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Cover: *Scaphidium quadrimaculatum* Olivier (Scaphidiidae) *R. S. Key*

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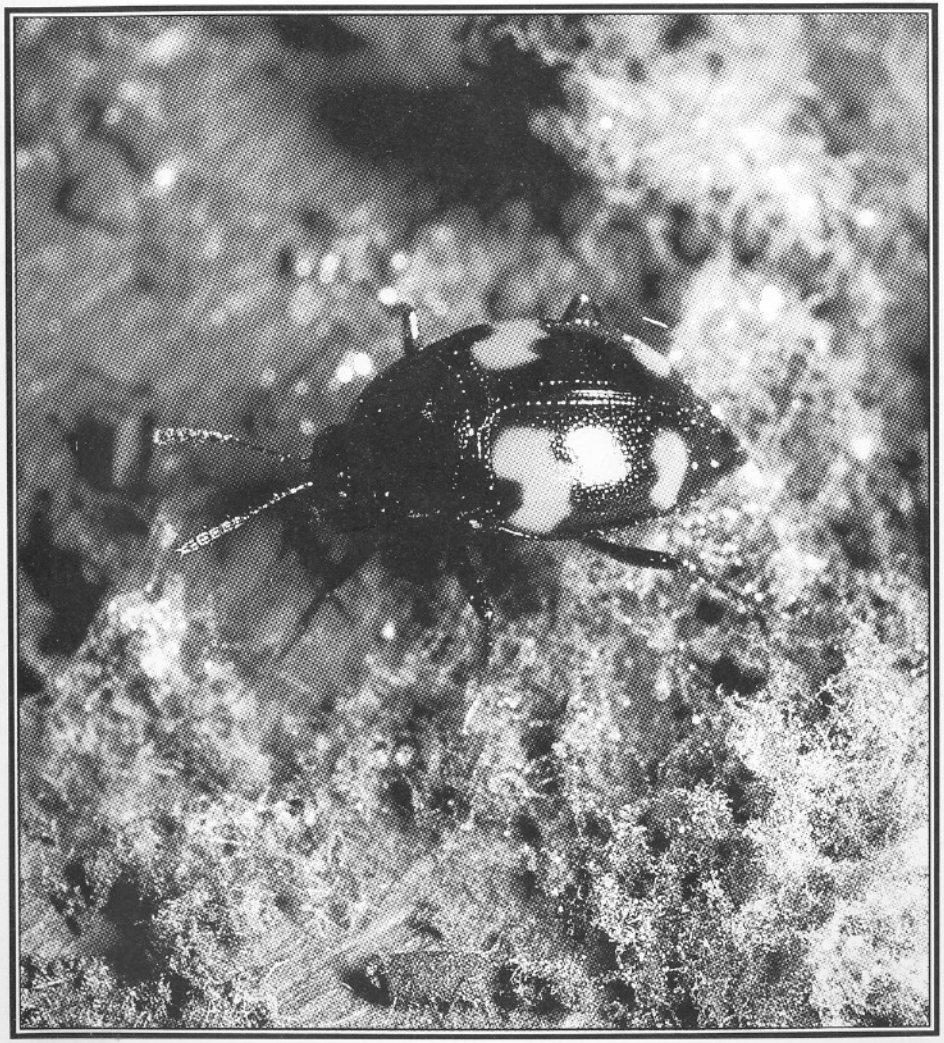

British species of *Glocianus*
Weevils from Sutherland and Caithness
Biological notes on *Bagous limosus*
Beetles of flood refuse in Warwickshire
Dead-wood beetles of Croome Park, Worcestershire
Notes • Letter • Book Notice

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The British species of *Glocianus* Reitter (Curculionidae: Ceutorhynchinae)

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Introduction

Glocianus was erected by Reitter (1916), as a subgenus of *Ceutorhynchus* Germar, to include two groups of species, one associated with Papaveraceae (poppies) and the other with species of the tribe Lactuceae (Asteraceae) ('yellow-flowered composites'). Cichoriae, an older synonym of this tribe, was incorrectly given as Chioriae in Morris (1991); plant nomenclature in the present paper follows Stace (1991), where possible. Wagner (1944) split off the species associated with poppies, erecting a further subgenus, *Neoglocianus*, to accommodate them. However, Wagner's name is considered to be a *nomen nudum* and the group is now known as *Neoglocianus* Dieckmann (1972). No British species of *Neoglocianus* is known. *Ethelcus verrucatus* (Gyllenhal) and *Stenocarus umbrinus* (Gyllenhal) are ceutorhynchines associated with Papaveraceae but neither is closely related to *Neoglocianus*. *Glocianus* is currently regarded as a full genus, with *Neoglocianus* and *Glocianus* s. str. as subgenera (e.g. Korotyaev & Cholokava, 1989).

Although the British fauna includes only four species of *Glocianus* (of some eight known from Western Europe) they can be difficult to identify, their biology is very poorly known, and only *G. distinctus* (Brisout) is sufficiently common and widespread not to be included in Hyman (1992) as either a 'Red Data Book' or 'Nationally Notable' species.

G. distinctus, *G. punctiger* (Gyllenhal) and *G. moelleri* (Thomson) have usually been regarded as closely related by British coleopterists (under the names current at the time), but the group has rarely included *G. pilosellus* (Gyllenhal), which, it has to be admitted, is dissimilar in vestiture, and to some extent in shape, from the other species. Edwards (1911) considered only the three former species. Joy (1932) included *pilosellus* in 'key 3', the other species in 'key 6', in his account of *Ceuthorhynchus*. Fowler (1891) had "never seen a specimen" of *moelleri* (his *rotundatus*) and it was omitted from his key, in which *pilosellus*, and *distinctus* + *punctiger*, appear in different sections. For clarity's sake it must be pointed out that Fowler's *Ceuthorrhynchus marginatus* and *Ceuthorrhynchidius distinctus* are the same species (although Fowler himself likened *distinctus* to *punctiger*); see discussion below.

Glocianus: brief diagnosis

Medium-sized ceutorhynchines (2.3-3.4 mm). Pronotum transverse, at base as broad as elytra at base, sides strongly rounded, *anterior margin strongly raised* (Fig. 1), without a median longitudinal groove, but *with a deep transverse impression subapically*. Elytra with a pale, basal, sutural macula covering at most the first (sutural) interstice; occasionally with pale scales on

alternate interstices; *elytra short*, strongly to moderately rounded at sides (Figs. 2-5). Head closely punctured, eyes moderately protuberant. Legs of moderate length, tarsal claws appendiculate. Antennal funiculus normally with seven segments (but see under *G. distinctus*). Pygidium usually sulcate and dimorphic in the two sexes. Median lobe symmetrical, apex pointed, sagittate, diagnostic for each species (Figs. 6-9).

Key to species

1. Upper surface without upstanding setae, setae at most slightly raised on elytral sides, generally recumbent only; elytra slightly cordate to short-oval, very short, strongly rounded at sides (Figs. 2, 3, 5); sutural macula larger and generally more conspicuous, completely covering sutural interstice at base and consisting of 30 or more individual scales. *2*

- Upper surface with evident upstanding setae, especially on elytra, readily seen in side view or at elytral declivity; elytra oblong, longer, less strongly rounded at sides (Fig. 4); sutural macula smaller, usually consisting of fewer than 20 white scales and often not completely covering sutural interstice at base [rare, in sandy places, on *Taraxacum laevigatum*]. . . . . 3. *pilosellus* (Gyllenhal)

2. General appearance dark brown; setae of elytral interstices variable, including dark, fine, inconspicuous, tapering, hair-like setae mixed with sparser broad, whitish scales, vestiture overall contrasting with conspicuous white to pale yellowish sutural macula; antennal scape longer, its club narrower and more gradually expanded to apex; (median lobe of ♂ strongly rounded at sides; Figs. 6, 9). *3*

- General appearance greyish; setae of elytral interstices more uniform, consisting entirely of broader, subtruncate, conspicuous, greyish, scale-like setae arranged neatly in three rows on each interstice, vestiture overall not contrasting so markedly with less conspicuous whitish sutural macula; antennal scape shorter, its club broader and more abruptly expanded to apex; (median lobe of ♂ parallel-sided in middle; Fig. 7) [very rare, on chalk downs, probably on *Leontodon* and *Hieracium* spp.]. . . . . 2. *moelleri* (Thomson)

3. Elytra more strongly rounded at sides, broadest well behind humeri (Fig. 5); pronotum slightly more depressed apicad, in profile with a more gentle curve towards base from anterior subapical depression, pronotum closely but less confluently punctured, less rugose; setae at sides of elytra completely recumbent, giving elytra a 'smoother' appearance [local, on dandelions, predominantly *Taraxacum officinale* agg.]. . . . . 4. *punctiger* (Gyllenhal)

- Elytra less strongly rounded at sides, broadest at or only a little behind humeri (Fig. 2); pronotum less depressed apicad, in profile with a more abrupt steeper curve towards base from anterior subapical depression, pronotum closely and confluently punctured, more rugose; setae at sides of elytra slightly raised, giving elytra a rather 'rougher' appearance [fairly common, though seldom abundant, on hawkbits (*Leontodon* spp.), hawkweeds (*Hieracium* spp.), hawksbeards (*Crepis* spp.) and related species, not normally on dandelions]. . . . . 1. *distinctus* (Brisout)

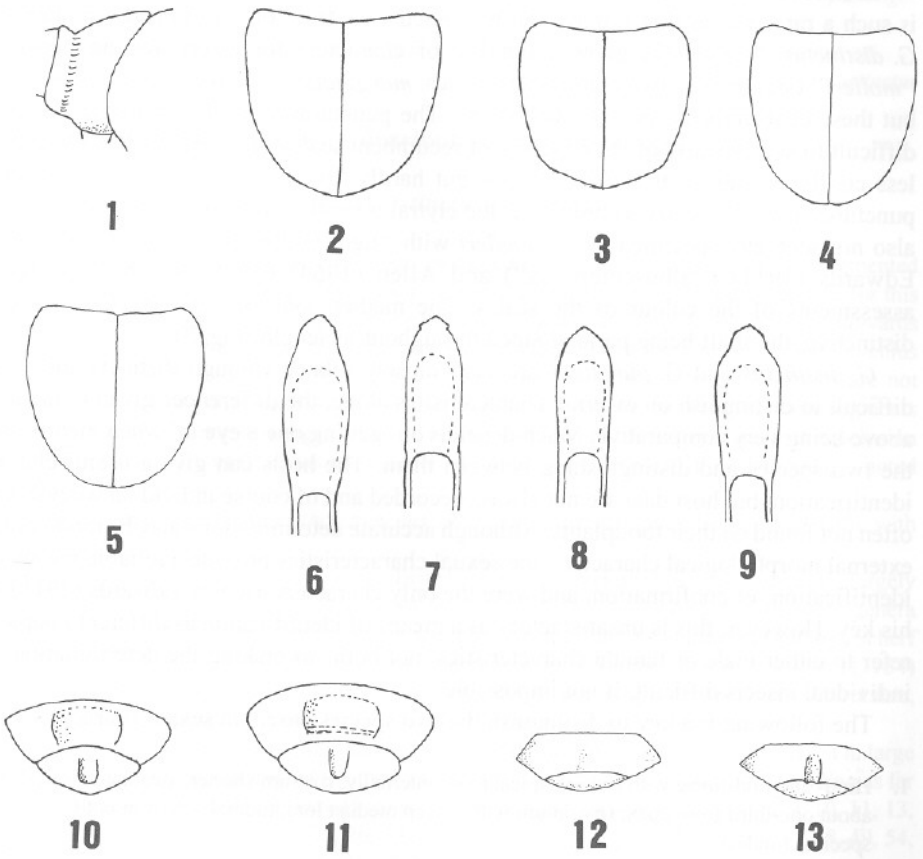

Fig. 1: *Glocianus moelleri*, prothorax in side view showing deep subapical furrow (generic character).
Figs. 2-5: Outlines of elytra: **2** *G. distinctus*; **3** *G. moelleri*; **4** *G. pilosellus*; **5** *G. punctiger*.
Figs. 6-9: Shape of median lobes: **6** *G. distinctus*; **7** *G. moelleri*; **8** *G. pilosellus*; **9** *G. punctiger*.
Figs. 10-11: Male anal segments: **10** *G. punctiger*; **11** *G. distinctus*.
Figs. 12-13: Female anal segments: **12** *G. distinctus*; **13** *G. punctiger*.

Additional notes on identification

G. pilosellus is a very distinct weevil and is not likely to be confused with any other species of *Glocianus*. As pointed out above, it appears in a different key in Joy (1932), the most readily available work of identification of British Coleoptera.

G. moelleri is also distinct. The main difficulty in identifying it is likely to be that it is such a rare species that it may well be passed over from time to time as an aberrant *G. distinctus*. Joy (1932) gives a number of characters for discriminating between "*molleri*" (sic) and the two commoner species, *marginatus* (= *distinctus*) and *punctiger*, but these characters are not all satisfactory. The puncturation of the pronotum is often difficult to see, because of the covering of recumbent scales. It is slightly less close and less confluent than in the other species, but hardly "much stronger". The individual punctures are not "nearly as broad" as the elytral interstices (to my eye at least). I have also not seen any specimen of *G. moelleri* with "light yellowish" scales; I agree with Edwards (1911) ("albo-cinereous") and Allen (1964) ("greyish-ashy") in their assessments of the colour of the scales. The median lobe of male *moelleri* is very distinctive, the shaft being parallel-sided throughout its length (Fig. 7).

G. distinctus and *G. punctiger* are very closely related (though distinct) and very difficult to distinguish on external characteristics alone, the differences given in the key above being very comparative. Much depends on 'getting one's eye in' when identifying the two species and distinguishing between them. The hosts can give a useful clue to identification, but host data are not always recorded and of course individual weevils are often not found on their foodplants. Although accurate determinations may be made using external morphological characters, the sexual characteristics provide a reliable means of identification, or confirmation, and were the only characters used by Edwards (1911) in his key. However, this is unsatisfactory as a means of identification as different couplets refer to either male or female characteristics, not both, so making the determination of individual insects difficult, if not impossible.

The following is a key to distinguish the two species based on sexual characters:

1. Hind- and mid-tibiae with a sharp apical tooth internally; rostrum shorter, antennae inserted at about one-third from apex; (pygidium with a deep median longitudinal sulcus in both species) (males). *2*

\- Hind- and mid-tibiae without a sharp apical tooth; rostrum longer, antennae inserted at about two-fifths from apex (females). *3*

2. Last ventral segment strongly excavated, with a shining, transverse carina or narrow ridge, about one-quarter to one-fifth from apex, posterior margin of segment straight or nearly so (when seen from above) (Fig. 11); median lobe longer and narrower, sides rounded at base, gradually convergent to apex, without an abrupt subapical constriction (Fig. 6). . . . . *distinctus*

\- Last ventral segment strongly excavated, but without a transverse carina, posterior margin of segment slightly, but distinctly, concave (Fig. 10); median lobe shorter and broader, sides more strongly rounded, with a clearly abrupt subapical constriction (Fig. 9). . . . . *punctiger*

3. Pygidium with a conspicuous, deep, broad, median longitudinal sulcus or groove (Fig. 13). . . . . *punctiger*

\- Pygidium with, at most, a very shallow, feeble median depression, but without a sulcus or groove (Fig. 12). . . . . *distinctus*

Notes on nomenclature, ecology, distribution and conservation

1. *G. distinctus* (Brisout)

It is ironic that Brisout's species-group name, coined for specimens with a six-segmented funiculus (recognised for nearly 100 years as not specifically distinct), should be current for this species, the name *marginatus* (Paykull) being more familiar to many British coleopterists. Edwards (1911) discussed antennal variation in the species, and referred to a specimen with one funiculus having six segments and the other with seven. Specimens with six antennal segments are not uncommon; I took one on Brean Down, Somerset, on 28.v.1968. (The number of antennal segments in ceutorhynchines is not now regarded as a generic character, but formerly it led to the inclusion of the antennal variants of *G. distinctus* in different genera, for example by Fowler (1891), as noted above).

Edwards also described *Ceuthorrhynchus simillimus*, currently regarded as conspecific with *G. distinctus*.

The foodplants of *G. distinctus* in the British Isles are not known with any certainty, largely because 'yellow-flowered composites' are a difficult group to most coleopterists, some genera containing a bewildering array of microspecies and apomictic forms. Of continental authors, Scherf (1964) and Dieckmann (1972) give the most comprehensive accounts, those of Hoffmann (1954) and Koch (1992) being much less detailed. Dieckmann mentions species of *Crepis*, *Hieracium*, *Hypochoeris* and *Lactuca* as hosts; larvae feed in the capitula on unripe seeds.

G. distinctus is widely distributed throughout England and Wales, but is seldom taken in large numbers. It is rather rare in Ireland (Morris, 1993) and local in southern Scotland, extending as far north as Morayshire. There are records from the following vice-counties: 2, 3, 6, 8, 9, 10, 11, 13, 14, 15, 16, 17, 20, 21, 22, 23, 24, 25, 26, 29, 30, 31, 33, 34, 36, 37, 38, 41, 43, 45, 46, 48, 49, 54, 55, 58, 59, 63, 66, 67, 70, 71, 72, 73, 81, 95, H6, H9, H20, H21.

2. *G. moelleri* (Thomson)

This rare species was not known to Fowler (1891), though he referred to it under the name of *rotundatus* Brisout. Edwards (1911) compared specimens from the Thomson collection at Lund with examples taken by Champion from Caterham and Reigate and also a specimen in the Crotch collection, recorded as having been taken near London (Sharp, 1871). This is the "vague record" referred to by Allen (1964). However, a photocopy of Edwards' paper in my possession has a MS. note under the initials H.S. [Hugh Scott, from which I assume that the run of the journal from which

the copy was taken is in Cambridge]. This note reads: "actually taken by E.W. Janson at Dorking. 23.vi.1860. See MS. note in E.M.M. viii. p.83 (1871)".

At all events, Edwards (1911) established that *Ceuthorrhynchus mölleri* (amended to *moelleri* - see Duff (1996), though here, of course, the diacritic mark is an umlaut not a diaeresis) was a British species, if a very rare one.

Almost nothing is known about the hosts of *G. moelleri* in Britain. Allen (1964) referred to "*Hieracium* etc.", and Hyman (1992) stated "Possibly associated with hawkweed *Hieracium* and hawkbit *Leontodon*", both presumably on the basis of continental records. Dieckmann (1972) mentions *Hieracium aurantiacum*, *H. murorum*, *H. umbellatum*, *Crepis setosa* and *Leontodon autumnalis*. He also associated the species with cool and damp areas; this is not the case in England. The life cycle is unknown, though it is likely that larvae feed in the capitula of the hosts.

Besides the Surrey records of Champion (Reigate and Caterham - to which Massee (1964) added Weybridge, on what authority is not clear) and Janson/Crotch (Dorking), *G. moelleri* has been recorded from 'Trossley' [Trottiscliffe], Kent (Massee, 1963, 1964) and Streatley, Berkshire (collected by J.J. Walker, "no doubt on the chalk downs") (Allen, 1964).

Additional, unlocalised, records for North Hampshire and Oxfordshire were given by Hyman (1992). The Oxfordshire records are from Aston Rowant National Nature Reserve, where G.E. Woodroffe took *G. moelleri* sparingly in the 1960s. I have one of his specimens, taken 17.v.1966, and there is another in the National Collection. I took single specimens by 'vacuum netting' on the International Biological Programme experimental plots (SU 728974) on the Aston Rowant reserve on 18.v. and 2.vii.1971. In North Hampshire I found a male specimen under a stone on the experimental grounds of the (then) Porton Chemical Defence Establishment (SU 249380) on 10.vi.1969. Finally, Mr W.E. Rispin and I took a male *G. moelleri* in a pitfall trap on Old Winchester Hill National Nature Reserve (SU 641204), the pitfall catch being collected on 12.vii.1983. This is not included as a 'post 1970' record for N. Hants. in Hyman (1992). In summary, there are records from vice-counties 12, 16, 17, 22 and 23.

It is noteworthy that the British records of this species are all from chalk areas or specifically from chalk downland.

Hyman (1992) suggested revising the conservation status of *G. moelleri* from RDB3 (Rare) (Shirt, 1987) to 'Insufficiently Known' (presumably because of ignorance about its hosts). But 'Rare' seems to describe the status of the species well. There is no evidence of a decline in abundance (though the area of chalk downland has certainly declined), yet the species is one which is very seldom taken by collectors.

3. *G. pilosellus* (Gyllenhal)

The inclusion of this species in *Glocianus* is based on food-plant relationships as well as morphological features.

Although Dieckmann (1972) did not know the host, it is well established that in Britain the weevil is associated with *Taraxacum* section Erythrosperma (= *laevigatum*) (Hodge, 1987). Koch (1992) stated "probably on *Hieracium*", but this is incorrect as far as is known in Britain. However, I know of no breeding records, though the larva probably feed in capitula of the host. At its currently best-known site, Merthyr Mawr Warren, Glamorganshire, the weevils are often found away from their hosts on bare sand (Cooter, 1990).

G. pilosellus is a very local species. It has been recorded from seven vice-counties, all in southern England or South Wales, but many of the records are very ancient. In addition to the post-1970 occurrences referred to by Hyman (1992) it has been rediscovered at Tubney, Berks.

[VC 22, but now in Oxfordshire], where it was last taken previously in 1918 (Walker, 1918) (D. Copestake *in litt.*). I have one of Mr Copestake's specimens; it was taken on 14.v.1996. In summary, there are vice-county records from: 1, 3, 15, 16, 17, 22 and 41. The weevil is not known from Scotland or Ireland.

A notable feature of this species is that it is flightless, with rudimentary or poorly developed wings. It is possible that this characteristic has contributed to the isolation of populations and the general rarity of the species. Although there are many flightless weevils, especially in the Entiminae (Morris, 1997), these are often parthenogenetic, a circumstance which may reduce the risk of local extinctions.

The classification of *G. pilosellus* as RDB2 (Vulnerable) (Shirt, 1987; Hyman, 1992) seems entirely justified on the paucity of recent records and the threats to open arenaceous areas from natural succession and development, particularly on the coast.

4. *G. punctiger* (Gyllenhal)

This is a local species which is associated here and abroad with the common Dandelion *Taraxacum officinale* agg. Both Scherf (1964) and Dieckmann (1972) give considerable detail of the life-history and early stages. Eggs are laid in flowering stems, but the larvae feed in receptacles of the flowers.

G. punctiger occurs widely throughout southern England and Wales, extending as far north as south Lancashire. It has also been recorded from Cumberland, and Fowler (1891) gives Solway and Moray districts, the original records of which I have been unable to trace. A remarkably northern record from East Ross (Collingwood, 1957) perhaps requires confirmation. The species is very local in Ireland (Morris, 1993). A summary of vice-county records is: 1, 2, 3, 4, 6, 9, 10, 11, 13, 15, 16, 17, 20(?), 22, 23, 29, 31, 33, 41, 44, 46, 48, 53 or 54, 58, 59, 70, 105(?), H1, H16, H20, H21, H22, H37.

The local nature of *G. punctiger* is reflected in its status as Nationally Notable (B) (Hyman, 1992). However, it is difficult to see what conservation measures could be taken for a species which occurs on such an abundant and ubiquitous host.

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Pelenomus olssoni (Israelson) (Curculionidae) in Hampshire

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I found a single male of this species near Brockenhurst in South Hampshire (VC 11; SU 30) on 2nd May 1997. The specimen was obtained by sifting vegetation growing in and at the edge of a shallow pond. I made two visits to the site in 1998 but failed to find any more examples. Hyman (1992) records the species (as *Phytobius olssoni*) from Berkshire in 1927, and West Sussex and Cardiganshire since 1970.

Acknowledgement

I thank Prof. John Owen for confirming my identification.

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Some records of weevils (Curculionoidea) from Sutherland and Caithness, Northern Scotland

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Introduction

The known distribution of weevils (and doubtless other Coleoptera not currently covered by active recording schemes) is extremely patchy in the British Isles. England has been fairly well covered, with much early recording having been done in the south, and bodies such as the Yorkshire Naturalists' Union and the Lancashire and Cheshire Fauna Committee undertaking much valuable groundwork in the north of the country.

In the early part of the twentieth century the influence of the Victoria County Histories was considerable, and many good lists have been produced of the coleopterous faunas of individual counties.

In recent years the very poor coverage of Wales has been rectified, to a large extent, by the efforts of Adrian Fowles and his co-workers, although the results have not yet been published. Irish records have recently been summarised by Morris (1993), and work continues to improve the coverage of a country where there are relatively few resident or visiting coleopterists.

Despite advances elsewhere, recording of weevils in Scotland has been particularly patchy, even over the past fifty years. Some favoured localities have been relatively well-worked, with Rannoch, Aviemore and Deeside popular with successive generations of recorders. The Islands have also been relatively well recorded. Some useful lists from the Hebrides have been produced (Wormell, 1982; Waterston *et al.*, 1981; Steel & Woodroffe, 1969), and there are also lists from the Shetlands (Bacchus, 1980) and Orkneys (Poppius, 1905); some doubts exist about some of the records in the last of these lists. However, the last comprehensive account of Scottish Coleoptera is Sharp (1873-80). Not only is this very out of date, but Sharp used divisions of the country based on the watersheds of major rivers. It is difficult (sometimes impossible) to relate these to either National Grid squares or vice-counties. A bare list of species known from Scotland was compiled from the literature by the current author and included in Ward (1997), but this account does not consider distribution within the country.

During the 1960s and 1970s much entomological recording was done in Scotland and elsewhere, initially under the general guidance of W.D. Hincks, followed by W.O. Steel and then E.C. Pelham-Clinton. This work was in part supported by the Nature Conservancy.

In July and August 1972 a small team of entomologists undertook recording of a number of terrestrial insect groups in Sutherland and Caithness. These two counties (three vice-counties) form a compact area which comprises the whole of the extreme northern

part of the Scottish mainland. The results of recording Curculionoidea during that survey are belatedly reported here, in the belief that records from this area, hitherto extremely limited, are of some interest in the context of the biogeography of the British Isles. Also included are a few records of species taken at other times. A few of the records have been published previously, but are included here to make the account comprehensive.

Previous records of weevils from Northern Scotland

Only 29 species had been recorded in the literature from the counties of Sutherland (East and West, VCs 107 & 108) and Caithness (VC 109) before the present account (Table 1).

Table 1: Literature records from three vice-counties in Northern Scotland; Nationally Notable (Na and Nb) and Red Data Book (RDB) status is shown (* = the author's records which are included in the current paper)

Species	*VC 107*	*VC 108*	*VC 109*	*Status*
Deporaus betulae (Linnaeus)		+		
Apion frumentarium (Linnaeus)	+			
Otiorhynchus arcticus (Fabricius, O.)	+	+	+	
Otiorhynchus atroapterus (De Geer)			+	
Otiorhynchus morio (Fabricius)		+		(RDBI)
Otiorhynchus nodosus (Müller)	+			
Otiorhynchus ovatus (Linnaeus)			+	
Otiorhynchus singularis (Linnaeus)	+	+	+	
Otiorhynchus sulcatus (Fabricius)	+		+	
Phyllobius argentatus (Linnaeus)		+		
Phyllobius maculicornis Germar		+		
Strophosoma melanogrammum (Forster)		+		
Strophosoma nebulosum Stephens		+		
**Philopedon plagiatum* (Schaller)	+	+	+	
Barynotus squamosus Germar	+		+	
Sitona hispidulus (Fabricius)	+			
Sitona lepidus Gyllenhal	+		+	
Sitona macularius (Marsham)			+	(Nb)
Sitona puncticollis Stephens	+			
Sitona striatellus Gyllenhal	+			
Sitona sulcifrons (Thunberg)	+		+	
Tropiphorus terricola (Newman)			+	(Nb)
**Coeliodes nigritarsis* Hartmann		+		(Na)
Ceutorhynchus contractus (Marsham)			+	
Micrelus ericae (Gyllenhal)		+		
**Anthonomus brunnipennis* (Curtis)		+		
**Gymnetron beccabungae* (Linnaeus)	+			(Na)
Rhynchaenus fagi (Linnaeus)		+	+	
Ramphus pulicarius (Herbst)		+		

The ground-living species had been reasonably covered, but those of herbaceous vegetation had been neglected. A few of the records (e.g. those of *Apion frumentarium* (Linnaeus) and *Sitona macularius* (Marsham)) perhaps need confirmation. The record of *Otiorhynchus morio* (Fabricius) (Taylor, 1906) is the most interesting, as it is the most recent of this very rare and poorly-known species which may, indeed, be extinct in the British Isles. *Sitona puncticollis* Stephens was recorded by Jackson (1921), and is of interest because this species is regarded as uncommon in Britain today (though with no Nationally Notable status).

Localities

The sites visited, with National Grid References, vice-counties, dates and abbreviations used here, were:

Code	*Location*	*Grid Ref.*	*VC*	*Date(s)*
Ac	Achnabourin, nr. Bettyhill	NC 7158	108	1.viii.1972
Ar	Armadale Bay, Armadale	NC 7964	108	2.viii.1972
B	Nr Brora	NC 9106	107	2.vii.1974
Ba	Banniskirk, nr Halkirk	ND 1557	109	6.vii.1974
Be	Berriedale	ND 1122	109	2.vii.1974
C	Chealamy, Strathnaver	NC 7250	108	29.vii.1972
Do	Dornoch Dunes	NH 8088	107	2.viii.1975
Du	Dunnet area	ND 2169, 2268 & 2075	109	3-5.vii.1974
F	Farr Bay, Bettyhill	NC 7162	108	30.vii. & 2.viii.1972
G	Golspie Links, Golspie	NH 8196	107	2.viii.1975
I	Invernaver N.N.R.	NC 6960 & 6961	108	28.vii.1972
K	Knockan, Elphin	NC 2110	108	7.vii.1967
Lg	Links of Greenland, Dunnet	ND 2168	109	3.vii.1974
Ln	Lower Newport, Berriedale	ND 1223	109	6.vii.1974
M	Mound Alder Woods N.N.R.	NH 7699	107	27.vii.1972
Sk	Skail Burn, Strathnaver	NC 7147 & 7148	108	29.vii.1972
St	Strathy Bay, Strathy	NC 8465 & 8365	108	31.vii. & 2.viii.1972
Sb	Strathy Bog N.N.R.	NC 8053	108	31.vii.1972
T	Tongue Woods, Tongue	NC 5958	108	30.vii.1972
Th	Thurso	ND 1167	109	3.viii.1972

Systematic List

Nationally Notable status is shown.

ATTELABIDAE

Deporaus mannerheimi (Hummel)	Ac, Sk

APIONIDAE

Ceratapion gibbirostre (Gyllenhal)	Ar,Lg
Ceratapion onopordi (Kirby)	Ar,F
Perapion curtirostre (Germar)	C,M,B,Ln
Perapion marchicum (Herbst)	Ln
Perapion violaceum (Kirby)	M,St,Du
Apion haematodes Kirby	C

Protapion fulvipes (Geoffroy)	Ac,Sk,St,Th,Du,G	
Protapion apricans (Herbst)	St	
Protapion assimile (Kirby)	Ar,F,St,Du	
Ischnopterapion loti (Kirby)	I,St,Du,Lg,Do	
Ischnopterapion virens (Herbst)	F	
Holotrichapion aethiops (Herbst)	Ar,St,Lg	
Cyanapion spencei (Kirby)	F,Lg	
Eutrichapion viciae (Paykull)	Ar,F,St,B,Du,Lg	
ERIRHINIDAE		
Erirhinus acridulus (Linnaeus)	M,Sk	
Grypus equiseti (Fabricius)	Du,Lg	
CURCULIONIDAE		
Otiorhynchus arcticus (Fabricius, O.)	C,F,Du	
Otiorhynchus atroapterus (De Geer)	F,I,St,Do,Lg	
Otiorhynchus desertus Rosenhauer	I,St,Du	(Nb)
Otiorhynchus nodosus (Müller)	I [5.viii.1972, On ferns in gully leg. G.E. Woodroffe]	
Otiorhynchus rugifrons (Gyllenhal)	I	
Otiorhynchus scaber (Linnaeus)	T	(Nb)
Otiorhynchus singularis (Linnaeus)	K,Ar,F,I,Sk,T,Ba,Du	
Phyllobius argentatus (Linnaeus)	C,Be	
Phyllobius viridicollis (Fabricius)	Lg	
Polydrusus pilosus Gredler	C	
Polydrusus pterygomalis Boheman	K,Ac,Ba,Be	
Barynotus squamosus Germar	Du [1.vii.1974, leg. E. Duffey]	(Nb)
Strophosoma melanogrammum (Forster)	C,Sk,Be	
Philopedon plagiatum (Schaller)	I,St,Du,Lg	
Sitona griseus (Fabricius)	Do,G	
Sitona lepidus Gyllenhal	Sk,St,Th,Do	
Sitona lineellus (Bonsdorff)	C, F,St,G,Lg	
Sitona regensteinensis (Herbst)	G	
Sitona striatellus Gyllenhal	Be	
Sitona sulcifrons (Thunberg)	F	
Hypera plantaginis (De Geer)	St	
Hypera venustus (Fabricius)	St,Do	
Anoplus plantaris (Naezen)	Ac	
Dorytomus taeniatus (Fabricius)	K,St	
Anthonomus brunnipennis (Curtis)	St, A	
Rhinoncus castor (Fabricius)	C	
Coeliodes nigritarsis Hartmann	Ac	(Na)
Micrelus ericae (Gyllenhal)	C,I,Sb,Du,G	
Parethelcus pollinarius (Forster)	Ar,St,T	
Hadroplontus litura (Fabricius)	Ar	
Ceutorhynchus contractus (Marsham)	F,St,Lg	
Ceutorhynchus floralis (Paykull)	F	
Nedyus quadrimaculatus (Linnaeus)	T,Th,Du	
Gymnetron beccabungae (Linnaeus)	M	(Na)
Rhynchaenus fagi (Linnaeus)	T,Ba,Lg	
Ramphus pulicarius (Herbst)	Ac,St,Sb,Sk	

Biogeographical and other notes

64 species of Curculionoidea (excluding Scolytidae) have now been recorded from Caithness and Sutherland combined. The numbers recorded in the three vice-counties are: VC 107 - 24; VC 108 - 48; VC 109 - 33. Although more species will undoubtedly be added, particularly to the individual vice-county lists, it is unlikely that the number will be greatly increased in the short term.

The weevil fauna of northern Scotland may be regarded as impoverished; Morris (1993) estimated that about 60 species of weevils were known from Sutherland as against about 436 from Kent. However, the northern Scottish fauna is not without interest. It may be said to comprise two main elements: a larger proportion of common species with wide distributions in northern Europe that are able to survive in the harsh climate; and a smaller number of arctic-alpine species which can be regarded as specialists in the area. The latter group comprises *Otiorhynchus arcticus*, *O. nodosus*, *O. morio*, *O. scaber*, *Barynotus squamosus*, *Coeliodes nigritarsis* and perhaps *Polydrusus pilosus* (Morris & Owen, in prep.). It is this group which contains most of the Nationally Notable species, as well as the Indeterminate *O. morio* (Red Data Book status), but not exclusively. In total, one RDB(I), two Na, and five Nb species are included in the present account.

A notable feature of the fauna is the preponderance of Entiminae, with species of *Otiorhynchus* Germar and *Sitona* Germar being particularly well represented. Sequentially, this tendency has been even more marked: 20 of the 29 species previously recorded were entimines (69%); currently 29 of 64 species are broad-nosed (45%); for the British Isles as a whole the proportion is about 19%. It is not clear why previous records so greatly emphasised entimines, since many of them are of common species (e.g. *Otiorhynchus singularis*, *Strophosoma melanogrammum*). Almost no species of the equally common Apionidae was recorded in the same period. Some preponderance of entimines may be expected because most species in the group are polyphagous.

The influence of climate in impoverishing the fauna may be mediated directly, or through the vegetation, with some weevils' host plants absent from the area. Other things being equal, the absence of many host plants would reduce the numbers of stenophagous species able to exist in the area. However, the flora of northern Scotland is rich in many respects, and the poverty of the weevil fauna is probably mainly due to adverse climatic factors. Whether this will change under the influence of global warming only time will tell. It is now that a base line should be established, through further work, to determine more comprehensively the current composition of the fauna in the north of Scotland.

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Two weevils (Curculionidae) new to Cumbria

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The following two weevils were found during the course of recording Coleoptera on the Drigg Dunes (SD 09) in west Cumbria (VC 70, Cumberland) on 26th September 1998. As far as I am aware these two species have not been recorded previously from Cumbria, which includes vice-counties 69 and 70.

Stenopelmus rufinasus Gyllenhal — three dead specimens were found in a small accumulation of debris along the upper shoreline (SD 0597). This very small weevil is associated with Water Fern *Azolla filiculoides* and appears to be a rather uncommon beetle in Britain.

Sibinia primitus (Herbst) — a single individual was found crawling on damp sand on the edge of a sparsely vegetated area close to the River Irt (SD 0696). According to Hyman (1992), *S. primitus* is graded Notable B and is widespread but local, occurring mainly in southern England. Its distribution also extends to North Lincolnshire and it has been recorded from parts of Wales. The weevil is associated mainly with pearlwort *Sagina* and Rock Sea-spurrey *Spergularia rupicola*.

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Correction

The authors of the paper by Eyre, Luff & Lott (1998, *Coleopterist* **7**(3): 81-90) regret that some grid references were given incorrectly. The sites concerned are those on the Langholm-Newcastelton Hills SSSI, referred to in the paper as 'Tarras' (including 'Byrecleugh Burn'). The 100 km square for these localities is given as either NT or NY in various pages; in fact all these sites are in the 100 km square NY. We are grateful to Prof. John Owen for spotting this mistake so promptly, and apologise for any confusion that this may have caused. *Martin Luff*

Biological notes on *Bagous limosus* Gyllenhal (Curculionidae), including locomotion and respiration

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Weevils of the subfamily Bagoinae are highly adapted to an amphibious mode of life. The adults normally live partly in and partly out of water in sluggish ditches or shallow ponds. Only a few notes on the habits of the Bagoinae have appeared in British entomological journals (Angus, 1965; Massee, 1961), and the major studies are confined to a few continental authors (Dieckmann, 1964; Menier, 1970; see also Ruter, 1937, summarised by Dieckmann, *op. cit.*).

This paper is based on a programme for the attempted breeding of *Bagous limosus* Gyllenhal, conducted during 1993-94, its main purpose being to study their general habits, locomotion and respiration.

Materials and methods

An aquarium (A), measuring 450 (l) x 250 (h) x 250 (w) mm, was established with mud, water plants, including the food plant Bog Pondweed *Potamogeton polygonifolius*, and pond water supplemented with rainwater to a depth of *c.* 80 mm. A fine netting lid secured the top of the aquarium. A second aquarium (B) was larger, 700 (l) x 365 (h) x 320 (w) mm, and specially constructed to provide more fresh air and a separate land area for hibernation. The glass at the back of this aquarium was only 210 mm high with fine nylon netting glued above it. A partition 140 mm high divided the base of the aquarium 170 mm from one side. The smaller space was filled with muddy soil taken from the bank of the pond where the specimens were obtained, while the larger area was established as in aquarium A.

In late May 1993, 24 specimens were obtained from a pond in the New Forest, Hampshire, and 12 put into each aquarium. The aquaria were placed outside in partial sun and protected from too much rain. With the onset of winter the aquaria were placed in an unheated greenhouse for protection against heavy frost and rain, and to facilitate observation during the following spring. More specimens and food plant were added in June 1994. Measurements of pond water temperature and pH were made at the time these specimens were taken: at the start of the collecting session at 11.00 a.m. on 9.6.1994 the water temperature was 18°C and at 12.45 p.m. it was 23.5°C; the pH was 6.3-6.5.

Results and observations

Actual breeding was not proven during this study: no larvae were found, although the stalks of several specimens of the food plant were carefully dissected and searched, and no evidence of leaf mining was seen. It proved impossible to tell if any new adults had emerged in the late summer or autumn. However, adults in the spring looked in pristine

condition, without any incrustations when examined under the microscope, and may have been a newly emerged brood.

I was also unable to determine how long the adults live. An attempt to mark individual beetles with an engineer's scriber was not successful as it was thought that new secretions would cover the scratches. When I cleared out aquarium B at the end of summer 1995, I discovered several adults under the mud and roots. These must have been 16 months old at least, if they were not part of a new brood.

Observations of adult *B. limosus* over a two-year period suggest that several specialised habits occur, and that these tend to occur in a predictable sequence.

Specialised habits

1. *Hibernation*: *B. limosus* appears to prefer to hibernate on land as adults, in soil at the roots of grass or in moss. They can survive without this, for in aquarium A, where no dry land was provided and only waterweed protruded from the surface of the water, two specimens appeared in April 1994 (the second year). However, I could not tell if these had newly emerged from pupae or had overwintered as adults. In aquarium B, where drier land was provided, six specimens were discovered in the water during April 1994 and I presumed that they had overwintered as adults.

2. *Searching and dispersal*: The early period after entering the water is spent actively crawling or swimming and probably, under natural conditions, dispersing by flight, perhaps even before entering the water (see under *Locomotion*, below).

3. *Mating*: At this stage, all the specimens aggregated in one area of the aquarium in fairly clear water and were very actively engaged in swimming and mating. Copulation was observed, usually occurring underwater but also above it on water plants.

4. *Feeding*: During this stage the beetles spent most of their time crawling on the food plant. Copulation still continued, but only half of the specimens could ever be seen at one time. They were less evident early in the morning. On warm days, specimens emerged from the water and crawled up emergent plants. The beetles ate holes in the leaves of the food plant and nibbled at the stalks. Much food was consumed until only stalks were left.

5. *Secretive*: Later in the season the beetles became very secretive and could not be observed very easily, with only one specimen discovered at any one time. However, the odd specimen would still swim and crawl out of the water on warm sunny days.

It appeared that under the artifically warmer conditions of the aquaria, habits 2-5 were more advanced compared to natural populations. In the aquaria, searching and dispersal (habit 2) occurred at the beginning of April and by mid-May the beetles had entered the secretive stage (habit 5). However, fresh specimens collected on 9th June 1994 and placed in aquarium B, were still mating (habit 3).

Locomotion

Locomotion is used not only for dispersal, mating and finding food, but for surfacing, usually every day or night during their active periods, to obtain oxygen for their plastron.

Adult aquatic Coleoptera are usually divided into *swimmers* and *crawlers*. In swimmers, the hind legs and perhaps also the middle legs are modified with wider tibiae and tarsi, which are often furnished with long fringes of hairs (e.g. Dytiscidae). In crawlers the usual modification is enlargement of the claws and apical tarsal segments (e.g. Elmidae) (Crowson, 1981). Most Bagoinae are listed as crawlers, but there has been some confusion as to whether they can also swim.

Crawling

Bagous species are amphibious and in addition to swimming under water will crawl along plants both under and above the water. They are found on surface vegetation and on mud at the edge of the water, especially on warm still evenings in June.

Swimming

Massee (1961) stated that Bagoinae "have no power of swimming, but cast themselves off their host plants and allow the current to carry them along". Other authors have reported that *Bagous* species are excellent swimmers. Angus (1965) collected specimens of *B. limosus* which were swimming amongst plants of *Potamogeton* and he observed them in an aquarium where they swam readily. He noted that the water was lukewarm to the touch when the beetles were actively swimming and suggested that the decrease in activity in cold water may effectively inhibit swimming. This, he thought, could explain the discrepancy with Massee's observations.

My own observations show that the conditions for active swimming in *B. limosus* involve the following factors. First, it is clear that these beetles are active swimmers and do not just cast themselves off and drift with the stream. However, active swimming is largely confined to the stages 2 and 3 (see *Activity cycle*, above), i.e. searching and dispersal, and mating. In other periods very little swimming was observed. The most active swimming was at a water temperature of 17-25°C, but odd swimmers were seen active at midday when the water temperature was as low as 11°C. They are only seen actively swimming with some sunshine and are most active in the evening of a warm day. However, during the secretive stage, even a hot day will not tempt many out to swim.

The best way to observe the swimming action is to put the beetles in a shallow white dish with 4-5 mm of water taken from the aquarium. The movements are slow enough to observe with the naked eye. Angus (1965) wrote that "their swimming action seems unique among beetles: the front femora are directed forwards under the head and the legs perform a rapid 'dog-paddle' under the beetles' rostrum. While the front legs are engaged in this action, the other two pairs perform slow walking movements which bear no relation to the swimming". Angus's description of the front leg movement is very apt and this has also been well described and illustrated by Menier (1970). However, Menier also described the rear leg movements which are not, as Angus (1965) thought, unrelated to swimming, but are actively assisting in the swimming process. Observation shows that all legs are actively engaged together in propelling the beetle. The pattern is: *front legs* move rapidly as in a 'dog-paddle'; *middle legs* move like oars; and the *back legs* kick back

hard. The three pairs of legs appear to work independently and are not synchronised. When moving slowly, the legs appear to be just flailing about randomly but on closer inspection (with a lens) the front legs are seen to be 'dog paddling' very fast. The middle legs work alternately with a sideways thrust downwards and backwards; they are slower than the back legs and the weakest pair. The back legs kick back alternately, one side out and then the other, with strong movements.

Flight

B. limosus is fully winged and specimens of *Bagous* have been discovered in sweep nets well away from aquatic habitats (P.J. Hodge, *pers. comm.*). After emerging in the spring the elytra are clean and able to open, which would permit dispersal by flight. Later in the year, the elytra get encrusted and probably cannot open to permit flight. I saw no evidence of any specimens attempting to fly, even when the aquaria were very warm, but this may be because they fly only at night.

Respiration

Aquatic beetles breathe gaseous air like terrestrial beetles, but develop special structural modifications to enable them to do so. In adults these are air stores, physical gills or plastrons. Little study has been made of respiration in the Bagoinae, but they appear to utilize both bubbles of air and plastrons when submerged under water. In his study of *Bagous*, Dieckmann (1964) cited the French coleopterist Ruter who made important studies on *B. subcarinatus* Gyllenhal in the 1930s. Ruter discovered that the undersides of the pro- and mesothorax were covered with an air bubble, which he presumed was able to fill the tracheal system with air. He observed that as the beetles were active on the food-plants in sunlight, oxygen bubbles which had formed through photosynthesis on the stems amalgamated with the air bubble on the underside of the beetles. He also thought that oxygen from inside the stems could escape onto the underside of the weevil whilst the beetles were eating the stems.

I observed small air bubbles on the joints of the legs, the tip of the abdomen, around the joints of the thorax and all joints of the body. The work of Ege (1915) (cited by Thorpe, 1950) showed that such bubbles can function as gills for a limited time if they are in contact with the spiracles. This air also helps the weevils to float to the surface if dislodged from their host-plant, where they can swim to another plant to submerge or fly. However, it is not certain whether the bubbles I observed were actually in touch with the spiracles.

One method by which *Bagous* obtain oxygen is through *plastron respiration* (Hinton, 1976; Thorpe, 1950; Thorpe & Crisp, 1949). In this form of respiration a thin layer of gas is spread over parts of the body and held in position by setae or scales. The setae or scales are able to resist pressure and thus the gas layer is not liable to loss by diffusion. The plastron hairs or scales also prevent wetting. Provided there is an adequate supply of oxygen in the water, a plastron layer can enable an insect to remain below the surface indefinitely, so long as the water pressure is not so great as to collapse the plastron. The plastron acts as a gill, absorbing oxygen from the water and transferring it to the spiracles

and tracheae. *B. limosus* is provided with a plastron system in which the beetle has an armour of interlocking scales, which in some regions of the body take an erect, brush-like form; the scales behind the eye look like tufts of hair (Hinton, 1976).

Even with careful and prolonged observation, I have never seen any grooming of the plastron layer or smearing of air bubbles by the beetle's legs. In the case of *Bagous* weevils, plastron respiration is supplemented by air bubbles and by actually leaving the water. This would be a necessity for survival in the oxygen-deficient shallow ponds and brackish ditches that these beetles inhabit (for in deoxygenated water the plastron would act in reverse and draw air from the insect to be dissolved in the water!)

Conclusion

These observations may help to clarify some aspects of the biology of *B. limosus*, especially their mode of swimming and the adult periods of life. I have shown that water temperature is not the only factor which prompts these beetles to swim, as it depends also on what activity period they are engaged in. This explains some of the difficulties encountered in finding these elusive beetles: they may be abundant one week in a part of a pond where they have aggregated for mating, and be absent another week when they have become secretive. Yet several aspects of the beetle's biology remain unclear and further research is required covering such topics as: flight; the duration of the different activity periods under natural conditions; nocturnal habits; the length of adult life; and larval habits. For several years I have searched intensively for larvae in New Forest ponds, but have been unsuccessful. I would encourage other coleopterists to study these fascinating weevils and perhaps undertake more research themselves.

Acknowledgements

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Mordellistena pseudoparvula Ermisch (Mordellidae) in East Sussex and West Kent

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Allen (1986) introduced *Mordellistena parvuloides* Ermisch as British on the strength of a single female discovered at Shooter's Hill, West Kent, in July 1985. In a recent paper (Owen, 1999), *M. pseudoparvula* Ermisch is introduced as new to Britain from a male identified from malaise-trap material collected in August 1983 at Santon Downham, West Norfolk. These two species have been synonymised by Horák (1996) and the reasons for adopting the name *M. pseudoparvula* for the species formerly known as *M. parvuloides* are discussed by Owen (*op. cit.*). The West Norfolk specimen pre-dates Allen's from Shooter's Hill by almost two years and is therefore the first known British record.

On 30.vii.1996 I swept a solitary female of a small *Mordellistena* Costa from a sheltered meadow just east of Pebsham Wood, near Bexhill-on-Sea, East Sussex (VC 14; TQ 766093). The host plant was most likely Creeping Thistle *Cirsium arvense* and this grew in profusion where the beetle was found. At first glance there appeared to be only a single apical spur on the hind tibia, which suggested that, of the known British species, it was either *M. acuticollis* Ermisch or *M. imitatrix* Allen. However, closer examination revealed a very short second hind-tibial spur on the left leg and therefore the specimen was provisionally determined as *M. parvuloides*. On 6.viii.1996 a second visit was made to the meadow but no further specimens were found.

On 7.vii.1997 the meadow near Pebsham Wood was visited specifically to search for males of the *Mordellistena*. Remarkably, on the very first thistle examined (an isolated and very stunted Spear Thistle *Cirsium vulgare* growing on a steep south-facing bank) a single *Mordellistena* was tapped into the sweep net. This proved to be another female with a very short second hind-tibial spur on one leg only, and was also provisionally identified as *M. parvuloides*. Another two hours were spent sweeping thistles in the meadow but no more examples of any *Mordellistena* species were found. The meadow was visited again on 21.vi.1998 and after a great deal of effort two examples of the desired *Mordellistena* were obtained by sweeping Creeping Thistle, which was even more abundant than in the previous two years. Both specimens proved to be males and the genitalia matched the illustrations of *M. pseudoparvula* by Ermisch (1969), leaving no doubt as to their identity.

On 26.vi.1998 a single male *M. pseudoparvula* was swept off thistles (*C. arvense* and *C. vulgare* were both present) behind the dam at Bewl Water, near Lamberhurst, West Kent (VC 16; TQ 683337).

Although there are only a few widely scattered records for *M. pseudoparvula*, it is suggested that the species may actually be quite widely distributed in East Anglia and southeast England, since it is difficult to find even in sites where it is known to occur. Furthermore, since no historical specimens have been reported, it is thought most likely to be a recent colonist, rather than a rare but long-established resident in Britain.

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The beetle fauna of flood refuse in Warwickshire (VC 38) in April 1998

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In early April 1998, during a period of prolonged and heavy rainfall, rivers throughout the Midlands burst their banks. The resulting floods, the worst for 150 years, caused havoc in mid and south Warwickshire, transforming roads into rivers and covering large tracts of our urban and rural landscapes. As the flood waters slowly subsided, a "tideline" of substantial refuse lay scattered across flood plains.

A number of coleopterists in Warwickshire seized the opportunity to investigate this rich harvest of flood refuse and in the period April 10th-28th, samples from 22 sites were taken (Table 1). Although the Rivers Arrow, Avon and Stour provided the main focus of attention, the Alne was also productive in the south. Reaches of other river systems in the north of the county were searched, but with limited success.

Locating the flood refuse was a matter of both luck and intuition. By following major stretches of the main river systems in the middle and south of the county, there was a strong likelihood of finding rafts of straw, grass, plastic and sewage deposited against the bases of hedges and fences or strewn across riverbanks. In some instances, these rafts were more than a metre deep. The most productive of them exhibited a gradient of moisture content such that the top layer was dry, but the bottom saturated.

The refuse was either sieved *in situ* or samples were bagged and transported home for sorting. The latter method, although more thorough, tended to be laborious and resulted in surplus biomass which had to be returned to its site of origin. The variation in collecting method, size, depth and moisture content of the refuse rafts at different sites, as well as recorder bias, means that a quantitative statistical analysis is rendered impossible. The following qualitative list of Coleoptera (Table 2) is remarkable, however, for the sheer number of species produced by this particular flooding phenomenon and also for the number of regionally and Nationally Scarce species that merit further attention. From a total of 1065 records (Table 1), no fewer than 283 species were identified. Of these 17 are Nationally Scarce (Notable), and two are of Red Data Book status as recognised in Hyman (1992, 1994).

The authors regret that time limitation, given the bulk of material involved, has resulted in the neglect of many of the aleocharine and ptiliid specimens present in samples and in incomplete data for the cryptophagids. A number of awkward specimens also await identification.

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Table 1: Details of sites visited

Code	Location	River System	Grid Ref.	Date	Recorder Initials	Species Totals (Sites)
A	Salford Priors	Arrow	SP 085529	13/4	SL	96
B	Shipston-on-Stour	Stour	SP 261406	16/4	SL	105
C	Barford	Avon	SP 266609	18/4	SL	82
D	Little Alne	Alne	SP 137607	19/4	SL	102
E	Studley	Arrow	SP 084631	19/4	SL	67
F	Bubbenhall Bridge	Avon	SP 3572	20/4	SL	3
G	Polesworth	Anker	SK 263022	20/4	SL	87
H	Duke End	Blythe	SP 2188	21/4	SL	9
I	Coleshill	Blythe	SP 2088	21/4	SL	8
K	Tidmington	Stour	SP 263388	22/4	SL	68
L	Welford Pastures	Avon	SP 1151	22/4	SL	53
M	Moat House Ground	Avon	SP 2055	23/4	SL	33
N	Brandon Marsh NR	Avon	SP 3875	27/4	SL	11
O	Eathorpe	Leam	SP 3969	14/4	TGF/GWF	44
P	Hampton Lucy	Avon	SP 2557	19/4	TGF/GWF	22
Q	Welford-on-Avon	Avon	SP 144531	21/4	PC	47
R	Bretford	Avon	SP 4276	18/4	TGF/GWF	19
S	Southam	Leam	SP 4261	10/4	IMc	65
T	Pailton	Smite Brook	SP 4682	22/4	TGF/GWF	19
U	Welches Meadow, Leamington Spa	Leam	SP 324657	28/4	PC	70
W	Bidford-on-Avon	Arrow	SP 083514	21/4	PC	16
X	Alcester	Arrow	SP 092574	11/4	SW	39

Total No. of records: 1,065

Recorders: SL, Steve Lane; TGF, Trevor Forsythe; IMc, Ian McClenaghan; PC, Peter Cooke; GWF, Gillian Forsythe; SW, Shirley Wynne.

Note: Welford Pastures (site L) is in the modern county of Warwickshire, but under the vice-county system it is a few hundred metres or so into VC 33 (Gloucestershire). However, it is more than likely that the refuse worked had been washed in from VC 38, as the vice-county boundary follows the River Avon in this area.

Discussion

The authors consider that the following species have made the most significant contribution to the local recording schemes:

CARABIDAE

Bembidion clarki Dawson Notable B

A specimen of *B. clarki*, the first recorded in the county, was sieved from flood refuse at Welches Meadow, a grassland site which lies in the floodplain of the River Leam and which is subject to occasional flooding. It is possible that a small marshy area on the site, shaded marshy pools on the nearby Leam Valley Local Nature Reserve, or the margins of the backwaters along the course of the river may provide suitable habitats for this species.

Pterostichus anthracinus (Panzer) Notable B

A male of this hygrophilous species was sieved from a deep raft of refuse at Barford. The flood refuse here consisted mainly of reed stems and twigs. It had been deposited very near the bank of the River Avon and was partially saturated at the time of sampling. *P. anthracinus* has been recorded elsewhere in Warwickshire: from Alcester, where both Blatch and Ellis noted it at the turn of the century (Ellis, 1904), and from the Moat House Ground, Stratford-upon-Avon (SP 2055), where a male was pitfall-trapped by SL at the margin of a shallow, reed fringed pool near the River Avon on 7.iii.1997.

Pterostichus macer (Marsham)

Before the flood-refuse sampling programme, this species was considered to be very local in Warwickshire and rarely recorded, probably because of its subterranean habits. The few records of this elusive beetle referred to individuals taken near rivers or in gardens. Despite the innovative collecting techniques of W.G. Blatch (M. Denton, *pers. comm.*), at the turn of the century the species was considered 'scarce' in the county (Ellis, 1904).

Its appearance at 12 of the 22 sampling sites, in no fewer than ten 10 km grid squares, was quite unexpected. Although we can do no more than speculate, it appears that the flooding, by creating so much standing water, must have temporarily forced this species from its underground refuges. It is noteworthy that the beetle only occurred in ones or twos where it was found, except at Welford Pastures where 11 were counted, and at Bretford, where seven were counted, in relatively small refuse samples.

Amara anthobia Villa

A single specimen, the first known from Warwickshire, was sieved from refuse from Hampton Lucy. This ground beetle, thought to be a recent immigrant to Britain, is usually associated with dry, sandy soils. The flooding in the Charlecote area probably washed it down river from sand and gravel quarry workings along with *Metabletus foveatus* (Fourcroy) (Carabidae), which was also in this sample.

Acupalpus exiguus Dejean Notable B

Four specimens of this small piceous ground beetle were sieved from flood refuse at Welches Meadow. The species probably inhabits the margins of the River Leam and its backwaters where the soil is marshy and rich in vegetation. The only other occurrence of this species in Warwickshire is from Coleshill Bog where Blatch found it in sphagnum moss in the late 19th Century (Ellis, 1904).

HYDROPHILIDAE

Cercyon granarius Erichson RDB3

Two specimens were taken from a shallow raft of flood refuse, predominantly grass and straw, lying on grazed pasture alongside the River Arrow near Studley. Identification was kindly confirmed by Garth Foster, who retained one of the specimens; the other specimen has been placed in the collections of the Herbert Art Gallery and Museum, Coventry. This record augments those published for North Somerset, East Kent, Surrey and Oxfordshire, and brings the known distribution of this species to a total of eight 10 km National Grid squares in England since the species was rediscovered in 1980 (Foster, in prep.).

This species is considered to be associated with mainly stagnant water where it lives among decomposing plant debris. Locally the River Arrow has a swift flow over gravel and is, itself, unlikely to provide a suitable habitat. However, this section of the Arrow Valley does contain backwaters upstream of the sampling site and these will be searched in the future to ascertain if *C. granarius* is established.

Cercyon tristis (Illiger) Notable B

This second Warwickshire record refers to five specimens sieved from flood refuse at Welches Meadow. The previous record of this species was from the lake edge at Abbey Fields, Kenilworth (SP 2772) where several, crawling on mud, were taken by SL on 28.iv.1997.

HISTERIDAE

Saprinus virescens (Paykull) RDBK

Hyman (1992) lists 22 counties for published pre-1970 records of this formerly widespread species which has declined drastically. To these can be added Warwickshire, where PC took a specimen from a sandy bank at Little Packington Gravel Pits (SP 2085) on 31.v.1958, and Worcestershire, where specimens were obtained in the vicinity of Areley in 1932 and 1933 by G.H. Ashe and at Hartlebury in 1930 and 1932 by G.H. Ashe and C.E. Stott. The Worcestershire specimens are in the H.W. Daltry collection at the Herbert Art Gallery and Museum, Coventry.

An unexpected find was a specimen of this handsome beetle in flood refuse, comprising small twigs and reed debris, at Welford Pastures (SP 118514) near the River Avon. What makes this record particularly interesting is that it appears to be the first for this species to have been published in the British Isles for over 28 years.

STAPHYLINIDAE

Platystethus nodifrons Mannerheim Notable

A specimen of this mud-burrowing rove beetle, sieved from refuse at Welches Meadow, is the second record for Warwickshire. A previous record is for Knowle (Ellis, 1904).

ELATERIDAE

Agrypnus murinus (Linnaeus) Regionally Scarce

Although this click beetle is nationally widespread, and the Elateridae has been well recorded in the county, its apparent absence from Warwickshire since the turn of the century (Ellis, 1904) merits mention here. A single dead and flood-damaged specimen was sieved from refuse at Welford-on-Avon.

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Table 2: Beetles from flood refuse: species list

Carabidae	
Leistus ferrugineus (Linnaeus)	B
Leistus spinibarbis (Fabricius)	O
Notiophilus biguttatus (Fabricius)	B D G K L O R S U X
Notiophilus substriatus Waterhouse	C
Loricera pilicornis (Fabricius)	C
Clivina fossor (Linnaeus)	A B C D G K L O P Q U
Trechus obtusus Erichson	D E
Trechus quadristriatus (Schrank)	B C K L O Q
Bembidion lampros (Herbst)	A B C D E G K L O P W
Bembidion properans Stephens	G O Q
Bembidion dentellum (Thunberg)	K
Bembidion tetracolum Say	E I
Bembidion quadrimaculatum (Linnaeus)	A C D G K L M O
**Bembidion clarki* Dawson (Nb, Nr, 1st. CR)	U
**Bembidion fumigatum* (Duftschmid) (Nb, Nr)	C
Bembidion obtusum Serville	A B C D E G K L O P Q S X
Bembidion harpaloides Serville	A B D E Q T W
Bembidion aeneum Germar	B G
Bembidion biguttatum (Fabricius)	B C D G K L O Q U
Bembidion guttula (Fabricius)	A B D E G I O Q R U X
**Tachys parvulus* (Dejean) (Nb)	Q
Stomis pumicatus (Panzer)	A C D E L O S T U
**Pterostichus anthracinus* (Panzer) (Nb, Nr)	C
Pterostichus cupreus (Linnaeus)	A B C D E G K L M O P Q R S
Pterostichus macer (Marsham)	A C D E F G L M P Q R S
Pterostichus madidus (Fabricius)	K M
Pterostichus melanarius (Illiger)	D L
Pterostichus nigrita (Paykull)	G
Pterostichus strenuus (Panzer)	B C D E G H I K L P Q R S T U
Pterostichus vernalis (Panzer)	A C D G K O U
Abax parallelepipedus (Piller & Mitterpacher)	C
Calathus fuscipes (Goeze)	M
Calathus melanocephalus (Linnaeus)	B C D G M T
Agonum albipes (Fabricius)	A C D E O Q R S
Agonum dorsale (Pontoppidan)	A C D E G
Agonum fuliginosum (Panzer)	A C D E G H K
Agonum micans Nicolai	G H
Agonum moestum (Duftschmid)	K
Agonum obscurum (Herbst)	A B C D E M U
Agonum thoreyi Dejean	C D G
Amara aenea (De Geer)	A E G L O P Q R S U
**Amara anthobia* Villa (Nr, 1st. CR)	P
Amara apricaria (Paykull)	A C M
Amara aulica (Panzer)	C
Amara communis (Panzer)	D U
Amara familiaris (Duftschmid)	A B C D E G K M O P Q R S T W X
Amara lunicollis Schiödte	L R
Amara ovata (Fabricius)	B C D E
Amara plebeja (Gyllenhal)	C G K L O Q S
Amara similata (Gyllenhal)	B C D G L P R S
Harpalus rufipes (De Geer)	A C G I L R U
Harpalus rufibarbis (Fabricius)	A D G K L M P S
Harpalus affinis (Schrank)	A B C D G K O Q S
**Harpalus latus* (Linnaeus) (Nr)	K R

Trichocellus placidus (Gyllenhal)	G
Bradycellus harpalinus (Serville)	B E
Bradycellus verbasci (Duftschmid)	B Q U
Stenolophus mixtus (Herbst)	C G L S
**Acupalpus consputus* (Duftschmid) (Nb)	C L M
Acupalpus dubius Schilsky	A B C D G K L M N Q U
**Acupalpus exiguus* Dejean (Nb, Nr, 1st. conf. CR)	U
Acupalpus meridianus (Linnaeus)	A C G K U
Badister bipustulatus (Fabricius)	A B C D E G H K O U
Chlaenius vestitus (Paykull)	D
Demetrias atricapillus (Linnaeus)	A B C D E G K L O Q U W X
Dromius linearis (Olivier)	B C D E G I M O U S
Dromius melanocephalus Dejean	A E G
Microlestes maurus (Sturm)	L Q
Metabletus foveatus (Fourcroy)	P
Metabletus obscuroguttatus (Duftschmid)	A B D E L M O Q U X
Haliplidae	
Haliplus flavicollis Sturm	C
Haliplus lineatocollis (Marsham)	S
Dytiscidae	
Ilybius fuliginosus (Fabricius)	D
Hydrophilidae	
Helophorus obscurus Mulsant	A
Sphaeridium bipustulatum Fabricius	B K S X
Sphaeridium lunatum Fabricius	K M S
Sphaeridium scarabaeoides (Linnaeus)	B C D F S T
Cercyon atomarius (Fabricius)	B G
**Cercyon convexiusculus* Stephens (Nb)	N U
**Cercyon granarius* Erichson (RDB3, Nr, 1st. CR)	E
Cercyon haemorrhoidalis (Fabricius)	D S
Cercyon lateralis (Marsham)	D K T
**Cercyon lugubris* (Olivier) (Nb)	B D X
Cercyon melanocephalus (Linnaeus)	A B D
Cercyon pygmaeus (Illiger)	S
**Cercyon tristis* (Illiger) (Nb, Nr)	U
**Cercyon ustulatus* (Preyssler) (Nb)	S
Megasternum obscurum (Marsham)	B D E G K S U X
Crytopleurum minutum (Fabricius)	B S X
Anacaena globulus (Paykull)	A D E N
Anacaena limbata (Fabricius)	U
Laccobius striatulus (Fabricius)	C X
**Helochares lividus* (Forster) (Nb)	D
Histeridae	
Abraeus globosus (Hoffmann)	E
**Saprinus virescens* (Paykull) (RDBK)	L
Carcinops pumilio (Erichson)	U
Hydraenidae	
**Ochthebius bicolon* Germar (Nb)	S
Ptiliidae	
Ptenidium pusillum (Gyllenhal)	W
Leiodidae	
Agathidium varians Beck	A S U
Ptomaphagus medius Rey	B D L M
Ptomaphagus subvillosus (Goeze)	B D G
Nargus velox (Spence)	B D E L O T

Catops fuliginosus Erichson	G K
Catops nigricans (Spence)	B T U
Scydmaenidae	
Stenichnus collaris (Müller & Kunze)	E
Scydmaenus tarsatus Müller & Kunze	K
Staphylinidae	
Micropeplus staphylinoides (Marsham)	K
Metopsia retusa (Stephens)	U
Proteinus ovalis Stephens	A
Anthobium atrocephalum (Gyllenhal)	A B
Anthobium unicolor (Marsham)	A Q
Olophrum piceum (Gyllenhal)	B G
Lesteva heeri Fauvel	B D E L T
Lesteva longoelytrata (Goeze)	B E
Omalium italicum Bernhauer	L Q
Omalium rivulare (Paykull)	G W
Thinodromus arcuatus (Stephens)	A B D
Carpelimus bilineatus Stephens	B E
Carpelimus elongatulus (Erichson)	A B C N Q U W
Carpelimus sp.	A N Q S
Platystethus nitens (Sahlberg)	A K S X
**Platystethus nodifrons* Mannerheim (N, Nr)	U
Platystethus sp.	N
Anotylus rugosus (Fabricius)	A D E G K L O Q U W
Anotylus tetracarinatus (Block)	A B X
Stenus bimaculatus Gyllenhal	A B D H O S
Stenus boops Ljungh	A
Stenus brunnipes Stephens	E X
Stenus clavicornis (Scopoli)	B D E G
Stenus fulvicornis Stephens	S U
Stenus juno (Paykull)	I
Stenus ossium Stephens	C S
Stenus pallipes Gravenhorst	U
Stenus picipes Stephens	B
Stenus pusillus Stephens	B U
Stenus sp.	A S
Lathrobium brunnipes (Fabricius)	C K S U
Lathrobium fulvipenne (Gravenhorst)	A C D E G L M O P R S T
Lathrobium geminum Kraatz	L
Achenium depressum (Gravenhorst)	A K L S
**Achenium humile* (Nicolai) (Nb)	O
**Sunius melanocephalus* (Fabricius) (N)	Q
Sunius propinquus (Brisout)	A B C D E G K L M Q S U W X
Astenus lyonessius (Joy)	C K
Rugilus orbiculatus (Paykull)	B C D G K
Rugilus rufipes Germar	B D E G K O S U X
Gyrohypnus angustatus Stephens	A B E
Gyrohypnus fracticornis (Müller)	S
Xantholinus jarrigei Coiffait	G
Xantholinus linearis (Olivier)	C K S U
Xantholinus longiventris Heer	B C D E G K L S U
Philonthus cognatus Stephens	A B C D E G K O P U X
Philonthus concinnus (Gravenhorst)	D K
Philonthus cruentatus (Gmelin in Linnaeus)	D K
Philonthus fimetarius (Gravenhorst)	B
Philonthus intermedius (Boisduval & Lacordaire)	C F G
Philonthus laminatus (Creutzer)	D E G T

Philonthus marginatus (Ström)	G
Philonthus sanguinolentus (Gravenhorst)	E K
Philonthus succicola Thomson	T
Philonthus umbratilis (Gravenhorst)	S
Philonthus varians (Paykull)	B G S U
Philonthus varius (Gyllenhal)	B C D E G K O U W X
Gabrius nigritulus (Gravenhorst)	A L
Gabrius pennatus Sharp	A D U
Ocypus brunnipes (Fabricius)	C
Ocypus olens (Müller)	M
Ontholestes murinus (Linnaeus)	K
Quedius curtipennis Bernhauer	B C K O S U
Quedius fuliginosus (Gravenhorst)	E
Quedius maurorufus (Gravenhorst)	T
Quedius molochinus (Gravenhorst)	M
Quedius nitipennis (Stephens)	C
Quedius scintillans (Gravenhorst)	S
Quedius semiaeneus (Stephens)	C
Quedius semiobscurus (Marsham)	G
Mycetoporus longulus Mannerheim	G
Mycetoporus splendidus (Gravenhorst)	D G K L
Sepedophilus marshami (Stephens)	B C D G K L
Sepedophilus nigripennis (Stephens)	B D E U
Tachyporus chrysomelinus (Linnaeus)	B C D H K W
Tachyporus dispar (Paykull)	A C D E G N W X
Tachyporus hypnorum (Fabricius)	A B C D E G H I K L M O S U X
Tachyporus nitidulus (Fabricius)	A B C D E G K U W X
Tachyporus obtusus (Linnaeus)	A B C E G K L T
Tachyporus pallidus Sharp	A D H U
Tachyporus pusillus Gravenhorst	A B C D G S U X
Tachyporus solutus Erichson	B K
Tachinus signatus Gravenhorst	B C D E G L M O R S T U
Bolitochara bella Märkel	A
Drusilla canaliculata (Fabricius)	A B C D E G K L M O S
Aleochara bipustulata (Linnaeus)	B
Aleochara cuniculorum Kraatz	B
Aleochara intricata Mannerheim	K
Aleochara lanuginosa Gravenhorst	A B D E L
Pselaphidae	
Tychus niger (Paykull)	K M U
**Rybaxis laminata* (Motschulsky) (1st. conf. CR)	N
Rybaxis longicornis (Leach)	N
Scarabaeidae	
Aphodius ater (De Geer)	C D R S
Aphodius fimetarius (Linnaeus)	C P R T
Aphodius fossor (Linnaeus)	A C D O P
Aphodius granarius (Linnaeus)	A C D E G K L M O P Q R
Aphodius luridus (Fabricius)	C L M O
Aphodius prodromus (Brahm)	B C D P R S
Aphodius pusillus (Herbst)	B G
Aphodius sphacelatus (Panzer)	A B D G O
Clambidae	
Clambus armadillo (De Geer)	U
Byrrhidae	
Byrrhus pilula (Linnaeus)	B C D E G L M O Q R S

Heteroceridae	
Heterocerus marginatus (Fabricius)	B
Dryopidae	
Dryops ernesti des Gozis	U
Elateridae	
**Agrypnus murinus* (Linnaeus) (Nr)	Q
Hypnoidus riparius (Fabricius)	D G I
Kibunea minuta (Linnaeus)	D
Agriotes acuminatus (Stephens)	X
Agriotes lineatus (Linnaeus)	A B C E G K L O Q U
Agriotes obscurus (Linnaeus)	A B C D E G K M O Q S T U
Agriotes sputator (Linnaeus)	A B C D E G K L O P Q S U
Throscidae	
**Trixagus obtusus* (Curtis) (Nr)	S
Nitidulidae	
Brachypterus glaber (Stephens)	U
Meligethes aeneus (Fabricius)	B D G X
Meligethes nigrescens Stephens	A
Meligethes pedicularius (Gyllenhal)	X
Epuraea aestiva (Linnaeus)	A C E
Omosita colon (Linnaeus)	D
Cryptophagidae	
Atomaria fuscata (Schoenherr)	A B Q
Atomaria mesomela (Herbst)	N
Atomaria nitidula (Marsham)	B X
Atomaria ruficornis (Marsham)	A B G S X
Atomaria fuscicollis Mannerheim	Q
Atomaria sp.	S X
Ephistemus globulus (Paykull)	B M X
Phalacridae	
Stilbus testaceus (Panzer)	A B C D E G K L M O S T U X
Coccinellidae	
Rhyzobius litura (Fabricius)	A C S U
Scymnus haemorrhoidalis Herbst	M
Anisosticta novemdecimpunctata (Linnaeus)	G
Tytthaspis sedecimpunctata (Linnaeus)	A B C D E G H K L M Q U W X
Adalia bipunctata (Linnaeus)	B Q
Coccinella septempunctata Linnaeus	A C Q U
Calvia quattuorodecimguttata (Linnaeus)	D
Propylea quattuordecimpunctata (Linnaeus)	B D U X
Psyllobora vigintiduopunctata (Linnaeus)	A B D U
Endomychidae	
Endomychus coccineus (Linnaeus)	E
Lathridiidae	
Stephostethus lardarius (De Geer)	G
Aridius bifasciatus (Reitter)	D G Q
Corticaria impressa (Olivier)	D
Corticaria punctulata Marsham	A
Cortinicara gibbosa (Herbst)	A B D E Q X
Tenebrionidae	
**Scaphidema metallicum* (Fabricius) (Nb)	B D E G
Anthicidae	
Anthicus antherinus (Linnaeus)	D G L M

Cerambycidae	
Grammoptera ruficornis (Fabricius)	S
Chrysomelidae	
Gastrophysa polygoni (Linnaeus)	A L Q
Phaedon armoraciae (Linnaeus)	D P
Phaedon cochleariae (Fabricius)	A G
Phaedon tumidulus (Germar)	B D S
Hydrothassa marginella (Linnaeus)	G
Plagiodera versicolora (Laicharting)	B C G P Q S
Phyllotreta atra (Fabricius)	A
**Phyllotreta cruciferae* (Goeze) (Nb)	U
Phyllotreta exclamationis (Thunberg)	U
Phyllotreta ochripes (Curtis)	A Q S
**Longitarsus parvulus* (Paykull) (Na)	B U X
Altica lythri Aubé	A B D K O P
Chalcoides aurata (Marsham)	A B C L X
Chalcoides plutus (Latreille)	B G X
Chaetocnema hortensis (Fourcroy)	B K U X
Psylliodes picina (Marsham)	B
Cassida flaveola Thunberg	Q X
Cassida rubiginosa Müller	Q
Cassida vibex Linnaeus	E
Attelabidae	
Rhynchites aequatus (Linnaeus)	Q
Brentidae	
Protapion assimile Kirby	A
Protapion dichroum Bedel	A B X
Protapion nigritarse Kirby	D G
Protapion trifolii (Linnaeus)	A
Perapion hydrolapathi (Marsham)	A B S
Apion frumentarium (Linnaeus)	B E K
Eutrichapion vorax Herbst	A
Curculionidae	
Phyllobius pyri (Linnaeus)	A
Barypeithes araneiformis (Schrank)	A B E K U W
Barypeithes pellucidus (Boheman)	A U
Barynotus obscurus (Fabricius)	A B
Sitona lineatus (Linnaeus)	A D K
Notaris acridulus (Linnaeus)	U
Ceutorhynchus assimilis (Paykull)	B
Ceutorhynchus quadridens (Panzer)	S
Ceutorhynchus timidus Weise	D
Tychius picirostris (Fabricius)	A D

Key: letters A-X=site code; * = species with "status", as follows: RDB = Red Data Book; N, Na, Nb = Nationally Notable; Nr = regionally notable; 1st. CR = first county record.

The dead-wood beetles of Croome Park, Worcestershire

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Introduction

Croome Park is a recently acquired National Trust property in South Worcestershire. It is well populated by mature trees, mainly oak *Quercus*, which once formed a feature of a landscape park laid out by Capability Brown in the 18th century (Pl. 1). Since World War 2, much of the park has been converted to arable cultivation. The estate also contains small blocks of woodland with much younger trees. The purpose of this paper is to collate records of saproxylic beetles that have been recorded there, starting with the preliminary entomological survey in 1995, and to discuss the importance of the site for nature conservation.

Pl. 1: Croome Park, Worcestershire. *K. N. A. Alexander*

Sources of records

Records are taken from the following surveys:

1. K.N.A. Alexander & A.P. Foster: 12 & 13.vi.1995.
2. D.A. Lott: 16.v., 30.v., 6.vi. & 26.vi.1996 using the sampling methods described in Lott (1995).
3. A.B. Drane: 21.viii.1996 & 28.v.1997.

Summary of records

128 saproxylic species of beetles have been recorded including one species, *Mesosa nebulosa* (Fabricius), which was recorded just outside the boundary of the estate, but which probably occurs within the Park. They are listed in the appendix together with their national conservation status (Hyman, 1992, 1994) and their presumed larval habitat, based on Hyman (1992, 1994), Johnson (1993), Koch (1989-1992) and personal observation. Also given are the sampling method used to collect them and the tree species on which they were found.

Table 1 shows that a large proportion of the saproxylic species recorded are of national importance for nature conservation. Two other arboreal, nationally scarce species have also been recorded, both occupants of specialised ecological niches. *Anthribus fasciatus* (Forster) (Na) is a predator of scale insects on bark, while *Curculio villosus* Fabricius (Nb) is an inquiline in oak apple galls.

Table 1: Total numbers of saproxylic species with national conservation status recorded at Croome Park up to August 1996. Status taken from Hyman (1992, 1994).

National Status	*Criteria for status*	*No. of Species at Croome*
RDB1	Endangered	3
RDB2	Vulnerable	1
RDB3	Rare (present in <15 10 km squares in Britain)	6
RDBI	Of RDB status but further information is required for placement in a precise category	1
RDBK	Possibly of RDB status but further information is required for confirmation	2
Na	Nationally scarce (present in <30 10 km squares in Britain)	4
Nb	Nationally scarce (present in <100 10 km squares in Britain)	23
N-	Nationally scarce but further information is required for placement in a precise category	2

The Index of Ecological Continuity (IEC; see Harding & Alexander, 1994) is calculated using indicators of long-term continuity of dead-wood habitats in ancient woodlands (Harding & Rose 1986). Croome Park scores an IEC of 64 which places it within the twelve most important sites in Britain for beetles of ancient broadleaf woodland (Table 2). However, comparison of the Croome list with those from other known sites of

national importance is misleading, because they have received far greater attention from entomologists. Croome Park may rank even higher using an index which is not sensitive to sampling effort (see e.g. Fowles, 1997). In the west midlands, only two sites have a higher IEC than Croome (Table 3). Both of these sites have been investigated much more thoroughly.

Table 2: The top fifteen British ancient broadleaf woodland sites ranked according to the Index of Ecological Continuity. Data from Harding & Alexander (1994), Hammond & Harding (1991), Whitehead (1996a) and Reid (1996).

Site	IEC
Windsor Great Park & Forest	233
New Forest	183
Moccas Park	129
Richmond Park	116
Bredon Hill	112
Epping Forest	99
Ashtead Common	95
Sherwood Forest	94
Burnham Beeches	91
Clumber Park	65
Croome Park	64
Calke Park	64
Arundel Park	63
Knole Park	62
Wytham Woods	60

Table 3: Ancient broadleaf woodland sites in the West Midlands ranked according to the Index of Ecological Continuity. Data from Harding & Alexander (1994), Whitehead (1996b) and unpublished lists.

Site	*County*	*IEC*
Moccas Park	Herefordshire	129
Bredon Hill	Worcestershire	112
Croome Park	Worcestershire	64
Blenheim Park	Oxfordshire	40
Croft Castle	Herefordshire	38
Cirencester Park Woods	Gloucestershire	36
Attingham Park	Shropshire	35
Forest of Dean	Gloucestershire	33
Brampton Bryan Park	Herefordshire	28

Ischnoglossa obscura Wunderle has not previously been recorded from the west midlands, although the British species of this genus are still under taxonomic investigation and the precise identity of this taxon and its distribution remain to be confirmed. Further species are only represented by very few records in the west midlands. *Globicornis nigripes* (Fabricius) was found in the present surveys in 1995 and 1996. The first record was published without naming the precise locality by Foster (1996) who gave details of previous records in the area. There are old records from Oxfordshire for *Eutheia formicetorum* Reitter (Walker, 1915) and *Trinodes hirtus* (Fabricius) (Hyman, 1992), the latter being also represented by modern records from Gloucestershire (Alexander, 1992) and Worcestershire (unpublished). *Atomaria morio* Kolenati has been recorded from Cannock Chase in Staffordshire (Johnson, 1993). *Euryusa sinuata* Erichson has recently been recorded in the Teme valley (Whitehead, 1996b). *Xantholinus angularis* Ganglbauer has only been recorded from the nearby site of Bredon Hill (Whitehead, 1996a). Croome is only 10 km from the internationally important site at Bredon Hill National Nature Reserve. However, the two sites are quite different in character: Croome is at a lower elevation in the river valley; the composition of mature tree species is also different with oak being much more prevalent at Croome. There also appear to be differences in species composition between the beetle communities. Ten species of national conservation status are known from Croome, but not Bredon. These include the Red Data Book (RDB; Shirt, 1987) species *Ampedus cardinalis* (Schiödte), *Mesosa nebulosa* and *Tropideres sepicola* (Fabricius).

Table 4 shows that the majority of RDB species are associated with decaying heartwood and tree hollows, habitats which are only found in mature trees. Over half of the species associated with these habitats have a national conservation status. The mature oaks and beeches *Fagus* at Croome are a key resource for these rare species. In addition, there is a significant amount of conservation interest associated with attached dead branches, both in terms of numbers of species and rarity. Once again, this interest is primarily associated with the mature trees, particularly oaks. Of the rare species associated with dead branches, only *Bibloporus minutus* Raffray (beech), *Hadrobregmus denticollis* (Creutzer) (Field Maple *Acer campestre*), *Lissodema quadripustulata* (Marsham) (ash *Fraxinus* and elm *Ulmus*) and *Anaglyptus mysticus* (Linnaeus) (hawthorn *Crataegus*) were not found on oak.

Table 4: Numbers of rare species categorised by larval habitat

Presumed larval habitat	*Red Data Book spp.*	*Nationally scarce spp.*	*Total no. spp.*
decaying heartwood and tree hollows	8	4	23
fungal fruiting bodies and slime moulds	0	4	18
old decayed logs often lying on ground	0	0	4
in sapwood and bark often in branches and twigs	5	21	82
unclassified	0	0	1

Discussion

The wealth of rare beetles at Croome Park and its consequent value for nature conservation is characteristic of sites such as mediaeval deer parks or old forests with a long history of suitable management. The earlier history of Croome Park is unclear at present. However, there are no known records of emparkment at Croome before the 17th Century (C. Beresford, *pers. comm.*), although one or two older trees probably pre-date the landscape park and could once have been a component of a type of pasture-woodland comprising rough grazing land with scattered pollards, possibly a manorial waste or grazing marsh system. It is therefore difficult to establish the normal link between a rich deadwood fauna and ancient pasture woodland.

A noticeable feature of the countryside around Croome is the density of mature trees in hedgerows and fields. There is the intriguing possibility that Croome Park is part of a wider ancient landscape containing sufficient populations of mature trees for these rare insects to be dispersing and colonising new sites over a wide area. Additional evidence for this conjecture comes from the proximity of the rich fauna at Bredon Hill which could be connected to this network of mature trees. The discovery of such a landscape with mobile populations of rare insects would be of great importance to the conservation of species which over much of their range are in danger of suffering local extinctions in isolated habitat fragments (McLean & Speight, 1993).

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Appendix: Dead-wood beetles recorded at Croome Park.

Key to symbols:

Conservation Status R1 = RDB1, Endangered; R2 = RDB2, Vulnerable; R3 = RDB3, Rare; RI = RDBI, Red Data Book status indeterminate; RK = RDBK, insufficiently known; Na, Nb & N- = Nationally Scarce.

Methods of collection bt = beaten; fg = sieved from fungal fruiting body; gt = sieved from grass trap; lb = under bark; rw = extracted from rotten wood.

Tree species Ac = Field Maple *Acer campestre*; Ap = Sycamore *Acer pseudoplatanus*; Ca = hornbeam *Carpinus*; Cr = hawthorn *Crataegus*; Fa = beech *Fagus*; Fr = ash *Fraxinus*; In = indeterminate; Qu = oak *Quercus*; Sf = willow *Salix*; Ti = lime *Tilia*; Ul = elm *Ulmus*.

Species	*Conservation Status*	*Larval habitat*	*Methods of collection*	*Tree species*
Carabidae				
Dromius meridionalis Dejean		bark	bt	Ac,Cr,Qu,Sf
Dromius quadrimaculatus (Linnaeus)		bark	bt	Ac,Qu
Dromius quadrinotatus (Zenker)		bark	bt	Ac,Fr,Qu,Sf
Histeridae				
Plegaderus dissectus Erichson	Nb	heartrot	rw	Fa,In
Abraeus globosus (Hoffmann)		heartrot	gt,rw	Fa,Fr,Qu,In
Paromalus flavicornis (Herbst)		bark	lb,gt,rw	Fa,Qu
Ptiliidae				
Ptinella errabunda Johnson		heartrot	rw	Fa,Qu
Scydmaenidae				
Eutheia formicetorum Reitter	R1	heartrot	rw	Fa
Stenichnus godarti (Latreille)	R3	heartrot	rw	Fa,In
Scaphidiidae				
Scaphisoma agaricinum (Linnaeus)		heartrot	gt,rw	Fr,In
Staphylinidae				
Dropephylla ioptera (Stephens)		bark	bt,rw	Ap,Cr,Fa
Dropephylla vilis (Erichson)		bark	bt	Cr
Stagonium quadricorne Kirby		bark	lb	Qu
Xantholinus angularis Ganglbauer	Na	tree hollows	rw	Qu
Gabrius splendidulus (Gravenhorst)		rotten bark	lb,rw	Fa,Qu
Quedius cruentus (Olivier)		bark	bt,lb	Cr,Qu
Sepedophilus lusitanicus Hammond		rotten logs	gt,rw	Fr,Qu
Sepedophilus marshami (Stephens)		rotten logs	gt,rw	Fr,Qu

Gyrophaena affinis Mannerheim		fungi	fg	Fa
Leptusa fumida Kraatz		bark	lb	Qu
Euryusa sinuata Erichson	RI	ant nests	gt,rw	Qu
Bolitochara bella Märkel		fungi	fg	In
Bolitochara lucida (Gravenhorst)		fungi	fg,rw	Fa,In
Atheta liturata (Stephens)		fungi	fg	Fa
Ischnoglossa obscura Wunderle		bark	lb	Q
Pselaphidae				
Bibloporus minutus Raffray	Nb	bark	rw	Fa
Euplectus infirmus Raffray		heartrot	rw	Fa,Qu,In
Euplectus karsteni (Reichenbach)		heartrot	rw	Fa,Qu
Euplectus piceus Motschulsky		heartrot	lb	Qu
Lucanidae				
Sinodendron cylindricum (Linnaeus)		heartrot	in flight	
Buprestidae				
Agrilus angustulus (Illiger)	Nb	bark	bt	Qu
Agrilus laticornis (Illiger)	Nb	bark	bt	Qu
Elateridae				
Ampedus cardinalis (Schiödte)	R2	heartrot	lb	Qu
Melanotus villosus (Fourcroy)		heartrot	bt,lb,rw	Qu,In
Stenagostus rhombeus (Olivier)		rotten bark	lb	Fa,Qu
Denticollis linearis (Linnaeus)		bark	rw	Fa
Throscidae				
Aulonothroscus brevicollis (Bonvouloir)	R3	heartrot	bt	Qu
Cantharidae				
Malthinus balteatus Suffrian	Nb	dead branches	bt	(elder)
Malthinus flaveolus (Herbst)		dead branches	bt	Fa,Qu
Malthinus frontalis (Marsham)	Nb	dead branches	bt	Qu
Malthinus seriepunctatus Kiesenwetter		dead branches	bt	Fr,Qu
Malthodes crassicornis (Mäklin)	R3	heartrot	bt	Qu
Malthodes marginatus (Latreille)		dead branches	bt	Ap,Cr,Qu,Ul
Malthodes minimus (Linnaeus)		dead branches	bt	Fa,Fr,Qu,Sf
Dermestidae				
Globicornis nigripes (Fabricius)	R1	thick bark	bt	(hogweed)
Megatoma undata (Linnaeus)	Nb	bark	rw	Qu
Ctesias serra (Fabricius)	Nb	thick bark	lb	Qu
Trinodes hirtus (Fabricius)	R3	thick bark	bt	Qu
Anobidae				
Ptinomorphus imperialis (Linnaeus)	Nb	dead boughs	bt	Qu
Xestobium rufovillosum (De Geer)		dry sapwood	rw	Qu
Hemicoelus fulvicornis (Sturm)		dead boughs	bt	Ac,Cr,Qu,Sf
Anobium punctatum (De Geer)		dry sapwood	bt	Qu
Hadrobregmus denticollis (Creutzer)	Na	dry dead wood	bt	Ac
Ptilinus pecticornis (Linnaeus)		dry sapwood	bt	Fr
Dorcatoma chrysomelina Sturm		heartrot	bt	Qu
Ptinidae				
Ptinus fur (Linnaeus)		bird nests	gt	Q
Cleridae				
Opilo mollis (Linnaeus)	Nb	dead boughs	bt	Qu
Korynetes caeruleus (De Geer)	Nb	dry sapwood?	bt	Qu

Melyridae				
Aplocnemus pini Redtenbacher	Nb	bark	bt	Qu
Dasytes aeratus Stephens		dead boughs	bt	Ac,Cr,Qu
Malachius bipustulatus (Linnaeus)		dead branches	bt	Ap,Cr,Qu
Rhizophagidae				
Rhizophagus bipustulatus (Fabricius)		bark	lb	Qu
Cucujidae				
Cryptolestes ferrugineus (Stephens)		bark	bt,lb	Cr,Qu
Cryptophagidae				
Atomaria morio Kolenati	RK	hollows	gt	Qu
Biphyllidae				
Biphyllus lunatus (Fabricius)		heartrot fungi	bt,fg	Fa,Fr
Erotylidae				
Triplax russica (Linnaeus)		fungi	bt	Qu
Dacne rufifrons (Fabricius)		fungi	fg	Qu
Cerylonidae				
Cerylon ferrugineum Stephens		bark	lb,rw	Qu
Cerylon histeroides (Fabricius)		bark	lb,rw	Qu
Corylophidae				
Orthoperus nigrescens Stephens	Nb	bark	bt,gt	Fr,Qu
Endomychidae				
Mycetaea hirta (Marsham)		hollows	gt,rw	Fa,Fr
Lathridiidae				
Aridius nodifer (Westwood)		fungi	gt	Fa,Fr
Enicmus brevicornis (Mannerheim)	N-	fungi	bt	Qu
Enicmus rugosus (Herbst)	N-	fungi	bt	Qu
Dienerella separanda (Reitter)		fungi	rw	Qu
Corticaria elongata (Gyllenhal)		dead twigs	rw	Qu
Cisidae				
Cis alni Gyllenhal		dry dead boughs	bt	Qu
Cis pygmaeus (Marsham)		dry dead boughs	bt	Fr,Qu
Cis vestitus Mellié		dry dead boughs	bt	Fr,Qu
Cis bilamellatus Wood		fungi	rw	In
Cis boleti (Scopoli)		fungi	bt	Qu
Cis nitidus (Fabricius)		heartrot fungi	fg	In
Mycetophagidae				
Litargus connexus (Fourcroy)		fungi	bt	Qu,Ul
Mycetophagus piceus (Fabricius)	Nb	heartrot fungi	bt	Qu
Mycetophagus quadripustulatus (Linnaeus)		fungi	bt,fg	Ap,Qu
Colydiidae				
Bitoma crenata (Fabricius)		bark	lb	Qu
Tenebrionidae				
Eledona agricola (Herbst)	Nb	heartrot fungi	fg	Qu
Salpingidae				
Lissodema quadripustulata (Marsham)	Nb	dead branches	bt	Fr,Ul
Vincenzellus ruficollis (Panzer)		bark	bt	Ap
Rhinosimus planirostris (Fabricius)		bark	bt	Ca,Fa,Qu,Ul
Pyrochroidae				
Pyrochroa serraticornis (Scopoli)		bark	bt	Cr,Fa
Melandryidae				
Abdera biflexuosa (Curtis)	Nb	dead boughs	bt	Qu

Phloiotrya vaudoueri Mulsant	Nb	dead branches	lb	Qu
Conopalpus testaceus (Olivier)	Nb	dead boughs	bt	Qu
Scraptiidae				
Scraptia testacea Allen	Na	dead boughs	bt	Qu
Anaspis frontalis (Linnaeus)		dead branches	bt	Ac,Cr,Qu
Anaspis garneysi Fowler		dead branches	bt	Cr,Qu
Anaspis humeralis (Fabricius)		dead branches	bt	Cr,Qu
Anaspis maculata Fourcroy		dead branches	bt	Ac,Cr,Fr,Qu
Anaspis regimbarti Schilsky		dead branches	bt	Cr,Qu
Mordellidae				
Mordellistena neuwaldeggiana (Panzer)	RK	heartrot	bt	Qu
Aderidae				
Aderus oculatus (Paykull)	Nb	heartrot?	bt	Qu
Aderus populneus (Creutzer)	Nb	heartrot?	bt	Qu
Cerambycidae				
Stenocorus meridianus (Linnaeus)		dead boughs	bt	Fr
Grammoptera ruficornis (Fabricius)		dead twigs	bt	Cr,Qu
Phymatodes testaceus (Linnaeus)		dead boughs	lb	Qu
Clytus arietis (Linnaeus)		dead branches	bt	Cr
Anaglyptus mysticus (Linnaeus)	Nb	dead branches	bt	Cr
Mesosa nebulosa (Fabricius)	R3	dead boughs	bt	Qu
Pogonocherus hispidus (Linnaeus)		dead twigs	bt	Ac
Leiopus nebulosus (Linnaeus)		dead branches	bt,lb	Qu
Tetrops praeusta (Linnaeus)		dead twigs	bt	Cr
Anthribidae				
Tropideres sepicola (Fabricius)	R3	dead boughs	bt	Qu
Curculionidae				
Magdalis armigera (Fourcroy)		dead twigs	bt	Ul
Magdalis cerasi (Linnaeus)	Nb	dead twigs	bt	Qu
Euophryum confine (Broun)		rotten wood	gt,rw	Qu,In
Phloeophagus lignarius (Marsham)		sapwood	gt	Fr
Acalles misellus Boheman		dead twigs	bt	Ap,Qu,Ul
Scolytidae				
Scolytus intricatus (Ratzeburg)		bark	lb	Qu
Scolytus multistriatus (Marsham)		bark	lb	Ul
Scolytus rugulosus (Müller)		bark	bt	Cr
Scolytus scolytus (Fabricius)		bark	lb	Ul
Hylesinus oleiperda (Fabricius)		bark	bt	Fr
Leperisinus varius (Fabricius)		bark	bt,lb	Fr,Qu
Acrantus vittatus (Fabricius)		bark	bt	Cr
Dryocoetinus villosus (Fabricius)		bark	lb	Qu
Ernoporus caucasicus Lindemann	R1	bark	lb	Ti
Ernoporus fagi (Fabricius)	Na	bark	bt	Qu

Epierus comptus (Erichson) (Histeridae) in profusion in Wiltshire

David R. Nash
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Epierus comptus was added to the British List on the basis of a single example found under beech *Fagus* bark in Grovely Wood, near Salisbury, South Wiltshire (VC 8; SU 0433) in August 1980 (Nash, 1982). It is assigned RDBK status by Hyman (1992). As far as I am aware, there have been no reported captures of the species since that time.

During the 1980s I visited Grovely in most years to record beetles. Diligent searching in most areas of the extensive woodland failed to turn up additional specimens until 4th August 1987, when four examples were found under the bark of a fallen beech trunk in an area of the wood (SU 0635) some distance from the site of the original capture. Working another fallen beech in this same part of the wood on 11th August 1987, I was amazed to find the beetle in great numbers, over 36 examples being counted in one small sample area *c.* 6 cm square. It is almost certain that the beetle occurred in hundreds on this trunk although, not wishing to destroy the microhabitat, further portions of bark were not removed. The only other beetle noted was a single *Strangalia quadrifasciata* (Linnaeus) (Cerambycidae). *Epierus* was still to be found in small numbers on one of these trunks on 1st August 1988.

In my experience, our subcortical histerids such as *Paromalus flavicornis* (Herbst), *Plegaderus dissectus* Erichson and *P. vulneratus* (Panzer) typically seem to occur in relatively small numbers, although they can at times occur in profusion (*vide* Allen, 1968). Interestingly, Horion (1949) documents the capture of over 200 *E. comptus*, together with *Acritus (Aeletes) atomarius* Aubé, from a rotten fallen poplar *Populus* at Herkulesbad, southern Hungary (leg. Karl Dorn, 1938).

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Book Notice

A Provisional Checklist of the Beetles of Warwickshire (Vice County 38): Millennium Edition by S.A. Lane. Warwick: Warwickshire Museum Service. 1999. xii+39[+2] pp. A4 ring bound. £2.00+45p p&p. Available from Mrs Pam Copson, Warwickshire Museum, Market Place, Warwick CV34 4SA. Cheques should be made payable to 'Warwickshire County Council'.

This list of Warwickshire (VC 38) Coleoptera has been produced with the aim of providing information to anyone who may in future record beetles in the county, in the hope that they will in turn provide data to increase the county's knowledge of the species' distribution, abundance and ecology. The list currently stands at 2031 species. Selected scarcer species are annotated with recorder name, date and locality. The author intends to publish additions and amendments on an annual basis. The county Coleoptera record files are currently housed at the Herbert Art Gallery and Museum, Coventry, and can be consulted by appointment with the author.

K.N.A. Alexander

Is *Scydmaenus rufus* Müller & Kunze (Scydmaenidae) really Vulnerable?

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This beetle is listed as RDB2 (Vulnerable) in Hyman (1992), a status which it clearly doesn't warrant. Although very small, it is noticed in the field because of its coloration and would appear to be widespread and not especially uncommon, albeit in association with old wooded areas. I have encountered it at several sites in southern England, in a variety of habitats:

North Hampshire (VC 12) — Ackender Wood, Beech (SU 6938): abundant in decaying haystack debris on top of a manure heap next to old beech woodland, iii-vii.1998. Binswood (SU 7636): two under attached bark of fallen beech with *Mycetophagus atomarius* (Fabricius) (Mycetophagidae) and *Bitoma crenata* (Fabricius) (Colydiidae), 4.iv.1999.

Surrey (VC 17) — Churt (SU 8539): 1 sieved from deep inside a Wood Ant *Formica rufa* (Hym.: Formicidae) nest on 24.ix.1997; the nest was surrounded by mature pine *Pinus* woodland. Mountain Wood (TQ 0950): abundant under the attached bark of a large fallen beech *Fagus* tree, v-vi.1999; it was found along the moist edge at the boundary of lifting dry bark and the attached, moister, intact layer. West End Common (TQ 1262): found in nearly identical conditions to the previous record, on 27.iv.1999.

Berkshire (VC 22) — Ardington Lane, [modern Oxfordshire] (SU 4390): under loose oak *Quercus* bark on a large dying tree, 24.vii.1998.

Reference

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Coleoptera consumed by a Polecat *Mustela putorius* Linnaeus

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On 6.ii.1999, a single Polecat dropping, voided during the autumn of 1998, was collected from a mammal-run in grassland with some sparse Bracken *Pteridium aquilinum* on an open exposed summit of the Malvern Hills, Worcestershire (VC 37; SO 74), at an altitude of 390 m.

In addition to the remains of four Common Earwigs *Forficula auricularia* (Linnaeus) (Derm.: Forficulidae), it contained numerous fragments of Coleoptera, generally chewed into very small pieces, although curiously, many of the abdominal segments of *Byrrhus* remained in their original sequences. It has been possible to estimate the minimum number of individual beetles contained in the dropping, collected by the Polecat as it roamed the varied landscapes of the Malvern Hills.

Carabidae: *Carabus violaceus* Linnaeus, 1; *Leistus fulvibarbis* Dejean, 1; *Nebria brevicollis* (Fabricius), 3; *Pterostichus madidus* (Fabricius), 5; *Abax parallelepipedus* (Piller & Mitterpacher), 1; well-preserved ovae, gen. and sp. indet., 3. Staphylinidae: *Atheta (Mocyta)* sp. indet., 1. Byrrhidae: *Byrrhus pilula* (Linnaeus), 8.

This Polecat clearly found Coleoptera to its taste, for the dropping contained no other food items apart from seeds of Sycamore *Acer pseudoplatanus*, some bud-scales, moss and grass fragments collected incidentally. Beetles form a recognised part of the Polecat's diet, although there appear to be few studies of them at species level.

Atheta hybrida (Sharp) (Staphylinidae) in East Northamptonshire

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During the summer of 1994 I erected a flight-interception trap in my rural garden at Hemington, East Northamptonshire (VC 32; TL 09158525) as part of an ongoing survey of its coleopterous fauna. Between 26th June and 2nd July the catch included a single male staphylinid which I identified as *Atheta hybrida* (Sharp). The known distribution in Britain at that time suggested this to be a northern species, and its occurrence in Northamptonshire appeared most unlikely. However, the aedeagus of this specimen conformed with that depicted in Strand & Vik (1964) and the elongate terminal segments of its antennae matched the description in Freude, Harde & Lohse (1974). I decided to send the specimen to Peter Hammond at the Natural History Museum, London, in expectation that he would be able to confirm my identification. Unfortunately the specimen never reached him and, although confident in my own mind, I felt that with the loss of my specimen its identity must remain in doubt.

When Jonty Denton (1998) reported collecting a single female *A. hybrida* at Rotherfield Park in North Hampshire on 23rd March 1997, and mentioned a previously unpublished record from Ashtead Common, Surrey, in May 1942, my Northamptonshire record acquired a greater degree of credibility. Booth (1998) has since discounted the latter record but provides an additional record of a single female specimen which he collected on 13th July 1998 at Haddenham, Cambridgeshire, a village less than 40 km ESE of Hemington. In the light of these recent discoveries I feel that I can now announce, with renewed confidence, the occurrence of *A. hybrida* in Northamptonshire in 1994.

References

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Trichiusa immigrata Lohse (Staphylinidae) in Northamptonshire

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During the night of 17th/18th October 1997 at Hemington, East Northamptonshire, the wind swung from a cold northerly to a mild southwesterly. During the day temperatures rose to 20°C and by late afternoon numerous small beetles could be seen flying over my vegetable garden adjacent to a compost heap. By using a sweep-net some 40 species were recorded, of which half were Staphylinidae. Among these was a single male which when compared with a specimen collected by John Owen from Epsom Downs, Surrey (Owen *et. al.*, 1997) proved to be *Trichiusa immigrata* Lohse.

This species is believed to be a recent immigrant into Europe from North America. Lohse & Lucht (1989) provide excellent habitus, aedeagus and spermatheca figures. It was first recorded in Britain from Kent, at Higham Marshes in 1992 and Rother Levels in 1993 (Heal, 1993). Other published records are from Leicestershire (Lott, 1995), Dorset (Allen, 1996) and most recently by Denton (1998) from East Yorkshire. In all these cases only one, two or at most three specimens were found. Only at Epsom were "many specimens" collected from 16 grass heap samples examined between 1993 and 1995.

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Scaphidium quadrimaculatum Olivier (Scaphidiidae) at a northern Scottish locality in East Ross

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While visiting Loch Achilty, East Ross (VC 106; NH 564427) with Magnus Sinclair on 27th June 1998, I found a single specimen of *Scaphidium quadrimaculatum* sheltering under a red-rotten birch *Betula* log in mixed birch and aspen *Populus* woodland not far from the shore of the loch. The specimen was taken during the Scottish Entomologists' Field Meeting held at Strathconon, East Ross, and this is over 90 miles north of its previous northernmost record at Inversnaid, Loch Lomond (Crowson, 1965), representing a considerable extension of its known range.

Although locally distributed in Britain (Lyneborg, 1977), there are few known Scottish localities for *S. quadrimaculatum*. Dr Roy Crowson recorded the first Scottish specimen (as a larva) at Rossdhu, Loch Lomond, on 23rd July 1953 (Crowson, 1956), subsequently finding adults at Inversnaid, Loch Lomond on 27th May 1962 (Crowson, 1965). Dr Crowson also recorded a third locality at Wood of Cree, Kirkcudbrightshire, on 29th September 1962 (Crowson, 1965). Recently it has been recorded from a further Loch Lomond woodland site. A single specimen was found near Rowardennan at the Glasgow University field station on 17th October 1991 by Dr Shona Blake (*pers. comm.*), where it occurred amongst fungal hyphae in dead wood.

It would appear that this is a very rare and localised species in Scotland, since the majority of Scottish records are from the deciduous woodlands surrounding Loch Lomond. Searching of rotten dead wood in ancient birch woodland in the north of Scotland may reveal additional Scottish localities.

Acknowledgement

My thanks to Dr Shona Blake of the Scottish Agricultural College at Auchincruive for allowing me to publish details of the Rowardennan record.

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Philonthus spinipes Sharp (Staphylinidae) and other species of note from manure heaps in Warwickshire

S. A. Lane [1] *& D. J. Mann* [2]

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[2] Hope Entomological Collections, Oxford University Museum of Natural History, Parks Road, Oxford OX1 3PW

On 2nd August 1998, whilst undertaking fieldwork in south Warwickshire, a large staphylinid with red elytra was found which was later identified as a female *Philonthus spinipes*, a species recently added to the British List (Allen & Owen, 1997). The specimen was found in old horse dung amongst rank grass on a roadside verge near Fell Mill Farm (VC 38; SP 268413).

The area was revisited on 14th September to ascertain whether this species was established. Access to a smallholding (SP 268408) was granted by the owner. This site, which is almost adjacent to the original capture site, contains a manure heap *c.* 2 m in length and 1.5 m in height. The heap consists of wood shavings, horse manure and to a lesser extent straw and old hay. According to the owner it has been established for some 15 years. At the time of examination, approximately 90% of the heap had been burnt but, despite this, sieving of the heap produced a single female specimen of *P. spinipes*. It is believed that the specimen found in August originated from this heap and had possibly been forced out by the burning process.

A second visit to this site on 19th September by both authors yielded no further examples even though considerable time was spent sieving. The two visits collectively produced several species of interest including *Perigona nigriceps* (Dejean) (Carabidae), *Cercyon atricapillus* (Marsham) (Hydrophilidae), *Philonthus rectangulus* Sharp and *Cilea silphoides* (Linnaeus) (Staphylinidae).

P. spinipes was found at a second Warwickshire site in a manure heap at Bubbenhall Bridge Stables (SP 354726) on 26th September. Sieving for 30 minutes produced a single male. This manure heap, which is *c.* 10 m in length and 3 m in height, consists of horse manure, straw and old hay bales. The heap is burnt sporadically, but fresh material is added regularly. It was moved to its current position about two years ago from a ten-year-old heap 250 m away on site. At its original location, it had been sieved some two years previously, but no *P. spinipes* were found. This suggests that the species is a recent arrival to this site.

A second visit to this site on 8th November yielded a further seven specimens of *P. spinipes*, of which four were taken, indicating that this species is probably well established. Other beetles of note from this site include the resident alien species *Perigona nigriceps*, *Cilea silphoides*, *Philonthus rectangulus*, *Phacophallus tricolor* Kraatz (Staphylinidae), which is new to the county, and *Cryptopleurum subtile* Sharp (Hydrophilidae).

These records of *P. spinipes* appear to constitute a significant northerly extension of the species from its only other known British locality of West Parley, Dorset (Allen & Owen, 1997), indicating either a rapid or undetected spread of the species. A recent visit to the original Dorset locality by Tony (A.J.W.) Allen only produced one specimen. A further two or three apparently suitable sites were searched in the area, but none were found to contain *P. spinipes* (J. Owen, *pers. comm.*). In Warwickshire, the relatively small number of manure heaps that have been sampled invites speculation that this species is more widespread than currently thought.

Specimens have been deposited in the authors' respective institutional collections.

Acknowledgements

We thank Mary Mitchell of Fell Mill and Michaela Mann of Bubbenhall Bridge Stables for granting access to their land, John Owen for furnishing us with information, Tony Allen for allowing us to publish his most recent record and Tony Barlow for assistance in the field.

Reference

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Coleoptera on the promenade at Weston-super-Mare, Somerset

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In a generally dull month which produced at least 11 rain-days in southwestern Britain, the 19.ix.1998 provided notable relief. The late evening at Weston-super-Mare, North Somerset (VC 6; ST 3262) on that day was notably warm, approximately 25°C, and the entire coastal strip was bathed in brilliant sunlight. The sudden surge of warmth had triggered intense insect activity all along the coastal zone, a variety of Hemiptera, Auchenorrhyncha and Coleoptera being involved. A number of the species are warm-stenothermic and frequently associated with human-culture effects, for example the Lesser Earwig *Labia minor* (Linnaeus) (Derm.: Labiidae).

Initially settled at table in the open, I was rapidly made aware of Coleoptera when a *Pogonocherus hispidus* (Linnaeus) (Cerambycidae) landed on my plate. Along the waterfront, large yellow waste-bins are a conspicuous feature and these were targeted by *Psylliodes chrysocephala* (Linnaeus) (Chrysomelidae) as copulation spots; as darkness descended many of the Coleoptera remained on these and on the sea-wall. It is likely that changes of atmospheric pressure were responsible for dumping these beetles on a narrow coastal strip, and that in that sense, their concentration is fortuitous. Could it be, however, that such well-known aerial dispersals are a prelude to, or prerequisite for, copulation for certain of these species, and timed to fulfil that prime objective?

Following Duff (1993), some of the Coleoptera noted are scarce in Somerset, although a number are doubtless under-recorded. In the following list, which with diligence could have been extended, the number of previous vice-county records, where significant, is given in parentheses.

Carabidae: *Notiophilus biguttatus* (Fabricius), 1; *Bembidion lunulatum* (Fourcroy), 2. Staphylinidae: *Carpelimus bilineatus* Stephens, 1; *Leptacinus pusillus* (Stephens), 3 (1); *Phacophallus parumpunctatus* (Gyllenhal), 2 (2); *Tachyporus hypnorum* (Fabricius), 1; *T. nitidulus* (Fabricius), 1. Nitidulidae: *Carpophilus marginellus* Motschulsky, 1 (2). Byrrhidae: *Simplocaria semistriata* (Fabricius), 1. Rhizophagidae: *Monotoma picipes* Herbst, 1 (5). Anthicidae: *Omonadus floralis* (Linnaeus), 3. Cerambycidae: *Pogonocherus hispidus* (Linnaeus), 1. Chrysomelidae: *Longitarsus parvulus* (Paykull), 3 (1); *Psylliodes chrysocephala* (Linnaeus), 97. Apionidae: *Catapion pubescens* (Kirby), 1 (2). Curculionidae: *Sitona hispidulus* (Fabricius), 220; *S. lineatus* (Linnaeus), 2; *Hypera plantaginis* (De Geer), 1.

A number of the *Psylliodes chrysocephala* were of the form *anglica* (Fabricius), including one with a very limited amount of infuscation on the frons. This was submitted to Dr M.L. Cox who kindly confirmed its identity.

Reference

DUFF, A. 1993. *Beetles of Somerset*. Taunton: Somerset Archaeological & Natural History Society, 269 pp.

Letter

More on 'noddy names' for British beetles

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As someone responsible for coining the occasional English name for a British beetle, I'm pleased that Jonathan has raised this issue (Cooter, 1999). Indeed it was I who phoned him about an English name for *Hypebaeus flavipes* (which eventually became the '*Moccas beetle*' following a suggestion from the local NCC office). At that time we had to have English names for species included in the Act and so '*violet click beetle*', '*spangled water beetle*', '*rainbow leaf beetle*' and so on were born. These days, it is possible for the legal/official name of a beetle to be simply '*a water-beetle*' or even '*a beetle*', but it wasn't at the time.

I think that some generic (*sensu lato*) epithets for beetles, usually at the family level, are genuinely worthwhile. This is where the Recorder software (actually JNCC's not just English Nature's as Jonathan suggests) is powerful but has currently come somewhat unstuck. If there is no specific English name, Recorder searches higher up the taxonomic tree to find one. However, some families include more than one recognised group with separate English names. Thus Chrysomelidae include leaf beetles, flea beetles, tortoise beetles and reed beetles, but all come out in Recorder as '*a leaf beetle*'. In the forthcoming Windows version of Recorder a generic English term may be attached at any taxonomic level or to unrelated groups of species. Thus certain *Cercyon* species can become '*a small dung beetle*' rather than '*a scavenger water beetle*' as at present.

However, I agree wholeheartedly with Jonathan that the great majority of species don't warrant an English name. Concocting them for hundreds of species of *Atheta* would be pointless, and probably as successful as Edward Step's attempts to coin names for all of the British aculeate Hymenoptera: who now uses names like '*the five-banded-tailed digger wasp*' or '*the wood-carving leaf-cutter bee*' (Step, 1932)? Species lists composed purely of Latin names are usually forgotten by non-entomological conservationists or planners, whereas if they are fleshed out with English names (*always* after a scientific name) and details of their appearance, habits, etc., then some notice may be taken. The invention of English names for individual species is worthwhile only for those few species which already have a spotlight turned on them, such as their inclusion in legislation or the UK BAP. These will have names coined for them, by the media, by their "champions" or by conservation bodies, whether we like it or not. The other instance where new English names might be beneficial is for big and showy species which have the potential to get people interested in the subject but where, in today's dumbed-down society, a scientific name is a put-off. Among the beetles, the bigger cerambycids, a few of the prettier chrysomelids and perhaps a few others might be worthwhile. Contriving English names has been shown to work for the ladybirds (Majerus & Kearns, 1989).

I believe that new English names are probably inevitable for the few species on which the media spotlight is focused and for these we might as well join in the fun, even if only as a damage limitation exercise. But neither English Nature nor, I am sure, any of the other government agencies, have either the time, money or inclination to set about a full-scale naming binge. However, Jonathan's letter has got us talking, and that's what's important.

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STEP, E. 1932. *The Bees, Wasps, Ants and Allied Insects of the British Isles*. London: Warne.

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.

Wanted: Glass bull's-eye in a suitable free-standing adjustable mount for use with standard design stereo microscope. Also *Entomologist's Mon. Mag.* for the years 1930-1940 and 1942-1946. *R.J. Marsh*, 11 Crusader Drive, Doncaster DN5 7RX. Tel.: 01302 788411. E-mail: bob.marsh@virgin.net.

Records of *Pselactus spadix* wanted: As part of my Ph.D. project on *Pselactus spadix* Herbst (Curculionidae: Cossoninae), I am studying the distribution of this species in the U.K. The weevil inhabits timber structures extending into the intertidal zone. I would be very grateful to receive records of this beetle, especially from S.W. and N.E. England and Wales. Please send voucher specimens where identification is in doubt; these will be returned. Your help will be very much appreciated and all contributors will be acknowledged. *P. Oevering*, Forest Products Research Centre, Buckinghamshire College, High Wycombe, Bucks. HP11 2JZ.

Beetle photos wanted: Good-quality prints or transparencies (including SEMs) of British beetles are always wanted to illustrate *The Coleopterist*. We can't pay you, but you will get to see your work in print and the photographer is always acknowledged. Please write to the Editor.

Copy of 'Fowler' wanted: Fowler's *Coleoptera of the British Islands* (the unillustrated brown-cover version) is sought in order to obtain the set originally owned by my mentor, the late T.R. Eagles, which is of great sentimental value to me. The present owner has kindly agreed to let me have Eagles' volumes provided I replace them with an identical set. *John Rudge*, Wayfarers, Haglands Lane, West Chiltington, West Sussex RH20 2QS Tel.: 01798 812476.

New Scirtidae recording scheme: A recording scheme for British and Irish Scirtidae is to be run in conjunction with the current aquatic Coleoptera scheme. Please send records and problem specimens to me, or add records to water beetle record cards sent to Prof. Garth Foster, 3 Eglinton Terrace, Ayr KA7 1JJ. *Dr Jonty Denton*, 26 Bow Street, Alton, Hants. GU34 1NY.

Woodland beetle lists wanted: In *The Coleopterist* **6**: 61-66 a new system for assessing the importance of wooded habitats for conservation was proposed. Since then attempts have been made to develop the necessary evaluation index and significant progress has been made. The system now needs testing against a wide range of woodlands and parklands and I would be grateful if any coleopterists with beetle lists (either from single visits or collations of records) from such habitats would kindly send me copies. *Adrian Fowles* Countryside Council for Wales, Plas Penrhos, Bangor, Gwynedd LL57 2LQ.

Wanted: I would like to purchase the following Royal Entomological Society Handbooks: Vol. 4(8a) Staphylinidae (part) by C.E. Tottenham; Vol. 5(9) Lagriidae to Meloidae by F.D. Buck; and Vol. 5(15) Scolytidae and Platypodidae by E.A.J. Duffy. *Adrian Dutton* 59 Southdale Road, Carlton, Notts. NG4 1EU.

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