recorded as *Atheta nessingli* Bernhauer) near St. Albans, Hertfordshire, on 25th June 1930, captured using a butterfly net tied to the handlebars of his bicycle (Williams, 1930). However, his diary entry only refers to one specimen and presumably this is the dissected female labelled 'St. Albans, B.S.W., 25.6.1930' and '*nessingli* det. Bernhaver', in the Williams collection at Liverpool Museum.

Mr A.A. Allen is aware of the existence of two British examples of *A. mortuorum*, both of which originally belonged to P. Harwood, whose collection is now in the Hope Entomological collections at Oxford University Museum. Williams evidently gave at least one specimen to Harwood but, in a recent search of the Staphylinidae collection at Oxford, no examples of *A. mortuorum* could be found. A British specimen may be in the A. Strand collection at Oslo because Strand noted in a letter to Mr Allen many years ago that he possessed a Harwood specimen of *A. mortuorum* but no more information is available. Further research is needed before the number of specimens and their whereabouts can be confirmed.

In early May 1980 a pile of mouldy grass cuttings was placed under a hawthorn *Crataegus* bush in a sheltered corner of a sandy field grazed by horses at Hale Green near Chiddingly, East Sussex (TQ 552142). The grass cuttings were sieved on 15th May 1980 and a selection of small beetles was taken home for close examination. Amongst many small Staphylinidae was a single female *A. mortuorum*. This is evidently the first British record since Williams discovered the species in Hertfordshire in 1930.

Acknowledgements

I thank Mr Peter M. Hammond of the Natural History Museum (London) for confirming my identification, Dr Ian D. Wallace for information relating to the Williams collection at Liverpool Museum, Mr Anthony A. Allen for his help regarding the probable location of the second Williams specimen of *A. mortuorum*, and Dr Chris O'Toole for searching through the *Atheta* section in the Hope Entomological Collections.

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A second site for *Rhynchaenus calceatus* (Germar) (Curculionidae) in Co. Offaly, Ireland

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Whilst on holiday in Ireland, a visit to All Saints Bog near Birr, Co. Offaly (N 0210) was planned on 18th May 1995, in order to study the recently discovered colony of *R. calceatus* (Mendel, 1994). Approximately 3 km west of Killyon, on the north side of the road from Kinnitty to Birr (numbered R440, formerly L116) I stopped at Killaun Bog (N 1005) and by beating young birch *Betula* trees *R. calceatus* was discovered almost immediately. The bog is situated about 10 km south-east of All Saints Bog, suggesting that perhaps the weevil may occur wherever there is suitable habitat in this part of Ireland.

Killaun Bog Community Education Reserve is managed by St Brendan's Community School, Birr. It is a very wet *Sphagnum* bog and is best entered using the specially constructed cat-walk which crosses the centre of the reserve. There are numerous young birch trees which may be periodically thinned in order to conserve the open bogland habitat in the centre of the site. I have written to the Science Department of the School, explaining that there is a very rare beetle breeding on the young birch trees growing in the bog and that at least some should be left intact, although it is not desirable to allow large trees to develop.

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Ischnomera cinerascens (Pandellé) (Oedemeridae) in Oxfordshire

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During 1993 and 1994 I was fortunate enough to make several visits to Cornbury Park to survey the invertebrates of an area of ancient hawthorn *Crataegus* woodland. Cornbury Park is a deer park adjoining Wychwood Forest, near the town of Charlbury in west Oxfordshire.

The area of ancient hawthorns is about 1 ha in extent. There are a few oak *Quercus* standards and a fairly dense ground cover of Bracken *Pteridium aquilinum* by late summer. The hawthorns are dominant; all are ancient, with some standing dead. There is quite a number of fallen and rotting trunks up to about 1 ft in diameter. The canopy is open, with large spaces between some trees. Most of the hawthorns have a luxuriant lichen cover. Due to the pressure of browsing by the herd of Fallow Deer *Cervus dama*, there are no young hawthorns. The nearby parkland is mostly short grass with a variety of standard trees, especially oak and lime *Tilia*.

Most of the collecting was by beating the hawthorns. On 1st June 1994 single specimens of *Ischnomera cinerascens* (Pandellé), rated RDB2, and *I. cyanea* (Fabricius), Nb, were collected. On 11th May 1993, two specimens of *Ampedus elongantulus* (Fabricius) (Elateridae), Na, were found. It is probable that the larvae of all three species are associated with the rotting hawthorn trunks.

An additional species of RDB3 status from the hawthorns is the heteropteran *Empicoris baeransprungi* (Dolm) (Reduviidae), collected on 28th June 1994.

Acknowledgements

Thanks are due to Howard Mendel for identifying all of the beetles, and to the Hon. Robin Cayzer for permission to visit and collect in Cornbury Park.

Dryophilus anobioides Chevrolat (Anobiidae) and *Cryptolestes spartii* (Curtis) (Cucujidae) in Surrey

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According to Hyman (1992), *Dryophilus anobioides* has only been recorded from two vice-counties (East Kent and West Suffolk) since 1970 and is currently listed as Rare (RDB3). It was recorded from Surrey before 1970 and I am pleased to report a recent capture in the county.

I beat a pair *in copula* from a dead broom *Cytisus* bush at Crooksbury Common (SU 8945) on 13th May 1995. The pair are dimorphic, the male being smaller (2.1 mm) and generally reddish with scanter pubescence, possibly in part due to rubbing, the female larger (2.7 mm) with dense silvery-grey adpressed pubescence. The characteristic white scutellum is obvious in both specimens.

I also beat several specimens of the Notable A cucujid *Cryptolestes spartii* from broom at Crooksbury, and nearby at Thundry Meadows Local Nature Reserve (SU 895443) on 18th September 1995. This species is rare in Surrey, with only one other modern record according to Hyman (1994).

Both sites support rich assemblages of beetles associated with broom *Cytisus*. The following species were recorded at both sites in 1995: *Bruchidius villosus* (Fabricius) (Bruchidae); *Phytodecta olivacea* (Forster) (Chrysomelidae); *Apion atratulum* Germar, *A. immune* Kirby, *A. fuscirostre* (Fabricius) (Apionidae); *Sitona regensteinensis* (Herbst) (Curculionidae); *Hylastinus obscurus* (Marsham) and *Phloeophthorus rhododactylus* (Marsham) (Scolytidae). The generalist bark beetles *Vincenzellus ruficollis* (Panzer) and *Rhinosimus planirostris* (Fabricius) (Salpingidae) were also abundant on broom. Other beetles beaten from broom at Crooksbury on 18th September 1995 included *Dromius linearis* (Olivier), *D. melanocephalus* Dejean (Carabidae), *Strophosoma melanogrammum* (Forster) (Curculionidae) and most surprisingly *Notoxus monoceros* (Linnaeus) (Anthicidae).

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Prionus coriarius (Linnaeus) (Cerambycidae) attacked by *Formica rufa* (Linnaeus) (Hymenoptera: Formicidae)

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On 26th July 1993 whilst recording insects at Sparite Common near Parham, West Sussex (TQ 061152), my companion Mike Edwards discovered a specimen of the longhorn beetle *Prionus coriarius* under fierce attack from an army of about 20 wood ants *Formica rufa*. They were dragging it, still alive, presumably in the direction of their nest. Once the beetle had been disentangled from the mass of attacking ants it seemed none the worse for its experience and appeared in perfect condition.

How far the ants had intended to drag this large and heavy insect is not known but it is surprising that they were willing to tackle a creature so much larger than themselves.

Polydrusus chrysomela (Olivier) not a British species (Curculionidae)

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In their admirable recent account of Coleoptera not included in Joy (1932), Hodge & Jones (1995) state of *Polydrusus pulchellus* Stephens and *P. chrysomela* (Olivier) "the two species are still treated as one by some authors". It is quite true that both *P. pulchellus* and *P. chrysomela* are good species, but only the former is British. Much of the confusion leading to the conclusion that two species inhabited the British Isles was due to Blair and his Dutch correspondent Uyttenboogaart (Blair, 1936). The position was not helped by the inclusion of *P. salsicola* Fairmaire in *Eusomus* Germar (e.g. Hoffmann, 1950), or the recognition of a 'var. *insquamosus* Everts' of *P. salsicola* (Blair, 1936).

The most recent revision of this group of species is by Roudier (1963), accepted by continental authorities including, *inter alia*, Tempère & Péricart (1989), Dieckmann (1980) and Smrecynski (*sic*) (1981). Roudier established that *P. chrysomela* is a southern European species, so far found only in Portugal. Records of '*P. chrysomela*' from north-west Europe (Atlantic coasts from France to Denmark) refer to *P. pulchellus*. Roudier discussed the question of 'var. *insquamosus*' and variation generally in *P. pulchellus*, concluding that the species was variable in the development of the elytral scales and that varietal names had little value. According to Dieckmann (1980), Mr R.T. Thompson checked the identity of the Stephensian type (a male) of *P. pulchellus*.

Roudier distinguished four 'subspecies' of *P. pulchellus*, two of which he described himself, but only *P. pulchellus pulchellus* has been found in north-west Europe. The other three subspecies are all Mediterranean.

The inclusion of *pulchellus* (as *salsicola* (key) and *salcicola* (species account)) in *Eusomus* by Hoffmann (1950) was probably based on the shape of the elytra, the main external feature indicating that the species has no functional wings; species of *Eusomus* are also flightless (Dieckmann, 1980). The point was briefly discussed by Blair (1936).

The synonymy of the two species of 'saltmarsh *Polydrusus*' relevant to the British Isles is as follows:

Polydrusus Germar, 1817
chrysomela (Olivier, 1807) [not British]
pulchellus Stephens, 1831
= *chrysomela* auctt. non (Olivier, 1807)
= *salsicola* Fairmaire, 1852
= *salcicola* Hustache, 1925 [misspelling]
= *insquamosus* Everts, 1921

There is no doubt that Roudier's careful study must be accepted unless and until a further detailed revision of the group is undertaken. We have just the one 'saltmarsh *Polydrusus*' in the British Isles, a point I made previously with reference to Ireland (Morris, 1993). Presumably *P. pulchellus* cannot now be classified as 'Nationally Notable B' (Hyman, 1992) though I regard it as at least as worthy of that status as *P. confluens* Stephens.

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Letters

Mini-interception nets

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For some years I have been supplying a standard size flight interception net, sized 8 ft long and about 3 ft 6 in high. Feedback of information suggests that a useful range of Coleoptera and Diptera is collected including a number of species otherwise not frequently gathered in.

However an Australian customer tells me that by using a mini-interception net, 1 m long and 0.5 m high, placed in the airspace underneath bushes, another range of species has been collected. In particular considerable numbers of Pselaphidae have been taken. I am sure that this airspace is one that has received little attention, and I don't know whether or not Australian pselaphids behave differently from British pselaphids but it does seem to me that the matter deserves attention.

On the use of the diaeresis in zoological nomenclature

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I have noticed that some authors, in other works, are continuing to use the diaeresis when spelling the genus name *Meloe* Linnaeus, which then appears as either *Meloë* or *Melöe* (although only the former is correct), in order to indicate that both vowels should be pronounced separately. Such usage is both traditional and defensible.

I would merely point out that - quite apart from the headache such spelling causes for typists or compositors - the use of the diaeresis is expressly forbidden by the *International Code of Zoological Nomenclature* (Third Edition, 1985). This states that in the formation and treatment of names "no diacritic mark, apostrophe, or diaeresis is to be used in a scientific name regulated by the Code" (Article 27) and moreover that names originally spelt with such marks must be corrected (Article 32), i.e. the diaeresis should be omitted. Since this actually means less rather than more work for authors and editors, with negligible loss of sense for the reader, I would strongly recommend that the rule is adopted by entomologists generally.

Review

New British Beetles: species not in Joy's practical handbook by P.J. Hodge & R.A. Jones. Reading: British Entomological and Natural History Society. 1995. 175 pp. Paperback: ISBN 1-899935-01-0, price £18. Hardback: ISBN 1-899935-00-2, price £24.

It cannot be denied that recent identification guides to several insect groups such as dragonflies and hoverflies have succeeded in appealing to a wide market and created an explosion of interest and activity in those groups. By contrast, the lack of identification books on beetles is a major obstacle to those wishing to take up their study. The most recent comprehensive identification guide to British beetles is Joy's *Practical Handbook* published in 1932 and, although it has been reprinted in facsimile by E.W. Classey (also now out of print), it has not been revised since. The stated aim of the book under review is *to use Joy's handbook as a base upon which beetle identification can begin, and to give details of where further help in identifying particular species, genera and families can be found in the published literature over the ensuing 63 years.* The authors have conducted a great deal of laborious, painstaking and exhaustive research into the British and continental literature over many years and they have succeeded admirably in their aim.

The main section of the book is arranged by family and lists species not included in Joy together with a list of references dealing with their identification and localities. Each family is given a short paragraph summarising Joy's treatment of the family, describing further taxonomic developments and recommending more up to date publications. Sometimes generic revisions are listed under family and sometimes under genus. Each new species is given a brief description which often includes names of similar species, important characters for identification and British distribution. The descriptions vary in the amount of detail but in most cases they are probably sufficient to decide whether to chase up references in order to help identify a particular problem specimen. The lists of references are substantial. Each reference is annotated briefly to indicate their content. Most species entries contain references which contain keys, figures or descriptions, although I noticed that this is not the case for *Ochthephilus andalusiacus* (Fagel) and *O. venustulus* (Rosenhauer). The format of this section is most agreeable and allows quick and effective access to information and references. There is also a guide to different ways in which the section can be used, emphasising the practical nature of the book. There is a full taxonomic index.

For most readers the main section is easy to use. Nevertheless, there are two features which may cause difficulties to beginners. Firstly, the nomenclature used is more or less in accordance with modern usage. Consequently, many of the old generic names in Joy do not match the names used in this book, although synonyms are given in the text. Here the index is useful because it includes Joy's names. Secondly, the order and taxonomic limits of families are different from Joy. Once again, the index comes to the rescue, but to fnd your way around this book it helps to be familiar with the modern checklist and arrangement of families. In my view any disadvantages of these features are outweighed by the advantages of being up to date.

Unfortunately, some names are more up to date than others. For example, the book uses modern family names in the Curculionoidea whereas family divisions in the Hydrophiloidea are ignored, even though they have been used in Britain for a longer period. It also uses several names current in Europe (e.g. *Anoplodera* in the Cerambycidae) but ignores others (e.g. retaining *Acrotona* as a subgenus of *Atheta* in the Staphylinidae). However, these issues are difficult to judge in the absence of an authoritative recent British checklist and they do not overduly detract from the usefulness of the book.

The introductory sections include useful brief guides to checklists, recent books and journals relevant to the British fauna. It is a pity that works dealing with life histories, habitat

preferences and other ecological matters are not included in the introduction. Apart from host plant preferences, these aspects are rarely covered adequately by British authors and the information contained in works such as those by Horion *Faunistik der mitteleuropäischen Käfer*, Koch *Die Käfer Mitteleuropas - Ökologie* and Lindroth *Ground Beetles of Fennoscandia - a zoogeographic study* (now available in English) would be of benefit to many British coleopterists. I am also puzzled by the lack of any mention of the excellent *Fauna d'Italia* series.

A further omission is the lack of any guidance on the use of reference collections as an aid to identification, a fault shared by many identification guides. Many beginners and students in academic institutions commonly misidentify specimens because they rely solely on keys. A list of museums whose collections contain species added since Joy would have been useful.

I have been told that there are several typographic errors, but I have seen none that would cause confusion. Peter Hodge is compiling a list of such errors for correction in a future edition and would welcome any being brought to his attention.

Beetles are valuable objects of study for nature conservation, ecology, education and leisure. However, their study demands easily available and user-friendly identification aids. The need for this book arises from the fact that Joy's handbook, so effective and admired in its day, has long been outdated and has not been replaced by anything suitable for modern circumstances, except for a few families. By supplementing Joy, it will rescue many coleopterists adrift in a sea of additions, taxonomic revisions and name changes hidden in the mysterious depths of obscure journals. However, it will hardly encourage many new entomologists to take up the study of beetles. For that we need a new Joy and if we don't produce one, I fear that the study of British beetles, which has been so popular compared to other groups, will sink into a state of neglect.

In the meantime we can congratulate Peter Hodge and Richard Jones for providing us with a valuable navigational tool for locating references. Many people have told me how useful they find the book and it represents a major breakthrough for all who are trying to keep up to date with their identifications. I am sure that all devotees of British Coleoptera will want to join me in warmly thanking Peter and Richard for making our studies much easier to pursue.

Derek Lott

Field Meeting

Lincolnshire: "Fowler's Country" - Fri. 7th to Sun. 9th June 1996. Leader: Dr Roger Key - Tel.: (01733) 318345 (during office hours) or (01733) 210541 (home).

A Coleopterists' Weekend based at Horncastle College, Lincolnshire. Horncastle is well situated, not only to visit the Lincolnshire lime woods, but also has good access to the dunes and saltmarshes of the Lincolnshire coast, the heathlands of the Lincolnshire Coversands and Spilsby Sandstone, the few remnants of calcareous grasslands of the Lincolnshire Wolds and Edge and even the desolate landscapes of the fens. Participants will have access to some excellent areas of all these habitats on reserves of the Lincolnshire Trust, few of which have been investigated for beetles.

There are still spaces available. For further details and to book your space please contact Roger Key.

Review

A Provisional Atlas of the Click Beetles of Warwickshire (Insecta: Coleoptera: Elateroidea) by Steve Lane. Warwick: Warwickshire Biological Records Centre. 1994. 5 pp., 32 maps. A4 paper bound. Price £0.60 incl. p.& p.; ***A Provisional Atlas of the Chrysomelid Beetles of Warwickshire (Insecta: Coleoptera: Chrysomelidae)*** by Steve Lane. Warwick: Warwickshire Biological Records Centre. 1994. 21 pp., 157 maps. A4 paper bound. Price £1.30 incl. p.& p., both available from Warwickshire Biological Records Centre, Warwickshire Museum, Market Place, Warwick CV34 4SA (cheques payable to Warwickshire County Council).

These updated versions of provisional atlases form part of the 'Benchmark 1990' series dealing with the fauna and flora of vice-county 38. A brief introduction is followed by a series of maps (10 per page for the Chrysomelidae and 15 per page for the Elateroidea), one for each species recorded from the county. The maps consist of an outline of vice-county 38 onto which is overlaid a grid of the 41 10-km squares in the county. The most recent record for each grid square is shown by either a 'V', indicating a published record in the Warwickshire Victoria County History (VCH) list, or a number from '1' to '9' indicating the decade for the most recent record this century. A brief statement on status, distribution and ecology accompanies each map.

The Elateroidea atlas does not have a list of references and there is no reference for the Warwickshire VCH list in either atlas. The county boundary in the Chrysomelid atlas is not very clear, especially on maps that are crowded with symbols. However, this does not detract from the usefulness of these valuable publications. Warwickshire is a little-known English county and there must be many coleopterists (including the reviewer) who have never visited the county for the purpose of recording insects.

Peter J. Hodge

Back Issues Notice

A subscriber has recently pointed out that when he bought reprints of *Coleopterist's Newsletter* in 1993, he was not supplied with supplements for issue No. 22. This is because the supplements were not then reprinted and would not have been charged for. We now supply reprints complete with supplements, and those for issue No. 22 can now be obtained separately as follows:

Supplement 1 - list of subscribers (as at October 1985) - A4 stapled **£0.45**

Supplement 2 - Burying beetles: a bibliography, by Martin Henderson - A4 stapled **£1.30**

Supplements 1 and 2 - £1.50.

Prices include postage to addresses within the U.K.; *overseas subscribers should add £0.50* to their order. Orders should be sent to the Hon. Treasurer **P.J. Hodge**, 8 Harvard Road, Ringmer, Lewes, East Sussex BN8 5HJ. Please remember that many of the addresses in the list of subscribers are no longer current and that the supplement is merely a historical record.

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.

Mini-interception nets: See letter describing this new collecting device in this issue. Now available for £4.40 incl. VAT, postage and packing extra. *Bob George* Marris House Nets, 54 Richmond Park Avenue, Bournemouth BH8 9DR.

For sale: ***Entomologist's Record & J. Var.*** **Vol. 5** [1894] lacks May issue only, in wrappers with index and title page; **Vol. 96** [1984] Parts 3-12 plus indices, wrappers; **Vol. 97** [1985] complete, wrappers; **Vol. 98** [1986] complete but lacks indices, wrappers. Each = £5 or £15 the lot, plus postage. *J. Cooter* 19 Mount Crescent, Hereford HR1 1NQ.

Specimens wanted: I would like to borrow a reliably named male and female of *Bruchidius bimaculatus* (Olivier) and *B. varius* (Olivier). Specimens will be returned. *Peter Hodge* 8 Harvard Road, Ringmer, Lewes, East Sussex BN8 5HJ.

Records of *Arhopalus rusticus* wanted: For a future publication, I am compiling records held by museums or county recorders of *Arhopalus rusticus* (Linnaeus) (= *Criocephalus* in Fowler) (Cerambycidae) from the British Isles, that have not been published in any journal. Postage will be refunded. *Keith C. Lewis* 108 Park View Road, Welling, Kent DA16 1SJ.

Lower Derwent Valley records wanted: Work is underway to produce a complete list of the beetles of the Lower Derwent Valley, Yorkshire, to be produced in booklet form. The area is important for its beetle fauna and to date over 700 species have been recorded. The database of the Yorkshire Naturalists' Union is a valuable source of data but it is known that there is a wealth of data on the personal files of many coleopterists. All records (even of commoner species) will be greatly appreciated and all recorders will be duly acknowledged. Please send your records to: *Mike Denton* Yorkshire Museum, Museum Gardens, York YO1 2DR or *Bob Marsh* 11 Crusader Drive, Sprotborough, Doncaster, Yorkshire DN5 7RX.

Literature Notices

ALLEN, A.A. 1996. *Malachius aeneus* (L.) (Col.: Melyridae) in Cambs. and elsewhere. *Entomologist's Rec. J. Var.* **108**: 5.

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ALLEN, A.A. 1996. Two uncommon *Ptenidium* spp. (Col.: Ptiliidae) at Oxleas Wood, West Kent. *Entomologist's Rec. J. Var.* **108**: 10.

ALLEN, A.A. 1996. *Telmatophilus brevicollis* Aubé and *T. schoenherri* (Gyll.) (Col.: Cryptophagidae) in West Kent. *Entomologist's Rec. J. Var.* **108**: 26.

ALLEN, A.A. 1996. Diphthongs and delusions, or sense into nonsense. *Entomologist's Rec. J. Var.* **108**: 38. [*Laemophloeus* Dejean, 1837 *cf. Loemophloeus* Laporte, 1840 (Cucujidae)].

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ALLEN, A.A. 1996. A note on two clavicorn beetles in Kent. *Entomologist's Rec. J. Var.* **108**: 40-41. [*Triplax aenea* (Schaller) (Erotylidae) and *Rhizophagus dispar* (Paykull) (Rhizophagidae)].

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BRATTON, J. 1995. An additional character for distinguishing *Donacia simplex* from *D. vulgaris*. *Latissimus* **6**: 8. [Illus.].

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DENTON, J. 1995. An unusual specimen of *Hydroporus memnonius* Nicolai. *Latissimus* **6**: 2.

DENTON, J. 1995. The distribution and ecology of *Graphoderus zonatus* Hoppe in Britain. *Latissimus* **6**: 12-13. [Larvae illus.].

DENTON, J. 1995. Some unusual encounters with *Elmis aenea* (Müller). *Latissimus* **6**: 16.

DOLLING, W.R. 1995. More *Dorcus parallelipipedus* (L.) (Col., Lucanidae) and other beetles associated with rotten wood in East Yorkshire. *Entomologist's Mon. Mag.* **131**: 182.

FOSTER, A. 1995. Two localities for *Stictotarsus multilineatus* (Falkenström) in England, and its occurrence with other noteworthy species. *Latissimus* **6**: 1.

FOSTER, A.P. 1996. *Rhynchaenus testaceus* (Müller) and *Anthonomus rufus* Gyll. (Coleoptera: Curculionidae) in Cornwall. *Br. J. Ent. Nat. Hist.* **9**: 20.

JONES, R.A. 1995. *Rhinoncus albicinctus* Gyll. (Col.: Curculionidae) in south-east London, a third British locality. *Entomologist's Rec. J. Var.* **107**: 297-298.

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